THE BEGINNINGS OF DISEASE CONTROL IN LONDON;

THE WORK OF THE MEDICAL OFFICERS IN THREE PARISHES, 1856 - 1900

by

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Thesis submitted for

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Doctor of Philosophy

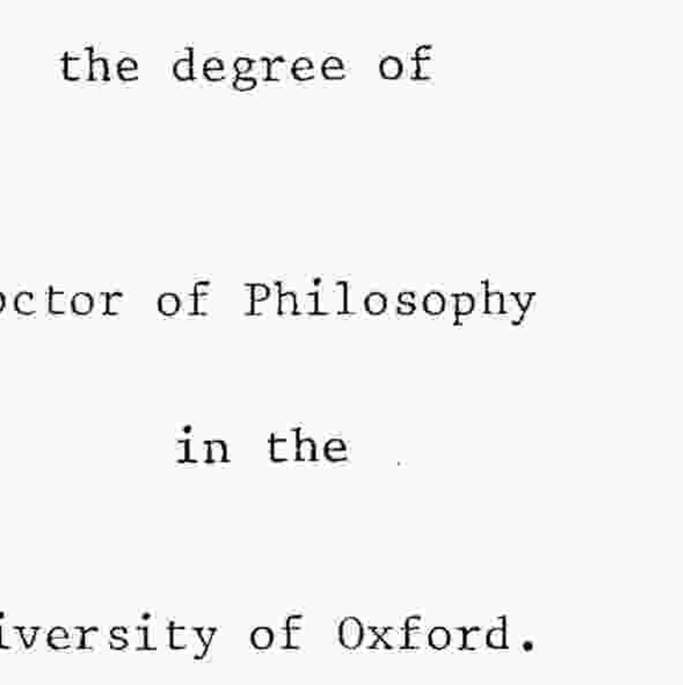
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The Beginnings of Disease Control in London; the Work of the Medical Officers of Health in Three Parishes, 1856-1900, by Anne Wilkinson, Nuffield College, Oxford. Thesis submitted for the degree of Doctor of Philosopy in the University of Oxford, Trinity Term 1980.

The present study examines the problems which the London medical officers of health encountered in public health improvement. The problems of health and disease in nineteenth century England have attracted some attention from historians in recent years, although little attention has so far been paid to the local difficulties of public health improvement. Without an illumination of these problems, the magnitude of the task facing the medical officers, the men responsible for the local control of disease, must remain obscure. The London medical officers of health created by the Metropolis Local Management Act 1855, were representative of the new specialist administrators of the Victorian period, and were the first group of doctors to take a professional interest in the general problems of health and disease in the Victorian city. Their annual reports, which are the principal primary source for this study, are the earliest continuous series of material existing for the comparative study of local health problems in England. This thesis examines the legislative, institutional, intellectual and social context in which the medical officers operated; the structure of the local health organisation; the work of the officers in relation to particular communicable diseases (typhoid, typhus, tuberculosis, smallpox, cholera, scarlet fever, diphtheria, measles and whooping cough); and in the fields of environmental improvement and housing reform. Although the work of the medical officers can be seen to be contributary rather than crucial in the diminution of mortality in the nineteenth century, the conclusions of this study indicate that they played an important part through health education in preparing the way for the successful implementation of social legislation in the twentieth century.

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LIST OF ABBREVIATIONS

Ann. Rep.	Annual Reports
ATBC	Anti-Tuberculosis Campaign
IDCPD	Inter Department Committee on Physical Deterioration
LCC	London County Council
LGB	Local Government Board
MAB	Metropolitan Asylums' Board
MOH	Medical Officer of Health
RCHWC	Royal Commission on the Housing of the Working Classes
S.C.	Southwark Collection
SCALDI	Select Committee on Artizans and Labourers' Dwellings Improvement
SLP	South London Press

ABSTRACT

The nineteenth century public health movement has become a subject of major interest to social historians in recent years. The development of public health services in Victorian England is closely connected with the histories of local government, town planning, housing and demography, and with the history of the labouring classes; and the modern concern with the problems of the Victorian city has also placed emphasis on this aspect of urban development. Most recent work in this area has been concerned either with the development of central health policies and administration, or with the condition of the people question. In so far as disease is concerned, recent work concentrates heavily on the impact of cholera on English society. Little, however, has been done to elucidate the emergence of local health administrations, or the process by which health policies were applied in the localities and the results which were achieved. The present thesis sets out to achieve a broader understanding of the pioneer phase of public health administration, and to illumine the process by which legislation became - or did not become - practically effective, and the difficulties with which the process was beset. The principal concern of this study has been the work of the medical officers of health in connection with the control of the communicable diseases which were so prevalent in nineteenth century society, and whose eradication was the chief inspiration of the public health movement, and the cause which brought practical preventive medicine into being in Britain.

The thesis examines the work of the medical officers of health in the London parishes of St. George-the-Martyr, St. Mary Newington and Camberwell in the first phase of municipal public health concern under the civil vestry system in the period 1856-1900. The three parishes were selected partly because of their geographical proximity (and therefore, the likelihood of a similar disease vulnerability in terms of location), and partly because of their differing social, historical and industrial character. St. George-the-Martyr belongs, historically, to Southwark and had been built up and industrialised since the sixteenth century; one indication of its long urban history being that its population barely increased in the period 1851-1900. Newington, which lies south of St. George, was largely rural in 1855, but by 1900 its population had more than doubled, and its open spaces had been covered with houses containing a largely working and lower-middle class population. Camberwell presented a yet more rural character in 1855, although the northern zone of the parish, close by the Surrey Canal had already developed an urban industrial character. In spite of much building activity and a massive rise in population by 1900, Camberwell remained relatively rural in its southern and most socially exclusive areas.

The initial concern of this study has been to place the work of the medical officers in its historical context, which illuminates some of the difficulties which they faced in their task of controlling communicable diseases. Thus, the St. George's medical officer had to make an impact upon an established urban environment, largely inhabited by the very poor, while the Camberwell officer conducted what was

essentially a holding operation to prevent health standards deteriorating in a context of rapid urban development, albeit one that involved a relatively small proportion of the very poor. Although the character of the parish was important to the measure of preventive success, other factors must be taken into account (Chapter I). Social factors, such as responses to illness and death, the state of medical knowledge and current ideas on disease causation, and other institutions concerned with sanitary improvement, poverty, disease, and general social administration, all affected the medical officers' work. The evolution of preventive policy and action was by no means a straightforward process, and the officers were often obliged to modify their ambitions in line with established social responses to disease, and to accommodate contradictions and confusions in the legislation which provided the framework for their activities.

The responsibility for public health in London in this period rested very largely with the vestries and their officers (Chapter II), and these preserved a high degree of autonomy in their operations. Individual vestries exercised varying degrees of control over their health officers at different periods, but in general seem to have allowed them considerable independence of judgement. The medical officers in turn directed the work of the inspectors of nuisances, and worked in alliance with the vestry surveyor, and public analyst. The interest of the local health organisation centred very much on the circumstances and conditions of the parish for which they were immediately responsible: there was very little,and very rare, cooperation between one parish and another, and the existence of such very localised interests at times acted to the detriment of health conditions inthe capital as a whole.

The principal concern of the medicalofficers being with the communicable diseases, their work in respect of individual diseases has been treated in detail (Chapter III). The communicable diseases of interest at this period fall into three main groups: "environmental" (typhoid and typhus, and tuberculosis); the major epidemic (smallpox and cholera); and the childrens' epidemic (scarlet fever, diphtheria, measles and whooping cough). The incidence and mortality of each of these diseases was variously affected by the work of the medical officers both in general, and in specific preventive measures and by a variety of outside influences. The individual sections discuss contemporary ideas on the causation of the specific disease, both medical and popular; the ways in which these ideas affected the medical officers' work and their efficiency; the condition of the three parishes in respect of the disease, and the difficulties encountered by individual officers. The development and application of bacteriologically based preventive measures were a central feature of health concern at this period, and the progress of such measures and the response they evoked can be traced in the work and writings of the medical officers.

Subsidiary concerns of the medical officers which were, nevertheless, intimately related to the task of disease control were the general sanitary environment and housing conditions. The environmental factors were from the beginning a major interest of the health departments (Chapter IV). The nuisances caused by local industry, the purity and quantity of water supplies and the adequate provision, not only of main drainage but more particularly of house drains, formed a considerable part of the medical officers' concern. Although much was achieved in

this area during the period 1856-1900, progress was often slow and jeopardised by vested interests and inadequate legislation. In some respects, much remained that was still unsatisfactory in preventive eyes at the close of the period. In respect of housing (Chapter V), the medical officers were much governed by the relationship between housing and disease, although they did not always agree with the motives and methods of the philanthropists and legislators also actively involved in housing reform. Investigations of disease incidence on particular estates in Newington and Camberwell furnish evidence that epidemic diseases were not always concentrated amongst the poorest classes and show how, with the development of ideas on disease causation, preventive interest was extended from over-crowding to social behaviour and patterns of social intercourse. By the 1890s, the new generation of trained medical officers were becoming more particularly interested in the domestic economy of the home, since in this seemed to lie the answer to the problems of infant mortality and the control of epidemic childrens' diseases.

The medical officers of health were among the first of the new specialist administrators of later nineteenth century government (Conclusion) but remained to a large extent medical rather than bureaucratic in their approach to health. This approach goes some way to explaining the achievement in the context of a society still antagonistic to the extension of administrative powers, and which remained widely ignorant of hygiene and the modes of disease transmission. The success of the medical officers in controlling disease must be gauged in respect of the

individual diseases, and in general terms other factors appear of greater importance than the officers' contribution in diminishing mortality from the communicable diseases in the nineteenth century. The nutrition factor, the virulence of disease strains, and resistance, must be taken into account. It is only with the "environmentally" transmitted diseases, notably typhoid and typhus and cholera, that the work of the preventive officers in the field of sanitary improvement can be seen to have been of importance. The medical officers' major contribution to the general diminuition in mortality may well lie principally in the educational role which they consciously played, and which may have led to significant improvements in general standards of hygiene, care of and behaviour towards, the sick.

In conclusion, the medical officers made a considerable contribution towards the future success of twentieth century social legislation, even though the fruits of their endeavours were not clear by the end of the nineteenth century. A local study can only give a narrow basis of evidence for this assertion, and other studies should be made to confirm or extend the impression, but the differences and similarities of the eight medical officers and the three parishes covered in this thesis, together with associated evidence from more general sources, argue strongly that the local health organisation established in Britain during the later nineteenth century played a crucial part in preparing for the acceptance of more wide-ranging social legislation in the twentieth century.

I

Prologue

LONDON AND THE PARISHES

The history of preventive medicine is from its beginning associated with that of towns and the stresses of urban society. As disease, and particularly epidemic disease, takes heaviest toll of densely packed urban populations, so the towns, with greater or less permanence and success, were the first societies to take steps for prevention. It was not, however, until the nineteenth century, when industrialisation brought greater concentrations of population than ever before, and when advances in medicine and economics began to make men aware of the enormous cost of loss of life and labour by preventable disease, that systematic attempt was made, according to existing knowledge and belief, to improve sanitary conditions and to regularise such forms of specific disease control as were then available. Although the impetus towards national health policies came from Austria - Germany, where the six volumes of Johann Peter Frank's 'Complete System of Medical Polity' (1779-1817) established the guidelines for the state regulation of health, it was in England that state concern for public health was first translated into practical measures. The Metropolis Local Management Act of 1855 was the first attempt to create a systematic health organisation in a particular area. The establishment of the civil vestries, with responsibility for drainage, paving, and lighting, etc., of the medical officerships associated with them, and of the Metropolitan Board of Works to supervise the common sanitary concerns of the capital, was unequalled in Europe.

The condition of London in 1855 was not such as to give the new administrative bodies cause for complacency or idleness. The memory of the cholera epidemic of 1854 was still vivid; and behind that lay other memories, of the cholera epidemics of 1832 and 1848-49, and of typhus epidemics in 1836-37 and 1847-48. The investigations of Edwin Chadwick, and of the Health of the Towns Commission, had shown that the physical conditions of human life, in London as elsewhere, were often appalling, and the daily wastage of human life from preventable causes was acknowledged to be frighteningly high. The mortality rate in London, by which contemporaries judged the general state of health, averaged 25 per thousand per annum, where expert opinion estimated 8 per thousand to be the highest necessary figure, given satisfactory sanitary conditions.[1] In addition to the disgracefulness of existing conditions, there was probably worse to come: the population of the city was continually increasing, and had spiralled from 864,845 persons in 1801 to 2,362,236 in 1851. The increases were largely made by immigration, and this, besides adding to the problems of housing, drainage, water supplies and employment, continually refreshed the disease vulnerability of the population, by continually augmenting the numbers of persons previously unexposed to the infections endemic in the metropolis. The debilitating effect of urban life upon the human constitution was already a cause for concern, the theory of urban degeneration well established. As early as 1837, John Hogg remarked that the physical appearance of the Londoner betrayed

> ... the truth that cannot easily be concealed, namely, that the inhabitant of the metropolis does not possess the physical vigour, the stamina of constitution, in a word, the HEALTH which is necessary to the full enjoyment of the comforts and blessings of life.[2]

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1. B.W. Richardson, Hygeia, (1876), pp. 17 and 44.

2. John Hogg, London As It Is, (1837), p. 31.

The consciousness of health was an element slowly and variously emerging in English society, first becoming apparent during the eighteenth century. The popularity of the spa towns such as Bath and Cheltenham, and later of the coastal resorts, was due in the first instance to the fashions for taking the waters and later for sea air and bathing, and only subsequently to the social functions which established themselves once such activities drew the attention of fashionable society. The physical qualities which made life at these resorts so invigorating were available elsewhere, perhaps moderated but more conveniently, close to the cities where business and society were conducted. Already in the early eighteenth century the population of South London, in Tudor times renowned for its unsavoury character, was becoming increasingly homogeneous.[1] The fashion for health and country living, which played a considerable part in the subsequent development of London, did not, however, automatically extend public receptiveness to nineteenth century sanitary ideas. In 1856, William Rendle could exclaim incredulously that "in this 19th century there are some, not without education, who believe that foulness is both healthy and fattening".[2] The externals of a healthy environment long remained more significant in the public consciousness than the details of closet construction and the quality of water supply.

The desire for a healthier, or pleasanter, environment, was a major influence on the changing internal patterns of building and settlement in London. Professor Olsen has explained how, in the course of the nineteenth century, the ancient 'village' pattern of London disappeared, as the old mixed social structure of street populations gave way before

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1. H.J. Dyos, Victorian Suburb, (1961), pp. 35-36.

2. Med. Off. Half-Yearly Report, St. George, July, 1856, p. 14.

increasing social segregation.[1] Increasing class consciousness and the desire of the middle classes for privacy,were reinforced by the growing association of disease with uncleanliness and the dwellings of the very poor. Thus in 1850, Thomas Beames on London's rookeries - "we fear them for what they are, - beds of pestilence, where the fever is generated which shall be propagated to distant parts of the town".[2] Whatever medical opinion on the causality of disease, the established miasmatic conception lingered long in the public mind, and provided a further influence for segregation of social classes. Even in popular literature, the dangers of too close an association with the poorest classes and their habitations was a theme, as in Bleak House. Here the description of Tom-All-Alone's stands as an eloquent warning: "there is not a drop of Tom's corrupted blood but propagates contagion and infection somewhere...".[3] Even at the close of the century, the strength of these ideas is evident in a complaint of the congestion in the Public Library at Peckham, much used by the labouring classes: "the atmospherical conditions of the building are simply appalling. The air swarms with microbes, germs, bacilli, and all the nameless horrors that go to make up consumption, influenza, blood-poisoning, and a hundred-and-one diseases".[4]

The growth of the metropolitan suburbs, one of the chief features of nineteenth century London, was thus the result, not simply of the rapid expansion of London's population, but also of that tangle of social and economic forces that made London's a complex evolution. At this period suburban growth affected London especially at the northern and southern perimeters, and was, to a large extent, residential. The development

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1. D.J. Olsen, 'Victorian London: Specialization, Segregation and Privacy', Victorian Studies, March, 1974.

2. Thomas Beames, The Rookeries of London (1850), p. 119.

3. Charles Dickens, Bleak House (O.U.P. ed. 1948), p. 627.

4. South London Press, 20th February, 1892.

of a transport system within the capital, at first horse-drawn omnibuses, later trains, fostered this tendency. From the sanitary point of view, this changing pattern of population densities created a livelier problem than would have been presented by a stationary population. In the old industrial centre of London, pressures were easing: in the outer parishes, the struggle was to maintain a sanitary status quo, or slow advance, against an influx of population and speculative builders. The mid-stream parishes, most, at this period, already at saturation point, faced an immense sanitary problem which had to be dealt with in a context of increasing population pressure, accompanied by declining rates as the more prosperous sections of the population withdrew elsewhere. It is against this background of population growth and movement that the work of the official sanitary departments created by the Metropolis Local Management Act of 1855 must be judged.

The development of London south of the river provides an illustrative microcosm of the sanitary problems produced by rapid urban development in the nineteenth century metropolis. Separated from the ancient City of London, and from the fashionable residential areas by the physical obstacle of the river, the area remained largely undeveloped until the nineteenth century. The half-dozen riverside parishes which have been described as belonging to the "inner industrial perimeter",[1] alone experienced major development before this period, and parts of Newington and Bermondsey, lying further from the river, had remained relatively rural. Beyond there lay the market gardens and pastures of Camberwell, and the undisturbed countryside of Wandsworth, Lewisham, and Plumstead. In the later nineteenth century, the inter-reaction of population growth and social policy in central London brought pressure to bear upon these areas.

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1. G.S. Jones, Outcast London, (1971), pp. 142-143.

By 1890, Charles Booth, with the stranger's impressionistic eye, was writing of South London as "a huge Metropolitan suburb" for which the river formed a physical but not a moral separation from the centre of London. Despite the activities of religious and philanthropic bodies, and the energy of local government, despite the replacement of old insanitary property by improved dwellings, the area seemed to Booth largely dismal, deprived of social comforts, and rooted in poverty. The closer to the river, in the oldest inhabited areas, the more intense the poverty and the dismal atmosphere became.[1]

The dreary slumland of Booth's vision, "in no part wealthy, and rarely rising above the standard of working class"[2] was, however, largely limited to the area within three or four miles of London Bridge. Here, it was noted, "private houses ... in which middle-class respectability once struggled through a precarious existence, are now almost wholly given up to sale and barter". Respectability had not disappeared, however; it had been "elbowed into London's vast outer circle".[3] The rings of poverty began in North Camberwell, but south of a line drawn below St. George's Ward, Camberwell, lay not poverty, but deepening layers of respectability and middle-class comfort. Sir Walter Besant, whose knowledge of South London was far more intimate than Booth's, discerned four social layers among its two million strong population. First, what he called "the submerged element", the people of the slums, of whom, he confessed, "their numbers and their proportion, I know not".[4] Second were the working people, "for whom the long lines, the endless lines, of barracks called model lodging houses have been built". The third layer was to be found

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1. Charles Booth, Life and Labour of the London Poor, (1892), Vol. 1, p. 276.
2. Ibid.
3. S.L.P., 16th January, 1876.
4. Walter Besant, South London, (1898), p. 326.

on a slip of ground of which Newington and Kennington were representative, and consisted principally of lodging-houses for clerks. Fourthly, came the suburban villa, from the little semi-detached cottage to the stately mansion. The whole of this area was dependent on the City: "if at any time the trade of the City were to decay, these suburbs would decay as well".[1]

The three parishes with which this thesis is principally concerned illustrate Besant's layers to a great extent. St. George-the-Martyr, the northernmost of the parishes, and the closest to the river, bordered on the exceedingly poor riverside parishes of St. Olave and St. Saviour, and consisted almost entirely of very poor housing among which numerous model dwellings began to rise from the 1860s on. St. Mary Newington, which encompassed Newington and Kennington, had a large population of the "clerk" class, associated with some respectable houses, and slum areas to the east of the Walworth Road, and north-west of the Elephant-and-Castle. Camberwell, over whose urbanisation much ink and regret were split in the latter part of the century, came to contain all four layers: from the slum population which manifested itself in corners of St. George's Ward, through the clerkly ranks of Camberwell and the cottages of Peckham to the exclusiveness of Dulwich. Long famous for its market gardens, by 1875 it was complained that from a pleasant rural parish, Camberwell had become "a congeries of streets", part of the metropolis itself.[2] The South London Press, detailing the progress of bricks and mortar all over South London at this time, observed that from Loughborough Junction to Peckham "both sides of the railway loop, which a year ago was the pride of the locality for pretty scenery, small houses, with but a very limited back or front

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1. Walter Besant, South London, (1898), p. 321-322.

2. W.H. Blanch, Ye Parish of Camerwell, (1875), p. 7.

area, are rising as rapidly as summer mushrooms". The old market gardens between Goose Green and Champion Park had been partly covered with cottages by the British Land Company, handsome, well-built houses were replacing the celebrated retreats west of Lordship Lane, while Troy Town "is thickening as fast as builders can progress, and Nunhead itself is fast becoming a brick-and-mortar wilderness.[1]

Behind this surge of building activity lay the hard realities of population growth. Camberwell, with an area of 4,450 acres had, in the mid 1850's, a population of some 60,000. Three-quarters of its area remained "market garden, grazing ground and open common".[2] By 1891, the population stood at 235,339, and the number of inhabited houses had sprung from 9,412 to 33,990. After some initial hesitation, the Vestry had done its best to conserve parks and recreation grounds, which it recognized as being "of priceless value to the community", but by 1900 the days were long gone when hedgehogs were more numerous than ratepayers, and the market gardens had given way to the manufacture of "size and soap, to monster gasometers, and to other 'outward and visible' signs of inevitable nastiness".[3] In the other two parishes, two centuries of industrial occupation had left their mark. Newington (632 acres) barely doubled her population from 64,800 (1851) to 115, 600 (1891) in this period, and the number of inhabited houses rose, unsteadily, from 10,458 to 13,392 (see Table 1). In St. George's (284 acres) saturation point had already been reached in the mid-fifties; the population increasing by only 8,000 between 1851 and 1891, the number of inhabited houses decreasing by 387 (1861-1891). The position of the parish death-rates at the beginning and end of the period reflect something of this population history, and the effect which it had upon the success of sanitary administration (Table 2).

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1. S.L.P., 1st January, 1876.
2. Camb. Vestry Mins., 24th October, 1900.
3. Blanch op. cit., p. 8.

The importance of industry in determining the nature of urban development in the South London parishes was considerable. St. George and Newington, as we have seen, belonged to the old industrial perimeter, and such trades as brush-making, hat-making and leather-dressing were long established there. In Camberwell, however, it was only with the completion of the Grand Surrey Canal in 1811 that agriculture began to retreat before industry, but even as industries developed, they remained close to the Canal, which offered both water and transport facilities. The existence of industry attracted a chiefly labouring population to the proximity. In St. George and Newington, the nineteenth century brought a deepening, or refining, of this social characteristic. In the former, a poor parish which had doubled its population between 1801 and 1851, the chief tendency remarked at the mid-century was the influx of the Irish, an indication that rents in the parish had fallen relatively low in the London scale.[1] In Newington, where a great deal of building was done in the 1860s, the tendency of the respectable to move out as the numbers of the poor and labouring increased was noted with alarm. Both parishes were characteristic losers in the game of social segregation that was being played out all over London. The proximity of trade, and particularly of "offensive" trades, was the determining factor. The gradual depopulation of the innermost industrial areas - old Southwark and the City, for instance - also had its effect: the decrease of 4,646 in the population of Christchurch, St. Saviour and St. John, Southwark, between 1831 and 1851, paralleled an increase of 20,000 in St. George-the-Martyr.

The question of cheap and convenient transport saved Camberwell from the worst of the influx of the poor. The development of business and industry in the north-eastern, Canal district of the parish did, however,

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1. Med. Off. Half-Yearly Report, St. George, July, 1856, p. 5.

attract a population significantly different from that drawn to the salubrious seclusion of the "Golden Hills". With the wharf labourers and bargemen, the tradesmen and minor industrialists came costermongers, carpenters, builders and others: by 1836 the Crown Street area south of the Canal was already noted as poor and vicious. The relative newness of the development seems, however, to have prevented the area from plunging as drastically as Newington and St. George. Booth found the houses of quiet and decent people as well as "accursed patches of poverty and vice" here in the 1890s. Despite some mixing of social levels, the rings of poverty became more marked within the parish during the century. Although, because of servants and lodgers, population density figures are not accurate indicators of social and poverty levels, they may, nevertheless, provide an impression. For instance, the respective density figures for the four areas of Camberwell are in marked contrast. St. George's, always acknowledged as the poorest and most insanitary quarter, contained 25 persons per acre in 1841, 76 in 1871 and 148 in 1901. Peckham, with some mixing of social class, had a density of 11, 36 and 80 in the same years. Clerkly Camberwell registered 10, 23 and 66, while wealthy and still rural Dulwich began with a density of 1, rising to only 7 in 1901.[1] By contrast, St. George-the-Martyr's districts registered densities of 269, 181 and 212 persons per acre in 1892 - figures only partly explained by the number of block buildings in the parish, at a time when the average density for the capital was 57.1 persons per acre.[2]

In all three parishes, the worst patches of poverty were defined, and appear as constant sources of anxiety and trouble to the sanitary departments. Thus, St. George, which had the reputation of being the

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1. H.J. Dyos, op. cit., p. 57

2. Med. Off. Ann. Rep. St. George, 1892, p. 13

the filthiest parish in London, and which Rendle stigmatised as "a very focus of putrid complaints",[1] retained throughout the period four particularly troublesome areas: about the Parish Church, Mint Street, the Old Kent Road, and Green Street. St. George's New Town, built in the early 1850s, badly drained, much neglected, and a persistent haunt of fever, was drained, paved and sewered in 1862,[2] but such improvement was rare. St. Mary's sanitary department seems to have tacitly acknowledged most of the parish to be well below desirable standards, but the areas to the east of the Walworth Road, immediately north and south of Newington Butts, and about the Vestry's depot, perhaps merited the most constant attention. Camberwell was particularly concerned by the Melon Ground, between the Canal and the Old Kent Road; the Hollington Street area; Church Street Camberwell, and associated courts; Lower Park Road and Park Street, Southampton Street, Neate Street, Shard Square and Thompson's Avenue.

The delineation of trouble spots was but one concern of the sanitary departments. In all three parishes, the work of the medical officers was carried out against a background of declining parochial social and economic status. In St. George's this was early indicated by the arrival of the Irish; in Newington by the emigration of the middle classes. The predicament of this parish is revealed by the dismay with which the Vestry greeted the 1856 County Rate Assessments, which, unlike those of 1847, included empty houses:

> ... the condition of the Parish holds out no hope that the Rateable value of £15,000 for empty houses returned to the Justices will at all diminish, but that on the contrary from the large number of houses of an inferior character, which have recently been erected, there is great reason to apprehend, a still further decrease of the rateable value from this source... Private houses in this Parish are greatly declining in value, and must continue to do so in consequence of the large increase of Buildings of a better character within a few miles from London, and the close proximity of poor houses recently erected to those of a better class.[3]

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1. Med. Off. Third Quarterly Report, St. George, 1858, p. 3.
2. Med. Off. Ann. Rep. St. George, 1864-65, p. 19
3. Newington Vestry Minutes, 16th January, 1856.

These forebodings of declining social and economic status were not altogether borne out by the subsequent financial history of the parish - the rateable value of the parish per head of population remained more or less at the 1856 level until the end of the century, doubling roughly from a total of £190,000 in 1851 to £494,695 in 1896. .

Camberwell also, despite the exclusiveness of its Dulwich properties, experienced declining values subsequent on changing social structure. In 1855, the rateable value of the parish stood at £3.15s.5d. per head of population; by 1900 it was £4.9s.7d. The average for London had meanwhile increased from £4.1s 9d. in 1856 to £8.3s.8d in 1900.[1] In these circumstances, the Vestry's avowed ambition to keep somewhat ahead of the rest of London in "desirable and beneficial improvements" was something of a trouble. The Chairman bitterly noted in 1900 that the progress of the parish had been "cheated, hindered and repressed by the excessive growth of pauperism".[2] In 1851, the proportion of paupers to population was 20 per 1,000, relatively low for that date; by 1896 it was 35 per 1,000,"excessively high" for a London parish. In St. George's also, although the increase in rateable value over the period was high relative to the almost static population, the expense of parish improvements brought financial stringency, particularly with the upsurge in activity of the 1890's. At this period it was recorded that the net income from the rates was down by nearly £4,000 per annum,[3] and was expected to decrease further "... in view of the fact that our Medical Officer assures us that a great deal of insanitary property remains which ought to be dealt with in the immediate future".[4]

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1. Camberwell Vestry Mins. 24th October, 1900.
2. Ibid.
3. Due to the demolition of insanitary property.
4. Vestry Clerk of St. George to Vestry Clerk of Newington, 16th January, 1896; Documents on Housing; S.C. 2/Box I.

The history of South London at this period was extensively shaped by the "merry process of squeezing out the poor",[1] which was the result of popular social policy, economic progress and increasing social self-consciousness in the latter half of the nineteenth century. The destruction of the rookeries of central London, the building of the railways, and the closing of class ranks in wealthy areas such as Mayfair and Paddington, pushed the poor and labouring classes outwards from the old inhabited centres, and the middling and respectable classes yet further out beyond these. It was a process not confined to the centre of London: St. George-the-Martyr had learned the lesson of demolition as a remedy for insanitary property by the 1880's, pushing the poor yet further southwards. In this context, the work of the medical officers of London, charged with the responsibility of improving sanitary conditions and disease rates, was not easy. The undercurrent of changing patterns of population distribution distorted priorities and complicated administrative procedures. The sorting out of the social problems created by urban development fell largely upon the medical officers' shoulders.

The medical officers appointed under the 1855 Act were, on the whole, men of ability and principle. The three parishes here examined were served by a total of eight officers in the period 1856-1900. The Vestry of St. George, notorious as one of the slackest in London, was responsible for four of these (Table 3). William Rendle, who had for 20 years previous to his appointment practised in the parish and performed the duties of poor law medical officer, resigned because of the incurable lethargy of the Vestry in sanitary matters. Henry Bateson had also been a candidate in 1855, but his

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1. Camberwell Vestry Minutes, 24th October, 1900.

eloquent and superficial reports, and his apparent amity with the Vestry lead to the suspicion that his conscientiousnesss did not match Rendle's. Thomas Waterworth, appointed on Bateson's death in 1869, was certainly an officer of poor calibre: his reports are meagre, and his appointment was not renewed following re-assessment in 1892. Frederick Waldo, appointed in 1892, was an energetic representative of the new school of specially trained sanitarians, and during these last years sounds of battle similar to those occurring during Rendle's officership can be discerned. In Newington, Iliff and Millson were both capable men, practitioners of the parish; in Camberwell, John Syer Bristowe and Francis Stevens presented the most thorough reports of the whole group. Alone of the six pre-1890 officers, Bristowe's reports show an awareness of current medical research, and an interest in aspects of medicine, both social and curative, beyond the level of the parish pump. A man of some standing in his profession, he was long associated with St. Thomas' Hospital, where he eventually held the post of physician, and was besides physician to Westminster School and the Commercial Union Insurance Company. This contact with the more formal medical world perhaps accounts for his broader knowledge of medicine, and for the wider perspective on preventive medicine which his reports display.

Bristowe's assistant from 1893, and his successor in 1895, Francis Stevens, as clearly represents the new generation of trained sanitarians as Bristowe does the pioneers. Bristowe's concern with environmental health hazards, for instance, gives way in Stevens' reports to a greater interest in geography and the social causes of disease. This changing emphasis reveals the maturing of the public

health idea, but also the extent to which, in Camberwell, over thirty years of effort had improved environmental conditions in the parish. By the 1890s, work on satisfactory drainage, sewerage and water supplies was so far advanced from the position of 1856, in spite of the vast building developments since that date, as to permit the medical officer. a steadier concentration on the more specific aspects of disease prevention. This was not so in Newington and St. George. Here Waldo's anger and Millson's exasperation as they struggled to make their employers aware of the importance of improved methods, while still faced with widespread insanitary conditions which would hamper specific concentration on disease control by bacteriological methods, are indicative of the extent to which these parishes were delayed in their sanitary improvement by the circumstances of their history, and their social and economic condition.

CHAPTER I

A BACKGROUND FOR PREVENTIVE MEDICINE

1: Responses to Illness and Death.

Illness and death have at no time in the past been as far removed from the everyday life of every man as they are at present. In Victorian England, these two occurrences were as much a part of human experience as in the sixteenth or the tenth century. Changes in society, however, had brought about a change in attitude which distinguished industrial man from his pre-industrial fathers, and even from his rural contemporaries. The greater concentration of population in industrial cities, and increasing class segregation within these, brought, as an ever larger proportion of people came closer to the fundamental uncertainties of life, a broader indifference to it. "There is a great deal of carelessness touching human life", observed William Rendle, "and a great want of common sense or serious thought in the preserving of it: much is left to chance: there is a fatalism, or a stolid indifference upon the matter, prevading English society".[1] In London at least, the competition for existence was hard, as Mayhew's investigations show, and the vast anonymity of life in the capital added to the distresses of many. While the greater vulnerability of urban man to disease and malnutrition made life more precarious, the pressures of urban industrial life disrupted the established responses to illness and death, and resulted in their fragmentation in a relatively hostile new environment. Removed from the pattern of rural life, and with the family unit under economic pressure, disease, accident and old age came to have a more sinister significance for working people within the Victorian city.

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1. Med. Off. Ann. Rep. St. George, 1857, Supplement, p. 2-3.

The insensitivity of the public conscience towards general public health and welfare was watched with acute anxiety by those concerned with the health of the nation. In some quarters, the awareness that "the great epochs of history are marked out by pestilences" made those conscious of living in a period of remarkable achievement uneasy:

> With the increasing density of population, the intimate connexions between England and every unhealthy climate of the world, and the slow progress of sanitary improvement, we cannot consider ourselves absolutely safe from an eruption of some epidemics, which, like their predecessors, may open a new chapter not only of medical but of national history.[1]

Society at large was slow to take warning, however. Increasing urban class segregation, noticeable already by the mid-century, left socially aware observers lamenting. Isolation enhanced the indifference of the wealthy and educated classes, and contributed to the disorientation of the urban working classes.

> And the poor, driven as they are from the richer districts into poor neighbourhoods, can scarcely help themselves; they lose at last all healthy communication with richer or better neighbours, and all taste for pure air and healthy pursuits; they pack close, they descend a little, often a great deal, towards the lower animals; and so live neither for this world nor the next.[2]

Against this background, a complex variety of illness-death responses emerged. On the one hand, among the upper classes, the rising social status of the medical man indicated a growing use of, and appreciation of, private medical services. The emergence of the public health idea had, however, brought an increased consciousness of <u>categories</u> of disease, in particular of those diseases termed "zymotic" (which included the infectious and diseases such as typhoid and typhus), which because of the miasmatic theory were associated

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1. PP 1860 xxix, p. 566.

2. Med. Off. Ann. Rep. St. George, 1857; Supplement, p. 3.

with dirt and poverty. While the occurrence of such diseases in well-to-do families might well be ascribed to adverse miasmic conditions, some form of social stigma seems nevertheless to have become attached to these diseases.[1] The high rate of child mortality also bred indifference to children's illnesses, and may have meant less immediate provision of medical attention for children. Among the poorer classes, the expense of medical attention frequently inhibited its use, not simply among the poor, but also among "white-collar" and working men in good employment. The greater concentration of population in cities meant greater opportunities of infection, and magnified - in loss of earnings, expense of treatment, and the difficulties of resuming position - the social consequences of such illnesses. Particularly among the industrious classes, a long illness, or the death of a breadwinner, might bring a family tumbling into poverty. The policies of the Poor Law authorities, which created difficulty in obtaining medical relief, and associated the acceptance of relief with social humiliation,[2] meant that among these classes illness was supported as long as possible, both to delay loss of earnings and to stave off the necessity of loss of independence by accepting workhouse relief.

The automatic response to illness in any society is not to send for medical advice: most illnesses begin with an indefinable sensation of <u>disease</u> on the part of the sufferer, which only gradually develops - over a period of days, weeks or even years - into actual illness. The first attempts at remedy come naturally from family knowledge, and from

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1. Vestry Ann. Rep. Newington, 1891-92, p. 79.

2. See especially, Ruth Hodgkinson, <u>The Origins of the National Health Service</u> (1969), p. 324

medicines readily available in the home, or at the local chemist. This response held as true for the nineteenth century, as it does today. It was, perhaps, even truer. The limitations of curative medicine and the scarceness of doctors and medical services had for centuries bred not only self-reliance with regard to the treatment of illness, but also a wider acceptance of its manifestation than exists today. For the medical officers, these factors existed as dense barriers to the execution of their duty in controlling disease. William Iliff, for instance, was professionally dismayed time and again: "Washing, mangling, needlework go on as usual in many an infected home, children, aye adults also, the sick and the sound, mix indiscriminately".[1] The developmental state of sanitary science at this period was not, however, well calculated to lighten the duties of the officers called on to put it into teaching practice, and the level of unresponsiveness to sanitary knowledge long remained high. Twenty years after Edwin Chadwick's "Sanitary Report" became the best-selling Blue Book of the period, Henry Bateson was complaining that even among the educated and higher classes the principles of health and hygiene were only partially understood, and still less observed, while "among the ignorant and the lower classes", they were not observed at all, because they were not even partially understood.[2]

The habits and practices of generations were not easily changed. The widespread existence of "many states of ill health which make life irksome ... but which do not necessarily result in death",[3] was a very

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1. Med. Off. Ann. Rep. Newington 1871-72, p. 112

2. Med. Off. Ann. Rep. St. George, 1865-66, p. 14.

3. Med. Off. Ann. Rep. Camberwell, 1860-61, p. 14.

old state of affairs, and was generally accepted. Normal life was pursued as long as possible. Symptoms of serious illness were frequently ignored as minor complaints, until such carelessness was no longer possible: the schoolboy memory from early twentieth century Salford, of the tuberculous young teacher anxiously examining his handkerchief for signs of haemorrhage,[1] shows that this attitude long persisted. The common procedure was never to consult, or pay, a medical man until symptoms became alarming, " until consumption has set in, diphtheria is developed in the throat, small-pox is furrowing the skin, fever is racking the brain, and then there is the midnight rush to the great blue and red lights burning in the streets ...".[2] From the medical officers' point of view, a fundamental difficulty was that people continued to judge the seriousness of the disease, and its infectiousness, by the severity of the symptoms. In the 1890's, Francis Stevens was the dismayed recipient of frequent confessions from the friends of undoubted scarlet fever victims, that they did not think the rash could really be scarlet fever, as the child was not ill.[3]

Against this background of established responses came the complications of social habit and economic pressure. The general carelessness towards life, of which Rendle complained, was a phenomenon in English society affecting the relations between class and class, between the different social groups, communities, or units which made up society as a whole. That the poor help the poor was already a recognised pattern in the nineteenth century:[4] the study of Henry Mayhew reveals that there

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1. Robert Roberts, The Classic Slum (Pelican edn., 1975), p. 134.
2. PP. 1860 xxix, p. 590.
3. Med. Off. Ann. Rep. Camberwell, 1898-99, p. 12.
4. Dickens, Bleak House, p. 109.

was equally much callousness within this class. Charity between the poor was sometimes spontaneous, more often contained within a specific community, whether a community of place, occupation or kinship. The costermongers, for instance, of whom there were many in the Southwark parishes and Lambeth, were a tightly knit group, with their own culture and customs, living in particular streets and maintaining a strongly independent way of life. If a coster fell ill, and had to be taken to hospital, the members of his immediate community rallied round, visiting, bringing gifts and organising raffles to provide funds for the invalid: the latter a common practice amongother working class groups.[1]

The smallest social unit, beyond the individual, in English society is the family, and it is within the individual's immediate family that sickness has the greatest importance. The family's reaction to illness varied according to the nature of the illness, the family's social standing and nearest relationships, and according to which member of the family was afflicted. Among the educated and wealthy classes, the emphasis on family privacy was generally intensified by the appearance of disease or sickness among the adult members. As children were generally under the care of nurses, forming almost a separate establishment within many houses, the effect of a child's illness on family activity depended on the nature of that illness. Passing down the social scale,through the classes with claims to respectability, that is, where the nuclear family maintained a distance between itself and even its closest relations, living separate lives in different and often distant houses, hedged about by the formalities of visiting cards and calling hours, to the industrious classes and their like, the pattern of family response varied.

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1. Mayhew, Life and Labour (Dover ed., 1968), Vol. I, pp. 15, 58.

Among working people, the realities of the extended family survived, and were often expanded to include as with the costers, whole small communities bound by ties of occupation or dwelling-place, within which the illness of a member became a matter of group concern. Even among the poorest of the poor, that large, shifting population whose passage through London was influenced by the availability of work, cheap lodgings and cheaper food or credit, the occurrence of sickness raised a protective group reaction: flight from the locality where the illness developed.[1]

Reaction to specific manifestations of disease - as against generalised illness or accident - was various. As we have seen, much depended upon how ill the patient actually felt. The general prevalence of the miasmatic theory of disease at all levels of society (even from the poorest areas came complaints that fouled drainage had caused diseases such as diphtheria[2]), combined with this idea to produce quite frequent instances of indifference to disease which staggered the preventive officers. Men walked unhindered in the streets " with the small-pox full upon them" [3] at least until the Metropolitan Asylums Board began to establish control over the disease in the late 1870's. Hannah Prutten, spinster, suffering from smallpox, walked from her home in Wyndham Road, North Camberwell, to Vauxhall Station, and from there went by train to Kingston.[4]. William Iliff was outraged by kinks in working class sensibility which could permit the exhibition, as

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1. SCALDI, pp. 1881, VII, q. 630.

2. Sewers and Sanitary Committee Mins. Camberwell, 25th October, 1864; 7th October, 1873.

3. Med. Off. Ann. Rep. St. George, 1871-72, p. 14.

4. Sewers and Sanitary Committee Minutes, Camberwell, 16th April, 1878.

a sight, of the corpse of a smallpox patient,[1] while in the 1890's Frederick Waldo noted some 40 occupations of persons who, to his knowledge, resided in disease-infected premises, yet continued their employment elsewhere.[2] Reactions, even to so hideously disfiguring a disease as smallpox, were not, at this period, predictable; much depended on circumstance.

The protective structures which the occurrence of illness, or disease, so often raised between the family or community unit and the outside world nevertheless ranked as high as ignorance and indifference among the obstacles to preventive medicine.[3] The intrusion of the medical practitioner was, in the normal course of events, invited by the afflicted household: the intrusion of an uninvited official seemed an unwarrantable transgression of privacy. This attitude was common to all classes of society, although more "purely" held among the upper ranks than among the labouring classes, where attention was often welcome and only bitterly resented when removal from the home - that is, the removal of the patient to hospital - was contemplated. In the poor parish of St. George, the absence of recorded cases of resistance to official intrusion seems to confirm the general impression that the MOs between 1858 and 1891 were not of the most thorough. From Newington and Camberwell, however, both of which contained more (Camberwell many more) inhabitants from the clerkly respectable classes upwards, come the impression that such resentment of intrusion was very general. In 1892, Bristowe remarked on the satisfactory way in which much sanitary work had been accomplished in the last year, with singularly little friction

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1. Med. Off. Ann. Rep. Newington, 1871-72, p. 112-113.
2. Med. Off. Ann. Rep. St. George, 1892, p. 37.
3. J. Amos, Nine Years in Kent Street, (1870), p. 33.

considering how much such work was apt to irritate and offend.[1] Offence and friction were closely associated with disease cases. George Millson had to deal with a smallpox outbreak which affected three houses in Newington. The Surrey Gardens Estate was a respectable address, and here, " in a roomy, airy house" the officers were wilfully misled at every turn, and their efforts to check the spread of the disease thwarted.[2] In East Street, on the unrespectable side of the Walworth Road, nine cases of the disease occurred among the four families living at No. 241. Here also, information had to be obtained piecemeal, with great difficulty, from inmates who offered no help to the attempt to check the progress of the disease.[3]

The sense of intrusion was increased when the question of removal to hospital occurred. The M.O. represented the intrusion of the Vestry, and through the Vestry of the State, into the home. His duty was not to provide succour and comfort but to record the facts of the case, inquire into the movements of the family, request restriction of movement, and sometimes the desecration of the home by the process of disinfection. The intended removal of the patient from the immediate care of his relatives and friends, and the implication of their inadequacy for the task of nursing, added insult to injury. Further, while hospital removal to the layman implied the seriousness of the case, it also promised further disruption of family custom if the patient died;[4] hospital patients were not returned to their families for burial. In these circumstances, the

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1. Med. Off. Ann. Rep. Camberwell, 1891-92, p. 211

2. Med. Off. Ann. Rep. Newington, 1884-85, p. 123.

3. Ibid., p. 125.

4. Una Maclean, Magical Medicine (Penguin, ed., 1974), p. 123.

the tact of the officials concerned might be crucial. Bristowe acknowledged that the personal influence which his inspectors possessed and exercised sent many cases to hospital from among the poor which would otherwise certainly have been detained at home, " to the danger of their fellow-tenants and of the neighbourhood" .[1]

In a considerable number of cases, however, tact was unavailing. Bristowe was on several occasions obliged to resort to magistrates orders, as for the removal of two children from their home to the Smallpox Hospital.[2] In the early 1880's there was a typhus epidemic in Camberwell which was not arrested for several weeks because of the victims' resistance to hospitalisation,[3] while Bristowe's account of one smallpox victim who refused to submit to removal reveals the grotesque situations which these officers encountered in the course of duty, and the desperate concern of afflicted groups to preserve the protective family structure:

> He refused to submit, and as his removal would have involved a prolonged struggle, and probably a free fight, between a man covered with pocks and his friends on the one side and two or three Vestry officials and policemen on the other, he had his way.[4]

Nevertheless, experience showed that time and anxiety could break down family resistances. The East Street smallpox cases caused an epidemic which lasted through the autumn of 1884 into 1885. Millson found, however, that the scale of the epidemic had made the population more

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1. Med. Off. Ann. Rep. Camberwell, 1883-84, Report on Housing, p. 180.
2. Med. Off. Ann. Rep. Camberwell, 1877-78, p. 204.
3. Med. Off. Ann. Rep. Camberwell, 1883-84, Report on Housing, p. 175.
4. Ibid.

responsive to the preventive campaign. A general anxiety for treatment in the hospitals, rather than opposition, manifested itself among the friends and relations of the victims, and Millson's satisfaction in observing this suggests the rarity of the phenomenon.[1] Social factors inhibited prevention in other ways, as the passing of the Infectious Diseases Notification Act of 1889 was to show. The Act required the compulsory notification of cases of smallpox, scarlet fever, typhus and typhoid, among others, to the MOH by the medical attendant, parent or guardian. The Metropolitan Asylums Board subsequently sought to improve on this system by publishing lists of affected houses. For many families, this was unwelcome publicity. The Vestry Clerk of Newington indeed, registered a bitter complaint in his annual report.[2] Cases of both scarlet fever and chicken pox had occurred in his own home, and he seriously resented the indignity of the subsequent publication of these facts. The social humiliation involved in this procedure may have been an added motive for concealing cases from the authorities, whatever the exigencies of the law, during the first years of the operation of the Act.

In times of epidemic, the incurrence of a temporary stigma on a household visited by disease is less surprising. The reactions to cholera during the nineteenth century epidemics were predictably in the classic mould. More curiously, epidemic diseases such as smallpox, scarlet fever and diphtheria, which occurred with a consistency so great as to render them virtually endemic in urban populations, also provoked a panic reaction at times. In respect of smallpox, the probability of panic no doubt increased as the disease became rarer.

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1. Med. Off. Ann. Rep. Newington, 1885-86, p. 168.

2. Vestry Ann. Rep. Newington, 1891-92, pp. 77-79.

The alarm generated in St. George's by the scarlet fever epidemic of 1869 was, however, more surprising, as the disease had been noticeably present in the parish for a number of years. Bateson noted in 1869 that the mortality from the disease was the highest recorded, and it may be that a high mortality, when the mortality had been relatively lower in the four previous years (Table 4) created the panic. Despite all attempts to arrest the spread of the disease there was, Bateson recorded,

> ..... evoked a fear and a dread I have never previously witnessed in any other epidemic. Help when most urgently needed, could not be had. A house wherein was scarlet fever, needed no real cross upon the door to prevent communication. No one would come nigh.[1]

Panic must be placed in the context of the prevailing attitudes to illness as noted earlier. It seems probable that panics developed only in cases where a more virulent disease strain caused a greater agony in the closing, or crisis, stages of the disease. Smallpox victims who continued their normal pursuits, or whose illness did not disrupt their relatives in theirs, were probably suffering from a relatively mild attack. Panics arose where the symptoms were alarming and distressing, and most usually in a neighbourhood unaffected for some time previously. Such panics occurred in Newington in 1872 and 1884. The smallpox epidemic which began in the autumn of 1871 was severe - the worst of the century - and the manifestations of the disease were particularly horrifying, as many cases were haemorrhagic. The first wave of the epidemic was receding, when a bad case occurred in Green Street, Newington:[2]

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1. Med. Off. Ann. Rep. St. George, 1869-70, p. 37.

2. Vestry Ann. Rep., Newington, 1872-73, p. 116.

> The street was filled with the very poor, a large number of children playing about, no means of isolation, people going in an out of the house, friends and relatives prostrate with fear, a panic rapidly arising in the neighbourhood, in fact the patient all but left without aid, or if given it was regarded as useless, and therefore fitful, the patient clearly in a most dangerous state ...

The East Street cases in 1884 caused a similar situation. This outbreak originated with the mother of two children, who had nursed a child with smallpox in an adjoining parish. When her own children fell ill with the disease, she gave out that they had a severe cold, and it was not until the almost simultaneous death of both, accompanied by " the crowding round the open door of a troop of unvaccinated children to see a groaning, dying child" , that the truth was known, and a panic immediately ensued in the neighbourhood.[1]

Smallpox was undoubtedly a greater cause of panics than the other epidemic infectious diseases because of its peculiarly horrible manifestations, and because its increasing rarity enhanced its alarming properties. The removal of all known smallpox cases to the Metropolitan Asylums Board hospital ships from 1871 on, probably also contributed to the scare value of the disease. Although scarlet fever and diphtheria destroyed more lives than smallpox at this period, it was the latter which was most powerful in inspiring the public mind with "a salutary dread".[2] During the epidemic of 1871-72, great anxiety was aroused by the smallpox hospitals which the Metropolitan Asylums Board was establishing for the isolation and treatment of cases. When the new hospital at Stockwell was opened, in January, 1871, the immediate neighbourhood emptied: " ... the houses in the neighbourhood are quite deserted ... There was a perfect exodus of outside residents;

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1. Med. Off. Ann. Rep. Newington, 1884-85, p. 126.

2. P.P., 1865, xiv, p. 30.

pupils were withdrawn from the schools" ,[1] and trade was extensively disrupted.[2] A proposed smallpox hospital at Battersea was fiercely opposed by the local residents: it would keep visitors from the Park, and would damage the trading interests of York Road, now the principal shopping street in Battersea, and crowded nightly with working men and their wives.[3]

The fear of smallpox could, indeed,lead to quite inhuman behaviour in some cases. Among the servant-keeping classes, for instance, it was usual for a sick servant to be sent home to her own family until she had recovered her health.[4] Bristowe recorded two cases in Camberwell during the epidemic of 1881, in which fear of the disease led to over-delineation of the lines of convention. In both cases, a servant suffering from smallpox was refused re-admittance to her employer's home after the disease had been diagnosed (the servant attended a surgery, the doctor was not summoned). She was given her dirty linen, and ordered to return to her mother's house, which she did, by public transport, in one case by train, the other by tramcar.[5] Fear did not, however, seem to produce the reaction of flight in the nineteenth century, as it had done in the sixteenth century plague epidemics. There is no evidence, for instance, of an exodus of the middle-classes from Camberwell during the cholera epidemic of 1866, although there was a tavern keeper in Southwark who took an opportune seaside holiday, leaving his staff sniffing at the same spice-filled pomanders as their ancestors had resort to in time of plague.[6]

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1. S.L.P., 4th February, 1871.
2. Ibid., 24th June, 1871.
3. S.L.P., 11th March, 1871.
4. Med. Off. Ann. Rep. Camberwell, 1863-64, p. 30; Lancet, 27th July, 1872, p. 137.
5. Med. Off. Ann. Rep. Camberwell, 1881-82, p. 106.
6. S.L.P., 11th August, 1866.

Long established prejudices concerning health provided further complications to the preventive teaching of hygiene. Fresh air, especially night air, was considered dangerous inside the house, and every possible means was used to prevent its entry. This prejudice was common to all classes, Bateson indicated: the windows of the Vestry Hall were tightly closed at the very moment he was speaking.[1] The rule of custom was a cause of sanitary concern particularly in the event of death. The celebration of death did not become obsolete in English society until the twentieth century; in the nineteenth, it continued as an integral part of the social custom of all sections of society. The gathering of family and friends at death-bed and funeral was a mark of respect for the dead. The practice of "waking" the dead, although increasingly rarer, was still in use. During the 1883 cholera scare, the Vestry of St. George specifically forbade the waking of the dead,[2] and traces of this custom of watching over the dead between death and burial, occasionally accompanied by drinking and feasting can be found throughout the period. The customary post-burial collations, as celebrated, for instance, in H.G. Wells' The History of Mr. Polly,[3] were a survival of this custom. For hygienic reasons, and because of the risks of infection, sanitary authorities disapproved of this custom; indeed, in the case of a serious diphtheria outbreak in the narrow cul-de-sac of Cornbury Street, Waldo was certain that the frequent visiting of the patients by neighbours, and the special gatherings of women occasioned by funerals, were a prime cause of the epidemic.[4] Associated with the tradition of waking was also a reluctance

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1. St. George Vestry Mins., 23rd June, 1856: also M.V. Hughes, A London Child of the 1870's (OUP 1877), p. 97; RCHWC, pp. 1884-5, xxx, pp. 20,
2. St. George, Sanitary Committee Minutes, 25th August, 1883.
3. H.G. Wells, The History of Mr. Polly, (1910), pp. 102-113.
4. Med. Off. Ann. Rep. St. George, 1896, p. 34.

to relinquish the deceased for burial. In one case, the mother of a child dead of tuberculosis had kept the body in her room for nine days, and intended keeping it five days longer, although it had become so offensive that her relatives had placed onions about the room.[1]

The anciently established patterns of response to illness and death were, however, changing in the urban context. In London, the continual vast influx of country folk, without home, community or even friends, qualified the survival of patterns of community response within such groups as had adapted to town life or created their own community in the urban context. Although this loosening of the framework of group protection within which village society had cared for its members often resulted in the greater isolation and neglect of individuals during serious illness, it did not diminish the spread of infection because the economic pressures on the individual to continue earning as long as possible were even stronger. To reduce the incidence of preventable disease and reduce the possibilities of hardship for urban man was the principal function of the medical officers of health; that they were hampered in their intention by the lingering of old customs and traditions is a reflection not simply of the preference of man for the security of the familiar, but also of the radical nature of the very basic measures of disease control they were attempting to introduce, in the context of nineteenth century values.

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1. Med. Off. Ann. Rep. Newington, 1872-73, p. 118; also St. George, Vestry Minutes, 23rd June, 1856.

2. Prevention and Cure: The Application of Medical Knowledge.

The state of medical knowledge during the nineteenth century is generally admitted to have been fragmentary. In the first sixty years or so, the medical profession was confused by conflicting theories of disease, and beset by ignorance of the fundamental biological bases of human life. In the latter decades, gathering confidence and effectiveness followed the discoveries of Pasteur, Koch, Lister and others. The recognition of preventive medicine as of equal importance with clinical, was one of the great advances made at this period. On this the development of bacteriology arose, and from it derived the impetus which eventually resulted, in England, in the evolution of a state medical programme. Early attempts at prevention were, nevertheless, hampered by greater or less ignorance as to the causes and spread of particular diseases, while the variety of theories as to the origins and cause of disease did not always make for cordial cooperation in preventive measures. The medical officers of health, burdened with the responsibility of diminishing disease in these circumstances, saw themselves as contributors in a wider sense to medical knowledge. Although the strength of the influence of the miasmatic teachings is repeatedly observable in their writings, the determination to surmount all doubts as to the origins and causes of disease often rises above the doubtful realms of theory. William Rendle hoped that by trying to ascertain all homes where disease existed, the MOs would contribute substantially to both disease prevention and the stilling of debate:[1]

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1. Med. Off. Half-Yearly Rep. St. George, July, 1856, p. 6.

> Then, the proper census of courts, the circumstances favourable or otherwise, and the actual death-rate, known, we shall have data out of which will grow sound improvement, and a more correct knowledge of disease and its causes. And thus, that highest form of medicine," Preventive Medicine", will have a more systematic and solid foundation than hitherto.

The debate over the relative importance of curative and preventive medicine occupies an obscure corner in nineteenth century medical history. Yet it was a subject which generated some heat, particularly among those concerned with prevention. Rendle's conviction that preventive medicine was the highest form of medicine was supported by many of his colleagues and their associates at this period. As early as 1837, the British Medical Association had resolved politically to promote " preventive medicine" ,[1] and in the 1840's the Epidemiological Society was already playing a significant role as a pressure group in the vaccination question. The medical profession as a whole, however, remained largely unconcerned with prevention. The "clear separation" which developed between the duties of the health officer and the practice of curative medicine,[2] began long before the Medical Council began to provide for instruction in state medicine in the 1870's: it began with the appointment of the London medical officers in 1855-56. The formation of the Metropolitan Association of Medical Officers of Health in April 1856, is an early indication of the extent to which these men felt the interests of preventive medicine to be distinct from those of the medical profession in general. The very nature of their duties was such as to make them aware of a whole range of medical responsibilities beyond the traditional one of doctor to patient, and

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1. Roy Macleod, " The Anatomy of State Medicine", in F.N.L. Poynter, ed. Medicine and Science in the 1860's, (1968), p. 210.

2. ibid.

to make them impatient of the emphasis placed on curative medicine by the public and the profession in general. This awareness extended to others concerned with public health: the Registrar-General remarked that the work of the medical officers of health was most important in preventing sickness, yet the 2,000 medical men in the London area were chiefly occupied in treating disease; the art of preventing disease was not cultivated.[1]

Even after the establishment of courses in state medicine and public health at Dublin, King's College, London, and Cambridge in 1870, a sense of grievance persisted among preventive men, resting on public attitudes. Henry Bateson, whose miasmatist convictions were supplemented by a belief in "pure living" as a defence against disease, was explicit in his view that the " mighty obstruction" to the furtherance of preventive knowledge was the fear of expense. " Pounds are willingly paid for cure" , he exclaimed bitterly, " where ha'pence would be grudged to prevent" .[2] He was angry at the public attention paid to hospitals and curative medicine at the expense, in money, reputation and gratitude, of preventive medicine, which " takes a far higher and nobler stand, and may be likened to the still small voice ...." . At a time when many of the preventable disease cases were subject to hospital treatment, such an attitude was not unjustified. Until the end of the century, preventive medicine continued to be hampered, financially and otherwise, by the indifference of the general public. The vestries, for instance, were

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1. Twenty-first Annual Report of the Registrar-General, PP. 1860, xxix, p. 590.

2. Med. Off. Ann. Rep. St. George, 1873-74, p. 21.

3. Ibid., p. 17.

willing to spend money on such obvious and well-established sanitary remedies as demolition and sewerage, but the question of allocating the M.O.H. a room for bacteriological examinations to determine the presence of disease met with doubt and evasion.[1]

The frustration which sanitary administrators and reformers felt was increased by their conviction of the immense good that could be brought about by more efficient disease control, were the public more understanding, and the frontiers of knowledge a little further advanced.

" We have as yet, little knowledge of the power we can exercise over the prevention of disease ..." recorded Bateson,[2]

> Some diseases we can create; most we can propagate and send on their errand of misery and destruction. Neither small-pox, nor measles, nor scarlet fever can we start as far as we know de novo, but we can by carelessness and recklessness spread them to an untold extent. Disease is not an accident ... All is order and harmony, and governed by laws as rigid as the ebb and flow of the tide, the return of day and night, and the change of the seasons.

The belief in "order and harmony" and the regulation of all natural phenomena by rigid laws, the urgent desire to prove that disease was subject to these laws, is a characteristic reflection of the Victorian mentality at this period. It was a conviction which narrowed the vision of many a sanitary reformer in the form of miasmatist or contingent contagionist views, but which was closely allied to contemporary developments in both religious belief and in biological and geological knowledge. Industrialisation, the growth of towns, the transport revolution, rapidly advancing frontiers of scientific knowledge which threw so many traditional conceptions into doubt, all combined to

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1. Public Health and Sewers Committee Mins., Newington, 27th November, 1899.
2. Med. Off. Ann. Rep. St. George, 1873-74, p. 21

to enhance the attraction of systems; of regular, immutable laws which, once the key to them had been discovered, would permit the satisfactory adjustment of human life to their rhythm.

The miasmatic theory of disease, so widely publicised by Edwin Chadwick, offered one of the simplest solutions to the problem of disease prevention. The association of disease with offensive odours and accumulations was an obvious one, and, in theory at least, the removal of these environmental causes was straightforward. The importance of this theory for the individual naturally varied, but seems particularly strong in the generation which received its medical education between 1840 and 1860. Bristowe, Iliff and Bateson all belong in this category and illustrate various positions. Iliff, , for instance, recognised the importance of the basic principles of hygiene, and based his preventive strategy on them. He was by no means a convinced miasmatist. Although he refers to environmental conditions as the cause of disease,[1] there is no evidence to show his belief in any direct casual connection. Iliff had, indeed, a deep suspicion of all theories of disease which, as he remarked at the time when Koch's isolation of the tubercle and cholera bacilli had made the germ theory topical, " are continually arising, and require very complete and thorough investigation before they are worthy of general acceptance".[2] His own professional guidelines were facts, " ... which are stubborn things, ... and clearly demonstrate the necessity for a continual supervision of the dwellings of the poor (more especially), and for as constant an attack on all removable sanitary conditions".[3]

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1. Med. Off. Ann. Rep., Newington, 1868-69, p. 62-63.
2. Ibid., 1884-85, p. 133.
3. Med. Off. Ann. Rep., Newington, 1884-85, p. 133

Henry Bateson represents the opposite phenomenon, the enthusiastic theorist. The general alignment of his position was akin to that of hardened miasmatists such as the distinguished Benjamin Ward Richardson, but the morbid poetry of many of his reports casts doubtful light on his critical intelligence and on the nature of his approach to his work. Take, for instance, his description of the terrible storms of 1859, which caused much damage and distress, but which,[1]

> with their " besom of brisk pinions" , sweep out of every road and street, court and alley, the fetid and stagnant miasm brooding there, whose progeny is disease and death. And who may say to what extent disease has been prevented! and who may count up the number of lives saved by their very violence!

Somewhat later, Bateson seems to have abandoned lurking miasms for " ever floating clouds of germ poison".[2] As these travelled in the atmosphere in waves, epidemic and zymotic diseases were not entirely preventable. When the waves were passing, the best preventives were " a generous diet, composure of mind, and avoidance of excess in mind or body".[3] The tendency to some diseases was,however, hereditary, and vulnerable persons must take particular precautions, by the selection of suitable occupations, choice of healthy residences, well selected marriages, and the strict observance of hygienic rules.[4]

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1. Med. Off. Ann. Rep., St. George, 1856-60, p. 18
2. Med. Off. Ann. Rep., St. George, 1873-74, p. 18
3. Ibid.
4. Med. Off. Ann Rep. St. George, 1872-73, p. 18-19.

The influence of the miasmatic theory on medical thinking was, not unexpectedly, strongest in the years before the positive advancement of the germ theory in the late 1870's. Until the 1880's at least, many different factors which were advertised as being important in the natural history of disease: soil type, temperature, hereditary factors, disease waves, alcohol, poverty, and others were all canvassed as salient influences, and some of these factors were indeed important, if not always in the way in which their nineteenth century proponents believed. According to one school of belief, epidemics " like new varieties of animals" sprang up in favourable circumstances, each in its own congenial climate.[1] Thus diphtheria originated in France, due above all to "the inscrutable cabinet, where the light of French refinement never comes", in which poisonous distillations were " hoarded up for years" to be inhaled, and engender disease in the throat.[2]

Yet whatever was postulated as the cause of disease for those hopefuls like Bateson who pinned their faith in systems, the maintainance of high sanitary standards stood as the guarantee of health. The simplicity and promise of this system gave it great staying power; well after the great advances in knowledge of the 1880's lay sanitarians such as Chadwick and Nightingale, and such eminent medical men as Richardson, maintained their environmental beliefs. Richardson's ideal city, Hygeia, represents the highest flowering of these hopes, a city in which, because of its ideal sanitary construction, the death-rate is no more than 8 per thousand in the first generation of habitation.[3]

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1. Twenty-first Annual Report of the Registrar-General PP. 1860, xxix, p. 566.

2. Ibid.

3. B.W. Richardson, Hygeia, A City of Health (1876), p. 44.

The intricacies of disease theory complicated the development of practical epidemiology in several ways, delaying acceptance of the germ theory, and of the preventive measures based on it. The late emergence of the preventive idea, combined with a superfluity of theories of disease causation, meant that the men first employed in prevention were simply trained in curative medicine. The practical adoption of bacteriological discoveries often depended on the willingness of this pioneer generation to accept such discoveries. The reactions of Iliff and Bateson, for instance, were largely negative. The case of Bristowe is more complex. In medical education and standing, Bristowe was of considerably higher calibre than his Southwark contemporaries (Table 3), and his attitude toward scientific advance shows a greater flexibility and professionalism. While avoiding the subject of disease causation (except in the case of cholera) his neat descriptions of the clinical symptoms of disease are unique among the reports of the five pioneer officers. The exact assessment of Bristowe's theoretical position is not easy, however. His use of the terms "cholera poison",[1] and "true typhus",[2] and his recognition of the infectious nature of diseases such as diphtheria,[3] small-pox and scarlet fever,[4] indicate that he was familiar with the work of John Snow and William Budd, and therefore a progressive. He was also aware that diseases could not be confined within a blanket system of causation. Thus, the unusual prevalence of diarrhoea in 1865 was due to the heat, and not to the presence of the true choleraic poison,[5] while typhoid was " little or not at all catching, and is developed almost solely as a direct

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1. W. Luckin, " Cholera in London, 1866" , Medical History, 21, 1977, p. 54
2. Med. Off. Ann. Rep. Camberwell, 1857-58, pp. 30-31
3. Med. Off. Ann. Rep. Camberwell, 1858-59, pp. 25-26.
4. Med. Off. Ann. Rep. Camberwell, 1857-58, p. 29
5. Med. Off. Ann. Rep. Camberwell, 1865, p. 25.

consequence of bad drainage, filth, over-crowding, and other like conditions". [1] In respect of other diseases, older ideas and moral influences were also manifest: tuberculosis was " due to a peculiar unhealthy form of constitution, in which there is a tendency to the deposition in various organs of a substance which rapidly breaks down and ulcerates, and thus destroys the healthy tissues of the body and ultimately causes death". It was a hereditary tendency, also associated with a dissipated cause of life.[2]

The tenor of Bristowe's approach to disease theory is perhaps best illustrated in relation to cholera. Although he was among those who eagerly accepted Snow's findings on the mode of transmission of cholera, doubt as to the cause of the disease remained. Following Snow, Bristowe acknowledged that cholera was not " like typhus and many other forms of infectious diseases, conveyed by the atmosphere and inhaled into the lungs, but is conveyed by the food and taken into the stomach" .[3] Unlike Iliff and Bateson, Bristowe followed current experiments on cholera, and notified his vestry of progress in this direction. During the alarm of 1883, when cholera was epidemic in Egypt, and the presence of British troops there, and the positioning of trade routes, led to serious fears of infection, Bristowe issued a memorandum on cholera in which he described the experiments of John Burdon Sanderson confirming that the cholera " poison" was contained in the cholera stools (a proposition first put by Snow) and confirmed his own belief in cholera as " an organised contagium" .[4]

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1. Med. Off. Ann. Rep. Camberwell, 1857-58, p. 31.

2. Med. Off. Ann. Rep. Camberwell, 1857-58, p. 29.

3. Med. Off. Ann. Rep. Camberwell, 1866-67, p. 102.

4. Med. Off. Ann. Rep. Camberwell, 1883-84, Memorandum on Cholera, p. 201-2.

Bristowe's reactions to Koch's isolation of the cholera vibrio in 1883 reveal the limits of his flexibility, and the caution with which many highly respected medical men received the discoveries of the bacteriologists. Bristowe was by no means convinced that the comma bacillus had been satisfactorily proved to be the true cause of Asiatic cholera. Neither did he feel - with a true surgeon's prejudice - that the medical profession was bound to accept the opinions of the bacteriologists as to whether any suspected case was cholera or not. Neither the inoculation of the bacillus into animals, nor the consumption of large quantities of it by doctors and men of science had been productive of such results as to convince the sceptical that the bacillus was guilty.[1] Belief in contagion was not necessarily allied to the germ theory: the isolation of the tubercle bacillus in 1882, and that of diphtheria in 1884, passed unnoticed in Bristowe's reports, despite the fact that the former remained the single largest cause of death in Camberwell, while mortality from the latter was rapidly increasing in the parish at this period.

Bristowe's reticence on the subject of contemporary bacteriological discoveries should, however, be placed in a broader context. The advance of bacteriological knowledge in the later nineteenth century was rapid, but the application of such knowledge to preventive policy was not really practically possible until the 1890's. The translation process was complicated by a variety of factors. Advances in pure bacteriology - the isolation of specific agents of disease for instance - did not immediately produce similar advances in the related field of immunity. In the case of diphtheria, the first disease for which remedial

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1. Camberwell Vestry Minutes, 12th September, 1873.

measures were produced as a result of nineteenth century advances, the isolation of the bacillus in 1883-4 (first by Klebs, 1883, then by Loeffler, 1884) led to the discovery of diphtheria anti-toxin by Koch's pupils in 1890. The first human subject was treated with anti-toxin on Christmas night, 1891, and the anti-diphtheritic serum was placed on the market in 1892. It came generally into use for treatment about 1895, and within a decade case-mortality had fallen to less than half its former level.[1] It was not, therefore, before 1895 that the serum was likely to have impinged upon the M.O.H.'s consciousness as a major contribution to public health, and neither Millson nor Waldo mention anti-toxin before 1896. The bacteriological examination of tuberculosis and diphtheria patients for confirmation of the disease had, however, been possible for over a decade as, for instance, Bristowe noted in connexion with cholera.[2] Bacteriological examinations were not, apparently, generally introduced until later: in Camberwell in 1898 (suggested by Stevens in July 1897),[3] and only suggested by Waldo in 1896.[4]

The realisation of the possiblities of bacteriological examination in the preventive campaign does not seem to have been made before the mid-1890's, at least in the parishes examined. The reluctance of the "pioneer" generation - who in some cases retained their posts until this decade - to accept the germ theory was one factor; the state of public receptivity to preventive measures another. The difficulties of enforcing general small-pox vaccination, and the outcry of the anti-

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1. Singer and Underwood, A Short History of Medicine (2nd ed., 1962). p. 434.
2. Med. Off. Ann. Rep., Camberwell, 1883-84, p. 201-2.
3. Camberwell Vestry Minutes, 12th January, 1898.
4. Med. Off. Ann. Rep. St. George, 1896, p. 34.

vaccinators against state medical tyranny, seem to have produced an added caution on the part of the medical officers at this period. Public hostility to preventive measures which carried no promise of remedy may have delayed the introduction of bacteriological examination in suspected diphtheria cases until anti-toxin offered a good chance of cure for those cases deemed positive. In the case of tuberculosis, the bacillus of which had been identified in 1882, deference to public opinion is well illustrated. It was not until the launching of the national anti-tuberculosis campaign, with the Prince of Wales as chairman and accompanied by much publicity, in 1898, that the most elementary precautions to be observed by tuberculosis sufferers were publicised by the medical officers. Even so, no general measures of control were introduced for over a decade, until the disease became notifiable in 1911.

Much of the credit for the gradual filtering through of new methods, and the application of new discoveries to practical prevention lies with the medical officers. The emphasis placed on hygiene and sanitation by those who received their training in the pre-1870 era, prepared the ground for the reception of the new ideas of their more specifically trained successors. Once the public mind became aware of the dangers of a particular disease, there would be a demand, however brief, for something to be done about it. This was perhaps no novelty in the case of wide-reaching epidemic diseases such as cholera, but was a new development in attitude towards diseases such as diphtheria, which affected chiefly young children, and tuberculosis, endemic and widely regarded as incurable for many centuries. The gradual softening of public defences against medical, or state medical, interference, combined with the assimilation of new ideas by the younger generation of medical officers opened the way for a more broadly based preventive strategy in

the 1890s. In the reports of Waldo and Stevens, particularly of the latter, who was not still wrestling with a fractious vestry and a filthy parish, the concern for environmental factors is supplemented by a greater interest in the geography and social causes of disease, in child welfare and diet, and in the specific application of knowledge by the issue of regulations and pamphlets concerning diphtheria, tuberculosis, and measles.

3. Laws and Institutions.

The frontiers of knowledge constituted only a part, and perhaps the less immediately significant part, of the context within which the M.O.H.s were required to execute the aims of preventive medicine. The laws which brought the health officers into existence and regulated their duties, and the institutions which performed functions complementary, but at times also conflicting, with their own, provided a more solid framework to the officers' activities. First among the laws and institutions which governed these activities was the Metropolis Local Management Act of 1855 (18 and 19 Vict. c. 120.), which compelled the appointment of medical officers of health by all the London local authorities, and constituted the Metropolitan Board of Works to supervise enterprises (such as main drainage) which concerned all London, and to regulate the work of the local authorities. The Act provided London with a system of health supervision unique in Europe at this period. Although guidelines for the work of the officers were laid down in the Act, to ascertain the existence of diseases, of nuisances causing them, and to point out the best way of checking or preventing

the spread of these diseases[1] - the details of their duty were contained, as for the rest of the country, in numerous enactments of varying practicality and effectiveness. It is well known that conflicting provisions and vague phrasing jeopardised the enforcement of many sanitary laws, but the extent to which carelessness on the part of the legislature could lead to difficulties and frustration for sanitary officers is perhaps less widely understood.

In delineating the scope of the MOHs' work a number of enactments were of particular importance. The Metropolis Local Management Act, and the Nuisances Removal Act, 1855, were the first two statutes to govern the MOHs' responsibilities for environmental improvement. The Torrens and Cross Acts (1868, 1875 and 1879) gave the vestries power, if they so wished, of compulsory purchase and demolition of insanitary property, and power of building for rehousing purposes.[2] The Public Health Acts of 1871, and particularly of 1891, were important in consolidating existing legislation. The single most important enactment of the period was the Sanitary Act 1866 (29 and 30 Vict. c. 90).

Although overshadowed in the MOHs' reports by the epidemics of cattle plague and cholera in that year, the 1866 Act extended the powers of the sanitary authorities in respect of the communicable diseases to provide a systematic framework for disease prevention such as existed in no previous legislation. In particular, the duty laid upon the nuisance authorities to inspect their districts with a view to finding and eliminating nuisances where they had formerly been obliged only to act upon complaint, extended the effectiveness of the sanitary officers widely. Almost without exception, the number of

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1. 18 and 19 Vict. c. 120, cxxxii.
2. A detailed account of these enactments can be found in A.S. Wohl, The Eternal Slum (1977), pp. 84-91, 98-105, 130-38.

nuisances dealt with annually in the London parishes increased enormously in the years following the Act.[1] Although, in common with most sanitary legislation before 1891, the effectiveness of the Act was qualified by confused and obscure wording,[2] it nevertheless, by empowering the MOHs to remove sick persons without " proper" lodging to hospital, and the vestries to erect disinfecting facilities and mortuaries, and to provide hospitals and ambulances (the two latter, in the vestries' view, soon to be adequately provided for by the Metropolitan Asylums' Board), established a framework for medically based disease prevention such as the earlier environmentalist acts did not. The 1891 Act, in consolidating and clarifying all previous sanitary legislation in the metropolitan context, did not alter the esentials of the preventive system as established in 1866.

Environment, nevertheless, continued a principal concern of the sanitary authorities. The Metropolis Local Management Act, the Nuisance Removal Act, and the 1866 Sanitary Act were variously invoked to deal with nuisances arising in the localities, the application of paricular provisions depending on the clauses which individual MOHs found easiest to use.[3] The enforcement of these laws became particularly complex at the point where the interests of public health and of private enterprise met in conflict, since the fundamental element of concern in all nineteenth century health legislation was the " nuisance" or injury to health. The proof of nuisance being created was pre-requisite for the operation of the law; and this matter of definition affected not only trades and industrial nuisances, but housing and drainage matters as well - the point at issue here, as so often in the sanitary history of

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1. Med. Off. Ann. Rep., Hackney, 1866, p. 6.
2. Med. Off. Ann. Rep., St. George, 1874-75, p. 2.
3. RCHWC, qq. 1613, 4513.

the period, was the right of the State to limit the activities of the individual for the private good. Such interference was productive of as much opposition as were the attempts at medical regulation. The grey areas of well-intentioned legislation may have sprung not simply from the complexities of the physical task in hand, but also in some degree from the reluctance of Parliament to define too closely provisions which might hamper the development and flow of domestic industry.

The failure to strike a specific balance between the needs and facilities of private enterprise and public health requirements significantly curtailed the effectiveness of health officials in controlling trades nuisances in particular. In Newington and St. George, where small industry was long established, the existence of such nuisances seems to have been more generally tolerated than in Camberwell. Complaints tended to come from outside these parishes, as for instance from " Lynx" who claimed to have been " half-suffocated" by the stench, as from a knacker's yard, as the train between Camberwell and Blackfriars passed the Borough Road: " as the train approaches the Borough-road, it is a signal for the passengers to hold their fingers to their noses, and to close the carriage windows to keep out the stench..." .[1] Understaffing of the sanitary departments, the fact that both parishes were extensively built up, and the long familiarity of the surrounding population with the offensive products of offensive trades, all contributed to this. In Camberwell, however, where industrial development was relatively recent, and where large areas of the parish remained free of industrial defilement, the Sanitary Department waged a bitter struggle against trades nuisances. The movement of trades outwards from the increasingly cramped quarters of the old industrial areas, combined with the facilities of the Surrey Canal, and later of the railway network into Surrey, Kent and Sussex, made north Camberwell, by the end of the century, one of

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1. S.L.P., 1st July, 1865.

the few industrial areas south of the river.[1] It is therefore, from the Camberwell records that the clearest understanding of the difficulties of enforcing nuisance law may be obtained.

The Nuisance Removal Acts provided the framework for a considerable portion of the officers' work, yet except for certain offensive trades under the regulation of the Metropolitan Board of Works, all that could be required in most cases of industrial nuisance was that the best practical means to minimize the nuisance be adopted. This occurred because of a confusion of wording in the 1855 Act, which went unremedied in that of 1868.[2] In practice, sections 8 and 27 of the 1855 Act were found to clash.[3] In cases of nuisance, such as offensive odours, arising from the accumulation of substances used in business, or from the actual business procedure (manure for instance, or bone-boiling), a summons might be taken out under section 27, in which case it was pleaded that it should have been taken out under section 8. If this was done, however, a removal order would be stayed by the objection that the means adopted were sufficient for public health, or that the deposit was kept no longer than was required for business purposes. To this excuse there was no answer, and, as Bristowe bitterly observed, " in many cases more or less nuisance becomes permissible by law" .[4] In extreme cases, this situation led to the unedifying spectacle of tradesmen being hounded out of existence by repeated prosecutions, because they could not, or would not, bring their premises up to the required standard.[5]

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1. Booth, op. cit. Vol. I, p. 262.

2. Med. Off. Ann. Rep. Camberwell, 1883-84; Report on Housing, pp. 168-169.

3. Metropolitan Association of Medical Officers, Suggestions for Amendments in the Nuisance Removal Acts., etc. (1865), p. 6-7.

4. Med. Off. Ann. Rep. Camberwell, 1883-84; Report on Housing, p. 168.

5. Med. Off. Ann. Rep. Newington, 1857, p. 32-33; also Sew. and San. Comm. Mins., Camberwell, 1st January, 1864; 16th February, 1864; 2nd January, 1866.

The legal battles in which trades nuisances involved Camberwell Vestry were generally tenaciously fought on both sides. Proceedings were taken in nearly all cases where obedience was not paid to the Vestry's orders under the Sanitary Acts. The magistrates, however, although generally inclined to assist the local authority, were, as Bristowe admitted, entitled to their own opinions, and the ambiguous wording of the acts meant that the sanitary officers' efforts to remedy defects were frequently thwarted:

> For some obvious sanitary needs no legal provisions whatever exist. In some cases specific enactments are rendered powerless by other enactments. The plea of poverty or some other such plea is successfully urged in mitigation or for delay. Scientific evidence of an impressive character and barristers of eminence appear in opposition. Magistrates occasionally misread Acts of Parliament. And last, but not least, persons required to do sanitary works, even under the order of a magistrate, not unfrequently do them perfunctorily and imperfectly, but in such a way as just to escape the penalty attached to non-compliance.[1]

On occasion, therefore, the sanitary officers came in for a shock. For instance, a serious nuisance arose from a manufacturing works in Camberwell. Proceedings were instituted under the 1855 Nuisances Removal Act. In court, however, the lawyer for the defence quoted a clause in the Act which, because it did not have any apparent relevance to Camberwell, had escaped the notice of both Bristoweand the Vestry Clerk. Under the marginal reference " not to affect navigation of rivers or canals", the clause specified that the provisions of the Act should not extend, or be constructed to extend, to mines of different descriptions, or to the smelting of ores and minerals, or to the manufacturing of the produce of ores and minerals. The case was dismissed, and although the outraged Vestry sent a deputation to the Local Government Board, the offending clause remained unmodified.[2]

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1. Med. Off. Ann. Rep. Camberwell, 1883-84; Report on Housing, p. 166-7.

2. Ibid., p. 169.

The application of the nuisance standard in the acts relating to dwelling-houses was of equal importance, and irritation, to the officers. Dirt and dilapidation did not necessarily mean injury to health: " holes in ceilings, holes in walls, holes in floors, ricketty staircases and broken banisters may all exist without causing the slightest danger to health" recorded Bristowe. Blackness of walls and ceilings might simply be the consequence of dirty occupations, or of the effect of smoke, and could be in the sanitary view essentially harmless. A foul atmosphere associated with these conditions might be held simply to be due to the fact that the windows were closed, and many people " with unwashed bodies and frowsy reeking clothes gathered there". [1] Such arguments were successfully used against the endeavours of the sanitary officers, to the point, Bristowe asserted, that " a thoughtful and experienced expert would, on these and such like grounds, often hesitate or refuse to institute proceedings against property which the casual philanthropic visitor would at once condemn". [2] The insistence on the issue of a certificate to the effect that a house was " in a state injurious to health so as to be unfit for human habitation" also jeopardised the working of the Torren's Act of 1868, which otherwise met approval because it could be held " in terrorem" over landlords who grossly neglected their duty.[3] The 1879 Amendment Act was however, from the medical officers' point of view, singularly ill-conceived and ill-constructed and largely defeated the intentions and destroyed the usefulness of the original Act.[4]

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1. Med. Off. Ann. Rep. Camberwell, 1883-84; Report on Housing, p. 167-8.
2. Ibid., p. 168.
3. Ibid., p. 176.
4. Ibid., p. 177

Poor conception and construction also dogged the application of the law relating to houses let in lodgings. The need for regulation of the law relating to this type of dwelling, much frequented by the poorest classes, had been made clear as early as 1842, when Edwin Chadwick reported that in almost every town from which information had been received, the common lodging houses were pointed out as foci of contagious disease.[1] Legislation was first achieved on this subject in 1851, when Shaftesbury's Act[2] placed the registration, inspection, etc., of lodging houses under the control of the Metropolitan Police. The Nuisances Removal Act 1855 gave the vestries powers for the abatement of overcrowding in houses occupied by more than one family; and the 1866 Sanitary Act enabled local authorities to make regulations for all houses let in lodgings or occupied by members of more than one family, including limitation of the number of occupants, and the enforcement of cleansing and lime-washing. Of the forty-two local authorities in London, however, only Chelsea and Hackney took effective action on this provision;[3] elsewhere such provisions were nowhere successfully enforced at any time up until 1900. There were several reasons for this, of which the legislators' predilection for precisely detailed instructions was not the least. The Local Government Board regulations of 1883, for instance, required every lodger to have every window of every sleeping room fully open for two hours every day, while the floor of each room was to be thoroughly swept at least once a day and washed at least once a week.[4] The nature of much house property in the three parishes was such as to render it eligible for supervision

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1. E. Chadwick, Sanitary Report (ed., M.W. Flinn, 1965), p. 411
2. 14 and 15 Vict. c. 28
3. F. Sheppard, The Great Wen (1971), p. 290.
4. Vestry Ann. Rep. Camberwell, 1883-84, p. 109.

under the acts. In St. George and St. Mary, some two thirds of the population lived in tenement rooms by 1895,[1] while Bristowe estimated in 1884 that some 10,000 houses in Camberwell would come under the statutory definition of homes " let in lodgings or occupied by members of more than one family".[2] Considered in these terms, the application of section 33 of the Sanitary Act, 1866 (29 and 30 Vict. c. 90) and of section 47 of the 1874 Amendment Act, would have required staff resources far beyond those which the sanitary department could command.[3]

The situation was complicated in several ways by the nature of property ownership in the area. In the first place, members of all three vestries were of the class of prosperous tradesmen and smallholders who had interests in tenement property. Although this did not necessarily mean that the vestries actively hampered the medical officers' attempts at enforcing the law - it did not in Camberwell apparently[4] - the extreme reluctance of Newington either to adopt or enforce housing regulations of this kind may be partly so explained.[5] A further consideration, noted by Iliff as the great objection to the lodging house clauses of the 1866 and 1874 acts, and the reason why they were not generally adopted, was the fear that " undue interference" with private houses would be the result, which no exemption clause as suggested by the Local Government Board would prevent.[6] The most ticklish question, however, was that posed by the definition of the word " landlord" : a problem which caused much confusion and hampered

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1. S.L.P., 25th May, 1895.
2. Vestry Ann. Rep. Camberwell, 1883-84, p. 111
3. Med. Off. Ann. Rep. St. George, 1892, p. 35
4. Med. Off. Ann. Rep. Camberwell, 1883-84; Report on Housing, p. 181
5. Public Health and Sanitary Comm. Mins., Newington, 13th December, 1897.
6. S.C. Documents on Housing: 2/Box 1; ms. note dated 5th November, 1884.

the application of the acts as much as the interpretation of " nuisance" in a different context.

The difficulties presented by this interpretation became evident very soon after attempts were made to enforce the law in South London. Once again, it is in Camberwell that the problem comes to light; neither Newington nor St. George got so far as to attempt to enforce lodging house regulations before the 1890s. In Camberwell, the Vestry had framed and adopted regulations on this subject in 1870, which were subsequently approved by the Local Government Board. For some years the sanitary department enforced the regulations " with undoubted advantage" in selected localities where the character of the property and the inhabitants was such as to warrant regulation[1] - in the Hollington Street area, Stockwell Street and Sumner Road for-instance.[2] The difficulties of administration soon outweighed the sanitary advantages gained, however. The type of property with which these laws were chiefly concerned was the small 3-4 roomed terrace house, let at a rent of between 4 and 7 shillings a week, and which might contain between two and four " families". The leasehold system here was three and even four-tiered. There was the actual landlord or leaseholder who received the rent of the house; then the agent who leased out the property; then the weekly or yearly tenants who in their turn let out lodgings within the home. In practice, the turnover of the three basic factors, landlord, agent and tenant, was remarkably rapid,[3] and because the regulations could only be enforced on the persons who had received the notice to register the house, registrations were constantly becoming invalid. The whole process of registration

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1. Sewers and Sanitary Comm. Mins., Camberwell, 7th December, 1889.

2. Vestry Minutes, Camberwell: 24th October, 1872; 6th November, 1872; 8th June, 1875; 3rd August, 1875.

3. Sewers and Sanitary Comm. Mins., Camberwell, 7th December, 1889.

therefore had to be begun again. Not surprisingly, the tediousness of this procedure caused a falling off in notices to register, and in 1882 the scheme was abandoned.

In this first period of the application of the lodging house clauses, the furious debates over the interpretation of " landlord" and of the ultimate responsibility for repairs and maintenance, are not as evident as they became in the 1890's. It seems possible that this was due to the Vestry's regulation that notice of registration should be given to both the letter of the lodging and the landlord, who was stated to be responsible for carrying out the regulations,[1] but it is perhaps more likely that the complexities of ownership were such that the enforcement of the regulations was never so strongly pressed as to produce opposition. In any event, by the time the Vestry once again attempted to enforce lodging house regulations in the 1980's (modified regulations were sanctioned by the LGB in March 1891[2]), the process of registration was complicated by the resort of many property-owners to the law. In 1898, the Police Court magistrate decided that the tenant who sub-let the house and received the profits from such letting was the " landlord" , and not the actual owner of the premises. The Vestry's solicitor was of the opinion that the practical effect of the decision was to make the working of the bye-laws a dead letter, " as in all probability directly notice to cleanse the premises is served upon the person held to be the " landlord" , he will abscond before an order can be obtained against him" .[3] The decision of the Police Magistrate resuscitated the old problem of registration. The tenancies of sub-lessees were still

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1. Camberwell Vestry Minutes, 9th November, 1870.
2. Med. Off. Ann. Rep. Camberwell, 1889-90, p. 123.
3. Camberwell Vestry Minutes, 11th May, 1898.

of a " fleeting character" and, as Francis Stevens recognised, if they were to be held liable, it would render registration and re-registration common, and this would facilitate evasion of bye-laws.[1]

The enforcement of the lodging house clauses was also modified by the social pressures which complicated the working of more specifically disease concerned enactments, such as the Infectious Diseases Notification Act, 1889. The delicate question of social status and acceptability emerges in the unobtrusively negative approach which the " respectable" classes applied to such legislation as seemed likely to encroach upon their privacy. The stalling procedure which the vestries of Camberwell and Newington adopted towards the enforcement of the lodging house clauses in the 1890's is a clear example of this. Both parishes contained a certain amount of respectable property, of the kind inhabited by the clerical classes and their superiors. The taking in of lodgers - hence the existence of houses containing members of more than one family - was by no means uncommon among the lower echelons of this group, even among respectable tradesmen, doctors and the clergy. These classes also owned local house property, and were of the type from which vestries were likely to be drawn: Charles Cook of Camberwell Vestry, appears to have owned houses in Willow Brook Road, where he himself lived, and in Crab Tree Shot Road,[2] while Mr. Snell of St. George's owned poor property near the far from respectable Langsdowne Place.[3]

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1. Med. Off. Ann. Rep. Camberwell, 1897-98, p. 2

2. Camberwell Vestry Minutes 23rd November, 1864.

3. S.L.P. 20th May, 1865.

The question of status was a potent factor in inhibiting the application of lodging-house law. The question became one of definition: obviously some limit had to be placed on homes eligible for registration. To the legislator, the simplest criterion was perhaps that of the rateable value of the house: all above a certain level were to escape regulation, all below it to be vulnerable. When this definition was first proposed by the Local Government Board in their "model" lodging house regulations of 1883, it was met with impatience by Bristowe:[1]

> ... I know little of what obtains in central parishes, but in parishes like our own ... the adoption of any such rule would be not only unjust, but absurd. Most of the houses (as in Sultan and Hollington Streets), which have been brought under our regulations, are tolerably large houses, occupied by several families each; but a great number of our houses let in lodgings are small, clean houses, in respectable streets, occupied by clerks and persons of that class, which stand at a lower rental than these others.

It was this situation which probably motivated Camberwell and Newington vestries in their opposition to the regulations of the 1890's.
In 1894 the Sanitary Committee of the former was worrying about the type of houses to come under the heading of houses let in lodgings, and ordered the Vestry Clerk and Francis Stevens to report on the matter.[2] Although this committee appears to have overcome its doubts to the extent of recommending an increase in the maximum rent standard adopted from 5/- rental per week per lodger in unfurnished rooms to 7/6, the Vestry as a whole continued sceptical.[3] Camberwell did eventually admit the increase in standard (at the same time refusing a suggested

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1. Med. Off. Ann. Rep. Camberwell, 1883-84, p. 111
2. Sew. and San. Comm. Mins., Camberwell, 20th February, 1894.
3. Camberwell Vestry Mins., 15th June, 1898.

appeal to the LGB for a revised interpretation of " landlord"),[1] but this did not result in any wider registration, for the Vestry retained the power of consent to recommended registrations, and exercised it to the full.[2] Although Stevens and the Sanitary Committee insisted that there was no intention of interfering with any but houses " of the overcrowded class ... generally situated in the poorer parts of the parish" ,[3] no brief was held for their suggestion that the standard be raised to 15/- per week for houses with unfurnished rooms, the limit for furnished housing being allowed to remain, " for it is not in that class of house that we shall get difficulty".[4] The Vestry, however, remained obdurate, and the struggle continued unresolved until the close of its existence.

The situation in Newington seems to have been very similar, and was, perhaps, aggravated by the declining social and rateable value of private houses in the parish.[5] As we have seen, Iliff rated the fear of undue interference with private houses as the principal objection to the lodging house clauses, and Newington's Vestry Clerk was apparently active in blocking the medical officer's attempts to register certain houses. Millson complained bitterly that many houses represented by him as in need of registration did not appear on the Vestry Clerk's list as the latter, " appears ... to be under a singular misapprehension in supposing that, before houses can or ought to be placed on the list ... it is necessary to show that

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1. Camberwell Vestry Mins., 5th November, 1898.
2. Med. Off. Ann. Rep. Camberwell, 1898-99, p. 15.
3. Camberwell Vestry Minutes, 21st September, 1898.
4. Med. Off. Ann. Rep. Camberwell, 1897-98, p. 22.
5. Newington Vestry Minutes, 16th January, 1856.

overcrowding,or other insanitary conditions existed at the moment when representation was made. It is clearly in houses likely to be so affected that the regulations are so valuable and necessary".[1] The Vestry Clerk was ably assisted in his blocking endeavours by the Sub-Committee appointed to review Millson's registration recommendations, which failed to meet with irritating persistence, and by the Vestry itself, which made no orders on Millson's report containing this information, despite the threat of a public inquiry into its failure to carry out the regulations.[2]

The lodging houses clauses caused perhaps more administrative tangles than most sanitary legislation, but even where the phrasing of enactments was clear, the enforcing often demanded a great deal of tact and perseverance. The social humiliation inflicted by the Infectious Diseases Notification Act, for instance, delayed the effectiveness of the act to some extent until official persistence could succeed in softening the popular consciousness. This realisation may have influenced Bristowe's approach to the matter. In the first fortnight after the act came into force, he received 131 notifications from medical men, but only 8 from parents or guardians, a discrepancy which he plainly regarded as unlikely. He insisted, however, that no proceedings be taken unless it could be shown that there was a clear intention to conceal the presence of disease, and advised a fresh issue of the handbills describing the provisions of the act which had previously been distributed to all houses in the parish.[3]

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1. Public Health and Sanitary Comm. Mins., Newington, 13th December, 1897.
2. Ibid.
3. Camberwell Vestry Minutes, 13th November, 1889.

Legislation, however, constituted only a part of the framework within which the medical officers worked. The state institutionalisation of medical care was a feature of nineteenth century English social development,[1] as was the emergence of central bureaucratic control of the local adminstration. The work of the medical officers was affected by both these factors. The Poor Law system for the relief and treatment of the sick poor ante-dated the creation of the preventive medical officerships; the Poor Law hospital system, actually the province of the Metropolitan Asylums Board, post-dated them. On the administrative side, the Local Government Board, the Metropolitan Board of Works, the London County Council (from 1889) and the vestries all exercised powers which could affect the officers' activities. In relation to these institutions, the medical officers occupied a subordinate and essentially uninfluential position. Nevertheless, it seems clear that, although the area of the MOHs' concerns was defined by that of the other agencies (for instance, they had no powers in respect of poor relief, or the execution of metropolitan sanitary policy), in their daily activities the MOHs acted with almost complete autonomy, independent of reference to other authorities.

The Poor Law Medical Officers, whose title suggests a parallel role to that of the Medical Officers of Health, in fact operated under totally different criteria. Their duties were strictly concerned with the treatment of the sick poor. They provided medicine and medical attention to the pauper class. It was no part of their duty to search out disease, nor to take steps for its prevention; it was only rarely, even, that they were given the opportunity of pointing out social evils to their employers.[2] The formation of the Metropolitan Society of Medical Officers

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1. See G.M. Ayers, England's First State Hospital (1971); also, Ruth Hodgkinson, The Origins of the National Health Service (1967).

2. Hodgkinson, op. cit., pp. 58-59.

was to some extent protective, aimed at bolstering the influence of the medical officers as a group on local government medical policy, and on public opinion. The success of the Society was considerable, but did not ease relations with associated institutions, since,in the fragmented world of metropolitan administrative powers, each grouping stood very much upon its own dignities.

The government supervisory bodies in fact had little direct contact with the medical officers' activities. Although notifications of intended legislation and new bye-laws reached vestries and officers from the LGB (1871-1889) and the LCC (1889-), in a gesture of consultation, in practice there was little inter-reaction. The bye-laws issued by these authorities on such subjects as the standards required of dairies and slaughter-houses provided the detail of responsibilities already laid upon the sanitary authorities by act of parliament, but interference by the officers of the central agencies in the ordinary activities of the vestry officers occurred only in exceptional circumstances.[1] There are indications, indeed, that the central authorities were in some respects poorly informed or careless of what was going on in the

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1. See below, page 112.

parishes. John Simon, Medical Officer of the Privy Council from 1858 to 1872, was extremely critical of the Local Government Board's sanitary record,[1] and his general criticisms can be supplemented at the local level. On the subject of houses let in lodgings, for instance, the Board manifested great concern as soon as the " Bitter Cry" sensation broke in the autumn of 1883. By 29th December, it had issued a letter to 17 of the 40 local authorities in the metropolitan area declaring the provisions of section 35 of the Sanitary Act 1866 and section 47 of the Sanitary Law Amendment Act 1874 in force in their areas, as it was not already in operation. Newington and Camberwell both received this communication, and the latter, having struggled to enforce these enactments for a number of years, was indignant at this manifestation of indifference:[2]

> It is strange therefore, that the Local Government Board should have chosen Camberwell on which to bestow their care and advice, and have overlooked many parishes which have never, even up to the present moment, made any attempt whatever to obtain powers under the Act.

Such tactlessness did not make for sympathetic feelings towards the authority, and a generally lethargic approach by the Board to its sanitary duties seems to have aggravated the hostile reaction when it did attempt to interfere.

Laxness of sanitary supervision was a feature of both the Local Government Board and the Metropolitan Board of Works. The latter, composed of representatives from all the metropolitan local authorities, was often dilatory and inefficient. There was much quarrelling over

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1. John Simon, English Sanitary Institutions (2nd ed., 1897), pp. 387-406.
2. Vestry Ann. Rep. Camberwell, 1883-84, p. 106.

rival parish interests and a general reluctance to spend money and get things done. Although the Board made regulations - for the construction and management of slaughter houses and dairies for example - there was no Board inspectorate, there being no legal provision for such, and it was only by vestry action that these regulations were to any extent complied with.[2] In other respects, however, the MBW performed efficiently as Dr. Dudfield's tribute towards the close of its career shows.[3] Yet if lax supervision enabled a lazy officer to slack - as for lack of firmness from either vestry or central authority Thomas Waterworth seems to have done - it enabled the efficient and conscientious - as most seem to have been[4] - to fulfil their task to the best of their own discretion. The creating of the London County Council, significant of the greater energy which was to be applied to local government in the 1890's, brought a change of atmosphere, and presaged the disappearance of the vestries into the larger borough organisations less vulnerable to parochial self-interest.

From its formation in 1889, the London County Council brought a supplementary staff of inspectors to bear upon the health problems of London, somewhat to the irritation of the still highly independent local bureaucracies. This irritation was heightened by incidents which seemed to show the Council pursuing a policy intended to undermine the credit of the local health organisations. In Camberwell, battle raged between the Vestry and the Council over conditions at the premises of the Westbury Dairy Company in the summer of 1898. The behaviour of

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1. Vestry Ann. Rep. Camberwell, 1857, p. 2.
2. Med. Off. Ann. Rep. Camberwell, 1880-81, p. 85.
3. R.O. Dudfield, Two Sanitary Addresses (1889), p.3.
4. A.P. Stewart and Jenkins, op. cit. pp. 26, 91.

the LCC, demanding the dismissal of the Vestry's inspectors,[1] together with the halting and confused testimonies of its own officers,[2] did much to generate sympathy for Inspector Stevenson, despite his obvious negligence, and the persecution campaign which the council subsequently waged against Stevenson equally creates an impression of conciliar spite. The leniency with which the Vestry treated the inspectors - a four day suspension and a " severe reprimand" - may mark more the determination to resist the central bureaucracy than a passive defence of the inspectors' conduct. Yet the Vestry felt a pronounced distaste for the vigilance of the Council for any story which might compromise Heath and Stevenson enough to ensure their dismissal. To a subsequent charge of corruption over Christmas gifts, the Vestry replied deploring that the LCC should have thought fit to augment the charges already made " by a statement framed against them" of such a serious nature.[3] The firmness of the Vestry's attitude had its effect, for the Council withdrew the charges, although only after a length of time which registered it a grudging defeat.[4]

The London County Council by no means constituted a central sanitary authority, however. As public awareness of the possibility of, and need to, control disease increased, so the demand for such an institution became louder. The need was for a body with legislative powers, which was primarily interested in, and thoroughly informed about, the sanitary requirements of the metropolis. Neither the Local

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1. Camberwell Vestry Minutes, 29th June, 1898.
2. Ibid., 15th June, 1898.
3. Camberwell Vestry Minutes, 25th January, 1899.
4. Camberwell Vestry Minutes, 22nd March, 1899.

Government Board, which had the power to institute legislative proceedings, nor the Metropolitan Asylums Board, which did not, came up to the required standard. The former it was remarked, when the public were clamouring for stronger measures against epidemic diphtheria - measures which could only be achieved by legislation - appeared to dread rashness above all things. " It evidently has faith in consideration, and it seems to have inspired the Asylums Board with some degree of the same faith" .[1] Such demands were to some extent satisfied when, in 1889, the Asylums Board hospitals were opened to all cases of infectious disease. This removed the immediate cause of the outcry for stronger measures of disease control, but the lack of a coordinating central sanitary authority remained a serious weakness in the capital's disease defence system at the end of the period.

The supervisory powers of government bodies were not the only ones of which the medical officers had to be aware. The health provisions of the metropolis, both those long established and those brought into being by the increased concern of the nineteenth century governments, proved something of a complication to the cause of disease prevention. Family remedies and those of the local apothecary or his substitute, were the first resort in cases of illness among all classes. At the lower social levels, the arts of the travelling herbalist,[2] or the local quack would be called upon, rather than those of the trained pharmacist, while towards the end of the century the rapid expansion of the patent medicine industry provided a further alternative supply of home treatments. Family self-reliance and the

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1. S.L.P., 29th September, 1888.

2. Mayhew, Life and Labour (Dover, ed., 1968), Vol. I, p. 205.

unwillingness to incur the expense of a doctor reduced the call on professional medical aid in many cases, but among the middle classes, the demand for medical attention was high enough to keep the profession busy.[1] The wide-spread success of the London dispensaries was largely due to working-class patronage: treatment was by ticket, issued to benefitted members who paid an annual subscription, and the charitable dispensaries, of which there were 26 in London in 1871, tried to limit their services to non-paupers, that is, to those beyond the range of the poor law medical services.[2] The Camberwell Dispensary, for instance had 3,383 benefitted members in 1966, with an average daily attendance at the surgery of 40.[3]

Reference to the medical practitioner was largely the practice of the middling and wealthy classes, and the rising social status of the profession from the later eighteenth century is one indication of the increasing respectability of at least the upper ranks. As a whole, however, the qualification of " doctor" remained a broad one, covering many miscellaneous ranks, with legal titles as various " as the names of snuffs or sauces".[4] The passing of the first Medical Act in 1858, and the establishment of the Medical Council first ensured a certain uniformity of standards and terminology of qualification. It is difficult to assess the number of doctors practising in a particular area, let alone the size of their practice. In 1860, the Registrar-General spoke of over 2,000 doctors practising in London and the vicinity.[5] It seems likely that this number increased as the

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1. Eg. M.V. Hughes, A London Child of the 1870's (1977 ed.), pp. 77-78.
2. R. Hodgkinson, op. cit., p. 611.
3. S.L.P., 18th May, 1867.
4. Simon, op. cit., p. 269.
5. Twenty-first report of the Registrar-General, PP., 1860, xxix, p. 590.

century progressed, but no estimates are available for the localities. The relationship between the preventive officers and their colleagues in private practice was generally amicable. Difficulties, however, could arise and practitioners were not always cooperative in departmental attempts at prevention. A typhus outbreak in Camberwell in the 1880's illustrates this. The medical men concerned in the primary cases cooperated loyally with the sanitary department, but in some cases the disease was carried to places up to half-a-mile away, and came under the treatment of other practitioners. Although the Inspectors traced these cases, and informed the doctors of the nature of the disease, these practitioners refused to recognise it as typhus, and all attempts to remove to hospital, isolate, or disinfect in these cases failed.[1]

Conflicts such as this may have increased with the enactment of the Infectious Diseases Notification Bill in 1889. The duty which this Act placed upon the practitioner of notifying the medical officer, by certificate, of cases of infectious disease, caused some tension. The expense of postage, for instance, was resented by some practitioners.[2] In other cases, some of the weaknesses of the medical profession in training or observation, were exposed. Some practitioners were unable to distinguish between scarlet fever (notifiable) and measles (not notifiable). This caused some embarrassment to all when one practitioner was taken to court because he had failed to notify a case of the former.[3] Dichotomies between family and public interests were also revealed. Mr. Macfarlane, for instance, had a son who had

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1. Med. Off. Ann. Rep. Camberwell, 1883-84; Report on Housing, p. 176.

2. Sewers and Sanitary Comm. Mins., Camberwell, 2nd October, 1894; 30th April, 1895.

3. Public Health and Sanitary Comm. Mins., Newington, 18th July, 1892.

been sent to school while suffering from scarlet fever. At the court hearing Macfarlane strongly protested his innocence of all knowledge of the boy's illness, while the doctor who had attended the case as positively stated the contrary.[1]

The system of private medical practice was supplemented by two sets of institutions at this period, the Poor Law Board and the London hospitals. The former, under the provisions of the New Poor Law, 1834, provided facilities for the treatment of the sick poor. Founded upon the familiar system of outdoor relief - the families of the sick, or sick individuals were given monetary and medicinal assistance and provided with food as a medical extra[2] - Poor Law medical facilities included workhouse hospitals and the services of poor law doctors. The Poor Law authorities were also responsible, under the Vaccination Acts, for immunisation against smallpox. The work of the poor law medical officers in supervising the workhouse hospitals and visiting and treating the sick poor was in no way preventive. Their knowledge of the poor districts of any given locality, and of the kinds of diseases current there, was, however, unrivalled. When the preventive medical officerships of health were instituted, individual poor law medical officers had been treating the illnesses of the poor for up to 20 years; as had William Rendle, who may have owed his appointment in St. George's in part to this experience. From the start, it appeared to the medical officers in all three parishes essential to obtain the cooperation of the poor law medical officers if they were to keep abreast of disease trends in their parishes, and gain immediate information as to nuisances and unhealthy places. This cooperation was not always easy to obtain. The Camberwell Guardians refused to give

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1. Vestry Ann. Rep. Newington, 1892-93, p. 43.

2. Hodgkinson, op. cit., p. 273.

any precise instruction to their officers, but allowed Bristowe to examine their Report Book weekly.[1] Iliff, who was himself a Guardian, and Rendle, who had the required knowledge up to the moment, experienced less difficulty. The information system was by no means perfect, however, as Rendle later pointed out. In six months during 1865, at a time when typhus was epidemic in St. George, a parish where " wretched filthy houses may be counted by hundreds, if not thousands" of which many scores were visited by the Relieving Officers, there were but 20-23 informations of unwholesome places to the Medical Officer.[2]

The health work of the Poor Law authorities encompassed much of the illness of the poor. The difficulty of obtaining dispensary letters, and the long queues at the out-patients' departments of the hospitals compelled many to seek parochial medical relief who would not otherwise have done so; but there can be little doubt that a great deal of disease and illness escaped the attention of the authorities. Poor Law relief was never popular: Ruth Hodgkinson considers that the amount of untreated sickness in the period 1847-71, was " enormous",[3] and the incidence of disease was increased and recovery often retarded because the poor were reluctant to apply for medical relief, or, because of the meanness of many Guardians, this was withheld from them. Although in Newington the number of parochial sickness orders increased remarkably in 1861, Iliff's contention that a probable cause of this was " an augmented confidence in the skill and attention of the District Surgeons, who often find their best

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1. Camberwell Vestry Minutes, 30th January, 1856.
2. W. Rendle, London Vestries and Their Sanitary Work, (1865), p. 23.
3. Hodgkinson, op. cit., p. 277.

efforts thwarted by the misery and destitution of their patients" seems over-optimistic:[1] the severe winter weather combined with the severe suffering produced by strikes in the building trade, was a far more likely cause. At the same period Mayhew recorded that:[2]

> The repugance evinced by every woman who has any proper feeling for a life in a workhouse or a hospital, can hardly be imagined by those who think that, because people are poor, they must lose all feeling, all delicacy, all prejudices and all shame.

J.H. Stallard, a contemporary expert on the customs and circumstances of the poor, was equally firm: the unpopularity of the workhouse hospital was such that scarcely a patient was to be found there who had not already exhausted every other resource.[3]

Popular distaste for the Poor Law authorities and all their works had been purposely fostered by the provisions of the New Poor Law, and by the parsimony of Guardians thereafter. Conditions in poor-law institutions were often found by the medical officers of health to be highly undesirable. Rendle's visit, with the permission of the St. George's Guardians, to the Mitcham branch of St. George's Workhouse, provides a classic example. Here were lodged 240 pauper children from St. George's, and 200 from the Mile End Old Town Union. They were "remarkably unhealthy": over four weeks there was an average of 111 children ill a week, mostly with scrofulous diseases, but many with bad eyes; indications of overcrowding and malnutrition. However, Rendle reported that he was courteously received, and that the Guardians took prompt measures on his recommendation, despite

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1. Med. Off. Ann. Rep., Newington, 1861-62, p. 47.

2. Mayhew, op. cit., Vol. IV, p. 222; see also Lancet, 10th September, 1864, p. 296.

3. J.H. Stallard, Workhouse Hospitals (1865), p. 4.

the fact that he had no authority there.[1] What Rendle's recommendations were, and how they came to be acceptable remains a mystery: St. George's was one of the worst administered unions in the metropolis, affording minimum relief and intolerable workhouse conditions.[2] The Lancet's 1865 campaign against the disgraceful condition of metropolitan workhouses found particular focus on that in Mint Street belonging to St. George,[3] and a year later, the parish sanitary department was still evincing concern over conditions there, and the apparent blindness of the officials there to the dangers of contagion present in crowding some 200 of the very poor, some of whom had come from infected homes, into one room.[4] Conditions generally, it seemed, did not improve. In 1891, the Camberwell sanitary authorities had only just pulled themselves together to inspect the workhouse and inform the Guardians that their house was "not quite in order", and it was hoped that their example would inspire others to do likewise.[5]

The relationship between poor law and vestry medical officers seems generally, in spite of initial difficulties, to have been amicable. Although the parsimony of both Guardians and Vestry in St. George's made for poor officers and slack achievement, things appear to have been better in Camberwell and Newington. Bristowe had praise for the valuable assistance rendered to his department by the medical practitioners

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1. Med. Off. Second Quarterly Rep. St. George, 1858, p. 2.
2. Hodgkinson, op. cit., p. 358.
3. St. George's Vestry Minutes, 25th July, 1865; Lancet 15th July, 1865, p. 73.
4. S.L.P., 6th January, 1866.
5. S.L.P., 14th November, 1891.

"more especially the parochial surgeons, and the officers of the Board of Guardians".[1] A yet closer linkage was found even more valuable by Iliff, when he sought, and was elected, to the Newington Guardians: in spite of the "continuous, willing and valuable" cooperation from parish surgeons, registrars and relieving officers in the past,[2] he found that his presence on the Board made for greater "expedition and completeness" in the performance of sanitary work, and the establishment of a harmonious co-working gave him great satisfaction.[3] Communication between different branches of professional social workers could, therefore, be very profitable, and the development of the London School Board's inspectorate in the years after 1870 added force to this conviction. In one case in St. George's two women, in order to avoid sending their children to school, told the Schools Inspector that they were suffering, the one from smallpox, the other from typhoid. Not long after, the sanitary inspector arrived, to find the cases apocryphal.[4]

A close alliance between the poor law medical organisation and the vestries' sanitary departments would evidently have been a powerful weapon for preventive medicine. The general failure to draw the two organisations closer together rested on something more than bureaucratic shortsightedness. The tasks of treatment and prevention were essentially distinct, however much, in connexion with the poor and labouring classes, they might have in common, and the work of both sets of officers

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1. Med. Off. Ann. Rep., Camberwell, 1877-78, p. 203.
2. Med. Off. Ann. Rep., Newington, 1871-72, p. 131.
3. Ibid., 1876-77, p. 93.
4. S.L.P. 8th January, 1876.

might have been made more difficult had the impression been gained that the two worked hand in hand. Both were in many cases received warily: the one being the representative of an organisation that was hated and feared, the other the agent of hospitals, and disinfections, and but half understood instructions. The general attitude of the Poor Law Board towards its responsibilities, which Simon stigmatised as an "old secretarial belief", relying for its policies on bureaucratic common sense and failing to take account of medical knowledge,[1] also helped to put a distance between the two. The pressure of the Board's general policy ultimately limited the initiative of its officers towards a greater involvement in preventive policies.

The Poor Law Board was also a power in the world of hospital care. The Metropolitan Asylums Board, created in 1867 with the intention of providing hospital facilities for the care of the poor suffering from infectious diseases, had been placed under its supervision. Until the creation of the Asylums Board, the only nursing facilities available to the public were in the old general hospitals, Guy's and St. Thomas', for instance, south of the river, and the London Fever and Highgate Smallpox hospitals. The general hospitals had little connexion with the local health organisations. The number of their beds was limited - only three or four thousand in all - and their finances were limited, being derived either from charity or a fixed annual income. None of the twelve leading voluntary hospitals treated smallpox, and although eight claimed to admit fever patients they actually received very few.[2] They had not been founded to cope with infectious diseases, and even in times of epidemic they were obliged to find beds for the ordinary cases which they were founded

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1. Simon, op. cit., pp. 350-352.

2. G.M. Ayers, England's First State Hospitals (1971), p. 13.

to provide for. The constitutions of the general hospitals were not designed to meet the demands of preventive medicine: they had neither the capacity nor the desire to take in cases of infectious disease in need of isolation and treatment. A certain number of cases were admitted, as during the London typhus epidemic of 1864, although there were a number of medical men who held that none should have been admitted.[1]

The London Fever Hospital, Islington (1802), and the Smallpox Hospital, Highgate (1746), had both been founded to deal with specific diseases. Both were supported mainly by voluntary contributions, and were intended primarily for fee-paying patients. The Smallpox Hospital had about 100 beds, the Fever Hospital 182, increased to 350 when the building was enlarged in 1870. The fee at the latter was 2 guineas, and admission was by subscriber's or governor's letter; the pauper fee was 1/- a day, when beds were available. At the time of the opening of the new extension, it was, however, remarked that although not established as a pauper hospital, the London Fever had for a number of years received a very large number of paupers, and comparatively few of any other class.[2] The use to which these hospitals, and eventually also the MAB hospitals, were to be put was soon a bone of contention between the Poor Law Board and the preventive medical men. Bristowe, for instance, thought the London Fever Hospital an "admirable institution, admirably conducted", which did great good, but he disagreed with the policy of the Poor Law Board, which looked upon it as the proper place for the treatment of fever cases occurring among the poorest of the population.[3] Bristowe's commentary on the

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1. Med. Off. An.. Rep. Camberwell, 1864-65, p. 26.

2. S.L.P., 30th July, 1870.

3. Med. Off. Ann. Rep. Camberwell, 1864-65, p. 27.

position of the London Fever Hospital reveals elements of the medical lobby which influenced the passing of the Metropolitan Poor Act, 1867, establishing the MAB to provide district asylums for the sick, and which, some 20 years later, achieved the legal opening of these hospitals to all social classes. The idiocy of having only one such isolation hospital for "this vast metropolis" was the main argument. Patients were often brought long distances to the hospital, with fatal results; but to be effective the hospital should receive all fever cases from the classes most vulnerable to the disease, and should contain thousands, not hundreds, of beds. Bristowe suggested that a number of well-distributed hospitals were needed in the metropolitan area, to be maintained by rates levied on the public: the London Fever Hospital had recently had to appeal to the public several times for contributions.[1] The policies of the MAB indeed followed along these lines, eventually relieving pressure on the specialised hospitals, and rescuing the general hospitals from a policy decision in times of epidemic.

The Asylums Board hospitals were from their conception closely associated with the aims and policies of preventive medicine. The acknowledged inadequacies of curative medicine emphasised the importance of the isolation function of these hospitals; throughout this period isolation remained the principal weapon of preventive medicine. Disagreement, however, arose over admissions policy, between the Poor Law Board on the one hand, and the Managers of the Asylums Board and the MOH's on the other. The Poor Law Board wished to limit the services of the MAB hospitals to the paupers for whom it was responsible;

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1. Med. Off. Ann. Rep., Camberwell, 1864-65, p. 27.

the Managers to provide a socially far wider, and preventively more effective, service. Conflict also arose at times over the diseases with which the hospitals were to deal. Smallpox and "fever" - typhoid, typhus, relapsing and scarlet fever - were the diseases specified in the 1867 Act. In 1871, however, the Local Government Board proposed to empower the Managers to provide hospital accommodation in London, should cholera again visit the metropolis. This scheme was, however, heartily resisted by the London vestries, partly no doubt on grounds of expense, ostensibly because the disease was not contagious, and the transport of patients could easily endanger life.[1] The rapid increase of epidemic diphtheria in London in the late 1880s provoked demands that "this terrible disease" should be taken into the Managers' hospitals,[2] a request which was granted provisionally in the autumn of 1888, and legalised in the Poor Law Amendment Act of 1889.

The Metropolitan Asylums Board had been in existence for ten years when the controversy over the admission of non-pauper cases arose, during which time the Managers had been admitting such cases freely. In 1877, however, the Poor Law Board seemed to have realised for the first time that the patients admitted to their charge were for the most part not really paupers. An investigation conducted in the Board's hospitals on 15th February, 1877, showed that on that day, the proportion of patients acknowledging previous receipt of relief was under 10%.[3] In view of the provisions of the Sanitary Act 1866, which empowered vestries to provide hospitals for the reception of sick

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1. St. George's Vestry Minutes, 31st October, 1871.

2. S.L.P., 29th September, 1888; Camberwell Vestry Minutes, 24th October, 188
   24th October, 1888.

3. Camberwell Vestry Minutes, 3rd February, 1886.

parishioners, the Board felt that the vestries had been taking unfair advantage of their facilities. Although the Managers recognised the need for a comprehensive system for all classes desiring hospital accommodation, they were obliged to state their intention of only admitting proven paupers in the future.

The enforcement of this policy caused great indignation among the metropolitan vestries and their sanitary officers. Although the Managers continued to treat, without statutory sanction, and as a charge on the poor rate, a substantial number of patients legally the responsibility of the local authorities,[1] the medical officers of health often experienced difficulty in getting non-pauper cases admitted.[2] There were several points at issue. In the first place, it seemed to the vestries that the 1867 Act intended the Asylums Board to do better and more economically the hospital duties which the 1866 Act had given the vestries the option of doing. The Asylums Board in turn shared the vestries'view, but could not openly defy the Poor Law Board. The "series of magnificent hospitals" (five between 1870 and 1877) which the Managers had built at ratepayers expense were entirely disproportionate to the needs of the pauper population, in the restricted sense the Poor Law Board attached to the term. Further, insistence on this definition, with all the bureaucratic narrow-mindedness Simon deplored, was seen as a denial of real responsibility for the London poor, in assuming that only those who had received relief were those in need. The vital point, which the Board ignored to their ultimate expense, was that:

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1. Ayers, op. cit., p. 71.

2. Sanitary Committee Minutes, Newington, 26th September, 1882.

> ... sickness pauperises, and numerous poor persons, such as labourers, shopmen, shopwomen, and servants, who are paying their way while in health, become of necessity paupers as soon as they are ill, and that in this way the first evidence of pauperism is the need of hospital relief.[1]

The question of whether or not a comprehensive system of hospital accommodation for infectious disease cases was to exist to supplement and strengthen the work of the health officers was the final, and the most pressing issue. The MOHs, even the vestries, and the Managers saw clearly that if the "old secretarial beliefs" of the Poor Law Board were allowed to triumph, the causes of public health and preventive medicine would receive a severe setback. The campaign for the admission of all infectious cases, regardless of social class, to the hospitals was waged with determination by the local authorities for some years,[2] inspired by the knowledge that in Ireland since 1851, all poor persons had had the right to free medical advice and medicine, which was not deemed poor relief.[3] The equation of poor relief and the disenfranchisement of persons admitted to the MAB hospitals remained the strongest deterrent to their use by the general public. The Poor Law Act 1889 made institutions for the destitute sick for the first time legally available to patients of all classes; but it was not until 1891 that the MAB was dissociated from the poor law, and political disqualifications removed from their patients.

The victory achieved in winning the Asylums Board Hospitals for all classes did not, however, solve the problem of isolation and treatment for infectious disease cases. In spite of the numerous hospitals, and the effective system of hospital ships for the isolation

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1. Camberwell Vestry Minutes, 3rd February, 1886.

2. Newington Vestry Minutes, 22nd May, 1878; Med. Off. Ann. Rep., Camberwell, 1882-83, p. 111-2.

3. Ayers, op. cit., p. 64.

smallpox cases at Darenth there were occasions in the 1890s when the accommodation for cases became full. In 1893, for instance, warning was issued that beds for both scarlet fever and diphtheria patients were nearly exhausted,[1] and again in 1895 the Managers were drawing attention to the urgent need for additional accommodation for these patients in the metropolis.[2] The problem was to build new hospitals to accommodate the increasing number of patients which free access and the provisions of the Diseases Notification Act encouraged to apply for admission, and some care was required in selecting sites for these. Attempts to buy sites in relatively suburban areas such as Tooting Bec and Norwood failed, although a new 500 bed fever hospital was eventually erected on a 32 acre site at Shooters' Hill.[3] Local opposition to the erection of such hospitals was still intense, leading one observer to remark that the task of the Managers was a hard and thankless one: they were bound to provide accommodation for all infectious disease cases in London, and were severely condemned both for their failure and their attempts, to do so.[4]

Questions of discipline and disease theory caused friction between the Managers and medical officers at times. Closely related to popular distaste for living in the same area as an infectious disease hospital, was professional concern over the role of these institutions in spreading disease. In Camberwell, there was apparently real cause for such concern; Bristowe was not a man to get heated over unreasonable subjects, and his agitation over the Deptford Smallpox Hospital is

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1. Camberwell Vestry Minutes, 7th June, 1893; 21st July, 1893.
2. Vestry Ann. Rep., Camberwell, 1895-96, p. 222.
3. S.L.P., 4th August, 1894.
4. Ibid., 12th August, 1893.

unlikely to have been simply hysterical. Early in 1879, smallpox which had for some years not been very prevalent in the parish, but which had been increasing since the previous October, began spreading so rapidly that one of the sanitary inspectors was instructed to confine his duties entirely to this sphere.[1] The disease was chiefly active in the area of the parish closest to the newly opened (11th April 1878) Deptford Smallpox Hospital, in the poor neighbouring parish of St. Paul's, Deptford, to the east of Peckham. Bristowe's tables of smallpox incidence in the parish at this time show the greater vulnerability of Ward 4 to the disease clearly (see Table 5), and seem to justify his suspicions that the hospital was in some way responsible. Bristowe was well aware of the contagious nature of the disease, and that it spread along lines of human communication,[2] and was probably criticising the discipline of the hospital attendants in entering and leaving the hospital without proper disinfective precautions. Dr. Pink of Greenwich, however, whom Bristowe consulted on this issue, denied the importance of the hospital, maintaining that the disease had been prevalent in the area for two years previously, although he admitted that the hospital had been keptvery nearly full with cases from the immediate district.[3] The Royal Commission on Smallpox and Fever Hospitals, in itself evidence of the importance of this problem, concluded that suspicions of the hospitals as a source of infection were justified;[4] although as the Local Government Board's inspector in the case of the

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1. Sewers and Sanitary Comm. Minutes, Camberwell, 11th February, 1879.

2. Med. Off. Ann. Rep., Camberwell, 1877-78, p. 197-8.

3. Sew. and San. Comm. Mins., Camberwell, 23rd February, 1879, letter of Dr. Pink to Dr. Bristowe, 20th February, 1879.

4. Med. Off. Ann. Rep., Camberwell, 1881-82, p. 111.

Fulham Hospital worked on the hypothesis that infection was conveyed through the air, and took no account of the human lines of infection, no conclusions were offered as to how infection was conducted.[1] Such measures as were devised for improving safety were not, however, entirely successful, for in the 1890s, cases of scarlet fever patients being discharged before the infectious stage of the disease was over, occurred with sufficient frequency to arouse public concern.[2]

Outside the Asylums Board organisation, and the compass of the general hospitals, there existed a variety of smaller, largely charitable hospitals, catering for specialised cases. In South London, there was, for instance, the Royal South London Ophthalmic Hospital at St. George's Circus, which was built in 1889. The Evelina Hospital for children was opened in Southwark Bridge Road in June 1869. The private work of a Jewish aristocrat, it had originally been intended as a lying-in-hospital. Drs. Fawe and Priestly, who were consulted on the matter, advised that "to mass lying-in women together, under present hospital arrangements, is the worst thing that can be done for them",[3] and the little hospital, consisting at this period of only 30 beds and an outpatients department, was dedicated to the use of sick children. A committee of equal numbers of Jews and Christians ran the hospital on very broad principles: there was a Jewish cook and a Jewish ward; also the only whooping cough ward in London, shut off from the rest of the hospital by double doors. Although the strength of Jewish custom meant that the patients were mostly Christian, the hospital

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1. Ayers, op. cit., p. 76.

2. Vestry Ann. Rep., Camberwell, 1895-96, p. 223-4; 1897-98, p. 55-56.

3. S.L.P., 20th November, 1869.

rapidly becameeminent in its field. Men of the highest ability competed to work there, and ladies anxious to go into nursing also came there.[1] Many children excluded from the general hospitals were taken in, and as time went on, and applications for admission continued to increase, the want of accommodation was often keenly felt in both the in and out patients departments. In 1895, for instance, 782 children were treated in the hospital , including 264 operations, while the number of out-patients increased from 8,100 in 1894 to 8,800 in 1895.[2]

The complexities of the law, and the range of health provisions available to the denizens of the metropolis for many years added to the difficulties of the medical officers' task. The control of infectious disease, already complicated by popular reactions, disease theories and environmental obstacles, was beset by a situation in which the medical officers of health had no powers of their own to bring about the removal of cases to hospital, - being dependent on the Relieving Officers for approval until 1891 - and in which ignorance and prejudice had so many bolt-holes whose traditions or policies did not often include the retailing of information to the MOH. An outbreak of typhus in Camberwell in early 1883, for instance, was unknown to Bristowe, apparently until 1886. Investigating a series of subsequent outbreaks of typhus over a period of years, information of this outbreak was eventually given him by Drs. McCombie and McKellar of the South-Eastern and South Western hospitals; in this instance at least 7 cases and two deaths had entirely escaped the attention of the Camberwell sanitary

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1. S.L.P., 11th January, 1890.

2. Ibid., 2nd May, 1896.

department.[1] The enactment of the Infectious Diseases Notification Bill in 1889, by which all such cases had to be notified to the MOH was the first positive measure towards easing the officers' task. From this date, knowledge of the incidence of disease became increasingly complete, and the tracing of contacts and the disinfection of houses, clothing and other sources of infection consequently more thorough.

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1. Med. Off. Ann. Rep. Camberwell, 1886-87, pp. 92-94.

CHAPTER II

THE LOCAL HEALTH ORGANISATION

The inauguration and development of a state-inspired system of public health administration within the autonomous local administrations of London illustrates the novel trend, apparent in the social policies of nineteenth-century governments, towards greater state regulation of the private affairs of the population. The period 1855-1900 was one of uneasy association between policy and the instrument of police. The London vestries at this time had an unenviable reputation for parsimony, lethargy and self-interest which was to a certain extent justified, and which was particularly noted in connexion with the sanitary responsibilities placed on them by the Metropolis Local Management Act of 1855. Until the upsurge of concern and activity of the 1890s, it was popularly held that,[1]

> the greatest admirers of the Vestry system can scarcely maintain that they have been so assiduous as they might have been in the enforcement of sanitary laws.

In 1892, when the Public Health (London) Act cameinto force, it was recognised that there were many problems to be overcome before it could be successfully enforced.

> The Demon of Dirt has powerful allies. He will receive vigorous support from the Demons of Greed, of Vice, and especially from the Demon of Poverty .... But there is another Demon whose action is no less to be feared ... the Demon of Red Tape, and we are not sure that this Act does not leave too much scope for the action of this Demon ....

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1. South London Press, 12th January, 1884.

The enforcement of the Act rested too largely on the locally elected bodies, which were well known to be unreliable advocates of sanitary reform.[1]

The importance of the vestries and their attitude towards sanitary improvement was considerable, because of the dominant position they held in the administration of London's localities. Elected by the ratepayers of the parish, and under the nominal supervision of the Local Government Board (and later the LCC), the vestries were in practice largely autonomous, and able to place emphasis upon such aspects of their sanitary duties as they wished. Being rate-payers themselves, and the representatives of rate-payers, they were naturally alert to the distribution of local authority expenditure. Sanitary improvements were an expensive business, not simply in terms of the laying down of sewers and the organising of dust collection, but also in the private sphere, in the provision of sanitary facilities, ventilation and good water: measures which it was the duty of the vestry's sanitary department to enforce upon landlords and property holders. In this respect - consideration of both the public and private expense of sanitary improvement - London vestrymen were often drawn from a class which resented such expenditure, and were personally affected by the work of the sanitary departments.

The social composition of the London vestries is not easy to gauge with any precision, since little evidence of occupational structure survives. It may be assumed, however, that in parishes such as Newington and St.George, the vestrymen were representative of the more prosperous tradespeople of the parish, while in more patrician

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1. S.L.P., 2nd January, 1892.

Camberwell, such individuals were supplemented by a higher proportion of "gentlemen", whose social standing was not yet so high as to inhibit their direct participation in local government. Bristowe, for instance, in recording that he had been associated with Camberwell Vestry since its birth, remarked that he had thus been " intimately associated" with vestrymen of widely differing social positions, " a varying proportion of them ... landlords of the kind of property to which the Sanitary Acts chiefly relate." [1] The latter factor was of particular importance with regard to sanitary administration, and was undoubtedly a common characteristic of many London vestries. In St. George's at least one vestryman, Mr. Snell, owned property in a disreputable part of the parish,[2] and there are indications of others with similar interests: the Rev. Isaac Doxsey, of Camberwell, for instance, claimed that no sanitary official had been near, during the period of his ownership, some dilapidated property which he had acquired three years earlier.[3]

The composition of St. George's Vestry, in its earliest years at least, is however, available to illustrate the social casting of vestries in parishes of similar background to Newington and itself. In 1857, the parish was divided into three wards returning 17,14 and 16 vestrymen each. The occupations of those returned for St. Michael's Ward were: lamp-maker, house agent, oil-man, baker, gasfitter, wax

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1. Med. Off. Ann. Rep., 1883-84; Report on Housing, p. 180-181
2. S.L.P., 20th May, 1865.
3. ibid., 12th October, 1867.

chandler, wholesale ironmonger, grocer, two surgeons, chemist, builder, wholesale oilman, leatherseller and currier, two unspecified (possibly gentlemen) and a tailor. For St. Paul's Ward: gasfitter, two timber merchants, bookbinder, publican, engineer, bookseller, druggist, cheesemonger, chairmaker, tea merchant, three unspecified. For St. George's Ward: undertaker, auctioneer, three boot makers, hosier, two drapers, two surgeons, jeweller, plumber, butcher, grocer, cooper, upholsterer. The vestrymen for 1858 included four licensed victuallers, a coffee-house keeper, a hatter, a registrar of births and deaths, three gentlemen, a rag merchant, a ham dealer, and again three boot makers. These lists reflect the trading and industrial character of the parish, and since it seems that these continued throughout the period, it is likely that the vestrymen returned retained much the same social and occupational characteristics.

The extent to which conflict between public and private interests was allowed to influence vestry decisions varied. In Newington, the avoidance of registration of houses let in lodgings, against all the wishes and efforts of the MOH and the express condemnation of the London County Council[1] argues for strong private interests affecting the public decisions of the vestry. So does the failure of St. George to take any measures whatsoever towards registration. The interest of manufacturers and tradesmen, such as leather manufacturers, butchers, bakers and builders, whose methods of business were as open to the interference of sanitary officials as were those of property

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1. Public Health and Sanitary Comm. Mins., St. Mary, 13th December, 1897.

owners, has also to be taken into account. How far the social standing of these men in a wider society than the parish affected their local dealings is difficult to assess. Where both Newington and St. George's vestries had poor reputations, and were repeatedly mocked for the inadequacies of their sanitary administration in local journals such as the South London Press, Camberwell, whose citizens generally stood higher in social class, appears to have made determined efforts at least to maintain a stable or gradually improving sanitary condition, and did not provoke the same amount of journalistic scorn, nor the despair of their sanitary officials. Bristowe had measured words of praise for the members of Camberwell Vestry, even for the landlords of poorer property among them. He knew that many of these had become vestrymen with the intention of defending the interests of their class - " and why should they not?" - and he admitted that they had often influenced the decisions of the Vestry in sanitary matters.[1]

> But I have never known a case in which the Vestry, or even the Sanitary Committee, has interfered to prevent the strict application of the sanitary laws in respect of one of its own members.

Nor had any sanitary proceedings which the MOH urged as necessary not been sanctioned by the Vestry.

The mentalities of different social classes at this period, through the differing class composition of individual vestries, may also have accounted for some differences of approach. Among the tangle of influences which shaped popular mentalities at this period, a number may be distinguished as important with respect to

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1. Med. Off. Ann. Rep., Camberwell, 1883-84; Report on Housing, p. 181

sanitary reform, in some cases associated with economic factors. There was, for instance, the old puritan "morality" approach to poverty and hardship: that people became poor or remained so because they were morally unfitted for any other position in society. This belief seems particularly likely to have survived among the "self-made" classes, and among those, like the boot-makers and the house agents of St. George's Vestry, whose social position was not so far removed from that of the labouring poor, from whose ranks they most probably originated. These were the classes who benefitted by the leasing out of poor house property, and whose immediate economic interests often seemed to be adversely affected by sanitary improvement. Again, the nineteenth century produced new ideas which, while they may not have originally had any connexion with these circumstances, might eventually be applied as a justification for a ruthless social policy. The theory of evolution, for example, tailored well with the old moral conception of poverty:[1]

> The weeding out of the weak members of animal populations in nature appeared to some Victorians a sufficient excuse for imperialism, sweatshops, child labour and slums.

Such ideas often bred an indifference - as Rendle noted[2] - to the sufferings of humanity, and this was reflected in a broad antipathy to sanitary improvement. One observer of St. George's vestry meetings commented that,[3]

> ..... if this vestry bungled the parochial affairs, it was not for lack of capability to conduct them properly, but for lack of human interest in what they were doing.

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1. J.Dubos, Man, Medicine and Environment, (Pelican ed., 1972), p. 10.

2. Med. Off. Ann. Rep., St. George, 1857, Supplement, p. 2-3.

3. S.L.P., 17th March, 1866.

An increasing concern for humanity is, however, also discernible at this period, although it may largely have been confined to the educated and well-to-do classes. It was among these classes, if anywhere in English society, that the fear of social revolution as experienced in France was most likely to operate. In both France and England, growing apprehension of the working classes combined with awareness of scientific progress to produce new sociological approaches to the problems of the poor and labouring classes. It was in Paris in 1848 that Jules Guerin, editor of the Gazette Medicale, coined the term " social medicine" , which he defined as all those aspects of medicine which affect society - " the key to the burning question of this hour of regeneration", [1] and which involved all the social responsibilities which the proponents of preventive medicine were to attempt to shoulder in England. In England, increasing philanthropic interest, and the revival of religious enthusiasm, particularly when embodied in such beliefs as Christian Socialism, reflected the emergence of a similar social consciousness. Beatrice Webb defined this as the[2]

> mid-Victorian time-spirit ... the union of faith in the scientific method with the transference of the emotion of self-sacrificing service from God to man.

The starting point of this movement towards social amelioration was " a new consciousness of sin" among men of intellect and men of property.[3] The particular emergence of active philanthropy among the upper classes in London has been ascribed to the conspicuous

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1. Sir John Charles, The Social Context of Medicine (1964), p. 10.
2. Beatrice Webb, My Apprenticeship (2nd ed., 1946), p. 150.
3. Beatrice Webb, op . cit., p. 154.

absence there of all the features of self-help among the poor which manifested themselves in the North in the period after 1850.[1] To sensitive minds, London at this time came to symbolise that ultimate problem of urban existence and industrial society, the " residuum" , and had become[2]

> the Mecca of the dissolute, the lazy, the mendicant, the 'rough', and the spendthrift.

Few of these influences manifest themselves directly in the London vestry records, yet they cannot be discounted. These apprehensions belonged to the well-to-do classes, those largely removed from familiarity with the working classes in every day life. From their addresses, it seems that a fairly large proportion of Camberwell's vestrymen belonged to these classes, and were probably rather removed from the social and professional concerns of their colleagues at Newington and St. George. This social distinction may perhaps be reflected in the apparently greater flexibility of Camberwell Vestry's approach to sanitary improvement and the work of the public health department. Although complaints against the policies and efficiency of this vestry do appear in the press - about the state of the streets for example[3] - no general condemnations of the vestry's policy appear, and the impression of harmony and cooperation in general improvement given by Bristowe's reports appears to be reasonably sustained. The South London Press was less restrained about Dr. Iliff and Newington Vestry. During the Bitter Cry affair, Iliff addressed the Vestry[4]

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1. G.S. Jones, Outcast London, (1971), p. 12
2. ibid.
3. S.L.P., 25th January, 1868.
   Ibid., 12th January, 1884.

> ... as if there was one Vestry at least against which no ground for complaint existed,

much to the paper's disgust. However,[1]

> ... He did not carry with him all the members even of that Vestry; and we confess we are strongly inclined to believe that Mr. Sowcroft was not very far wrong when he affirmed that the sanitary condition of the parish was a disgrace to a civilised community.

No clear cut apportioning of intellectual influences existed between classes - one of St. George's gasfitter vestrymen was a member of the Southwark Municipal Reform Society, and wrote with deep concern about living conditions in the area[2] - but the possibility of social environment influencing vestry policy must be considered.

Although individual members of the London vestries were at times deeply interested in social conditions and active participants in the movement to improve them, the bulk of the official work of sanitary improvement fell upon the public health departments, through which the vestries exercised their responsibilities. These, constituted along the lines set out in the Metropolis Local Government Act, consisted essentially of the MOH and one or more inspectors of nuisances or sanitary inspectors. Later, disinfecting departments were sometimes added, in association with the public health departments, and under the supervision of the MOH. The supremacy of the latter within the public health department, although it rapidly became established, was not initially clear. The 1855 Act made no provision for association between the MOHs and the inspectors: the two were

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1. Med. Off. Half-Yearly Rep., St. George, July, 1856, p. 9.
2. Camberwell Vestry Mins., 13th February, 1856.

treated as separate appointments, each with responsibility to the Vestry. In most cases, it seems that all parties concerned accepted from the beginning that the MOH was to be the sanitary inspector's superior officer, but this was not always so. Bristowe, for instance, felt it necessary to assert that[1]

> ... all matters affecting the health of the parish should be under the superintendence of the Medical Officer of Health.

This was a principle which, he claimed,

> does not as yet appear to have been quite understood or acted upon,

and he suggested that in all cases of nuisance having reference to the sanitary condition of any house or other premises that came under the observation of the inspectors, they should report to the MOH that he might advise the Vestry as to the best way of dealing with it. The sanction of the Vestry remained the final requirement, and, apart from the fact that most MOH appointments were terminable at will, constituted the strongest control of the public health departments' activities.

In practice, the MOH was allowed a good deal of discretion in his application of the sanitary acts. The example of John Simon, both of the man and his achievements in the City, seems to have been very strong in the early years of the London MOHs' existence, and was probably the model upon which many of the new officers based their policies and sanitary ambitions.[2] In practical terms, Simon's work offered far more useful guidelines than the instructions of either

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1. Camberwell Vestry Mins., 13th February, 1856.
2. Camberwell Vestry Mins., 30th January, 1856.

the 1855 Act or the General Board of Health. The former instructed the officers to[1]

> ... inspect and report periodically upon the Sanitary Condition of their Parish or District, to ascertain the Existence of Diseases, more especially Epidemics, increasing the Rate of Mortality, and to point out the Existence of any Nuisance or other local Causes which are likely to originate and maintain such Diseases, and injuriously affect the Health of the Inhabitants and to take cognisance of the Fact of the Existence of any contagious or epidemic Diseases, and to point out the most efficacious Mode of checking or preventing the Spread of such Diseases, and also to point out the more efficient Modes for the Ventilation of Churches, Chapels, Schools, Lodging Houses, and other public Edifices within the Parish or District .....

The minute of the General Board of Health was almost equally imprecise, being concerned for the most part with generalities.[2]

The MOHs of 1855, and often their vestries, had, however, more definite ideas of their sanitary duties, and the similarity of these suggests a common inspiration. St. George's Vestry, for instance, concluded that it was necessary for their medical officer to be cognisant of all fluctuations of health in his district, and therefore in constant communication with the Registrar of Births and Deaths, the medical officer of the Board of Guardians, the hospitals and the dispensaries. He should be aware of all atmospheric variations observable in the district, and should be a competent meteorological observer, and keep a meteorological diary " in concert with the General Metropolitan System organised by Mr. Glaisher" . He was to know all " sources of unwholesomeness" in the district, whether from nuisances or causes not yet within the reach of the law, for instance impure water, adulterated food, and the " improper detention of the dead in dwelling houses previous

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1. 18 and 19 Vict. c. 120, section cxxxii
2. The Times, 24th December, 1855.

to interment" . The MOH's quarterly and annual reports were to show the vital statistics, the meteorology of the season, the physical condition of the district, the progress of its sanitary improvements, the imperfections of water supply, character of provisions for sale, of house accommodation for the poor, arrangements for burials and the general efficiency and deficiency of the sanitary laws.[1]

It is noteworthy, however, that when the extremely competent and dedicated William Rendle attempted to fulfill this programme, he met with no support from the vestry, whose lethargy and passive obstructiveness drove him to resign a bare three years after he had been appointed.[2] His sucessor, Henry Bateson, who had also been a candidate in 1855, was so unsure of his position and the real expectations of the vestry, that he was obliged to confess " a difficulty as to the definition of his duties" and to ask the Sewers Committee for advice.[3] The latter referred him to the vestry, but there is no record of their reply.

In Camberwell, the case was somewhat different, in that Bristowe took care to inform the Vestry of his intentions, remarking that[4]

> ... it seems to me essential that there should be a distinct understanding between us as to its (the medical officership's) objects and the means that should be adopted for their attainment.

Bristowe's statement of duty is rather more precise than that of St. George's Vestry, but is very similar. The most important duties were to arrange and classify mortuary tables, to ascertain how

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1. St. George's Vestry Mins., 10th January, 1856.
2. St. George's Vestry Mins., 31st January, 1859.
3. Sewers Comm. Mins., St. George, 29th March, 1859.
4. Camberwell Vestry Mins., 30th January, 1856.

far deaths were in excess of normal standards, and how far that excess was partial or diffused; and guided by this information to investigate the conditions leading to this undesirable result and suggest the means by which they might be removed. He was also to obtain early intelligence as to the appearance, prevalence and spread of epidemic and contagious diseases, to examine the influences at work for this production and development, and to propose such remedial sanitary measures as seemed necessary. He was to organise and carry out a plan for the systematic supervision and inspection of the parish, especially of the poorer districts, and to advise on all matters having, or likely to have, a prejudicial effect on public health. He was to be familiar with the conditions of the dwellings of the poorer classes, and lodging houses, and with the state of burial grounds, and the quality of water and other articles of diet publicly offered for sale. He was to keep a meteorological diary and in his reports explain how far mortality differences coincided with atmospheric changes. Bristowe expected to have lay mortuary tables before the Vestry weekly, quarterly and annually. As to the state of the parish with regard to disease, he would report at discretion. The difficulty of getting accurate information on this subject was far greater than on mortality: it was " impossible to ascertain the truth by personal inquiries" , and there was no machinery of information to fall back on.[1]

> I have, in fact, guided partly by the clear and valuable instructions which have been issued by the Board of Health to the Local Boards, endeavoured to frame my duties on the model offered by the City of London; and what I wish, is, that the duties and position of your Officer of Health should be similar to those of the Officer of Health for the City ....

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1. Camberwell Vestry Minutes, 30th January, 1856: until 1874 the Registrar-General's office issued copies of the weekly local mortality statistics to the MOHs. When this practice was abandoned, the MOHs obtained them instead from the local registrars of births and deaths.

The arduousness of the MOHs' duties, and the notorious anti-progressiveness of mid-nineteenth century local administrations, had raised an expectation that the posts of medical officer would be hard to fill with suitably qualified and competent doctors. In fact, this was not the case, and there was much competition for the new positions. The employment situation in the medical profession was not particularly good at this time. Outside the hospitals, which required a limited number of staff, and medical schools, the establishment of a practice was a far from easy affair. It was not a profession " lucrative to a young practitioner, with very little influence in London". [1] Poor Law appointments, which were badly paid, and where the cost of medicines had to come out of the doctor's own salary, were " avidly sought for and tenaciously held" as offering some security in an uncertain world.[2] The opportunity offered by the new appointments, generally better salaried than the poor law officer, and, although onerous, less harrowing and more rewarding than the poor law officerships. The avowed preventive aims of the medical officerships of health, and the opportunity of working for the improvement of the individual condition on the broad base of the public good must have held appeal for medical men concerned for the state of the poor. Beatrice Webb's analysis in 1910, of the position of the poor law medical officer who had one third of all deaths from phthisis pass through his hands, without seeing a single curable case, goes some way to explaining the attractions of the preventive officerships:[3]

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1. Charles Dickens, Bleak House, p.291.
2. R. Hodgkinson, The Origins or the National Health Service, (1967), p. 395.
3. ibid., p. 427.

> It breaks the spirit of a man who cares for anything about his professional work to have to go on year after year merely pretending to deal with cases, which have come to him only when destitution has set in, and therefore are usually too late for any permanently remedial treatment, under the structural and other conditions which he knows will prevent a cure, but which he, as a mere Poor Law doctor has no power to prevent ....

Competition for the officerships of the three parishes was certainly stiff in 1855, and there are indications that the positions had not become less desirable by the end of the period. In 1856 there were no less than 11 candidates for the officership of Camberwell (salary £200 pa), 11 for Newington (£200) and 8 for St. George's (£180 without any other public commitments). The officers elected in these three parishes all had previous associations with the area, apart from all other qualifications. Bristowe's father had been a practitioner in Camberwell,[1] and Iliff's not only a practitioner in Newington,[2] but also a member of the new civil vestry in his capacity as church warden. Rendle had lived in Southwark since the age of 4, was educated at the British and Foreign Training School in the Borough Road, and later attended Guy's Hospital Medical School, and Edward Grainger's medical school in Webb Street, Southwark. Qualifying MRCS in 1838, he became a poor law surgeon, and practised in Southwark for nearly 50 years.[3] The importance of the local connexion may in all three cases have been the determining factor in the appointment: of later appointments, Bateson, Waterworth and Millson were all local practitioners before becoming medical officers of health.

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1. Dictionary of National Biography, vol. xxii, p. 293.
2. S.L.P., 30th April, 1887,
3. D.N.B., vol. xvi, p. 899.

The approach of the vestries towards their later appointments indicates something of the nature of their different approaches to the sanitary question. In St. George's, for instance, the vestry does not appear to have bothered to advertise the appointment of 1859. Bateson was elected out of three candidates put forward by vestrymen with a salary cut to £120 per annum and permission to hold other appointments.[2] In 1879 on Bateson's death, the post was advertised in the Times, the Lancet, and three local newspapers, at £150 p.a. There were 7 applications, and after 5 shows of hands, Waterworth was elected, his retention of a steady 25 votes throughout the proceedings suggesting that he was a known and well-assessed quantity by a certain lobby of the vestry.[3] Newington, in 1887, were not even troubled by the formality of an election. At the time of Iliff's death, George Millson was an energetic and concerned member of the vestry, and he offered to discharge the MOH's duties gratuitously for 6 months until a suitable candidate was found. In June, 1887, he was appointed permanently to the post, with a salary of £300 p.a.[4] After passing of the Public Health (London) Act, 1891, the pattern of concern changes. This may be partly due to the LCC's offer to pay half the salary of approved officers appointed after this date; but may also reflect the growing concern over public health issues which becomes apparent in the 1890s - Newington Vestry, for instance, had been split into "progressive" and "moderate" sanitarians by 1894, the progressives taking the upper hand in December of that year.[5]

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1. St. George's Vestry Mins., 21st March, 1859.
2. ibid., 28th February, 1859.
3. ibid., 8th April, 1879.
4. Vestry Ann. Rep., Newington, 1887-88, p. 7; Lancet, 18th June, 1887, p. 1253.
5. Newington Vestry Minutes, 9th June, 1897.

St. George's decision to dismiss Waterworth in 1892 may be one indication of the impact of the 1891 Act. Waterworth had for some time shown himself to be an unsatisfactory officer. His annual reports are remarkable only for their extreme brevity and lack of any satisfactory information whatsoever. In 1885, he had been severely censured by St. Saviour's Union, the Asylum's Board and the Vestry, for his dilatoriness in getting a child smallpox sufferer to hospital: the child was not removed until five days after the case had come to his attention, and died 7 hours after her eventual admission. Waterworth's justification was that the case was not eligible for medical relief, that it was not his duty as MOH to investigate cases and give orders for removal (which was true), and that the mother had informed him that the Relieving Officer had said he would get the child removed. Nevertheless, it was pointed out, the Vestry's conduct towards the MOH proved that the charges of dilatoriness and want of attention were well grounded.[1] In 1891 Waterworth absented himself from duty for a week without prior permission and without prior notice. He did not name any practitioner to act in his absence, but signed a pile of forms and left them with the Inspector; they were subsequently taken into custody by the Vestry Clerk.[2] By 1892, therefore, it seems that the Vestry had had enough. Following the LCC's refusal to pay half his salary, Waterworth was dismissed and the decision taken to elect another officer.[3]

The two appointments made to officerships in the 1890s reveal the greater professionalism which marked the practice of preventive medicine forty or so years after it had first received official administrative

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1. S.L.P., 27th June, 1885.
2. St. George's San. Comm. Mins., 3rd March, 1891.
3. St. George's Vestry Mins., 26th April, 1891.

recognition. However passing was the sanitary enthusiasm with which St. George's conducted their 1892 election, it nevertheless produced an excellent officer, and the salary of £500 p.a. offered was a considerable improvement on the £150 Waterworth had received. Frederick Waldo was 39, and had previously been MOH for Newcastle-on-Tyne - a good preparation no doubt for work in a parish notorious for being the dirtiest in London. It was not long before this officer of " exceptional ability, zeal and efficiency" came into conflict with the Vestry, or, more precisely, with the Health Committee of the Vestry. The South London Press had remarked of the appointment that it was difficult to tell whether Waldo had been selected because of enlightenment or simply good luck on the Vestry's part.[1] It soon appeared that, although members of the Vestry thoroughly approved of Waldo, finding him " very efficient" , and badly treated by the Health Committee, the latter was resolute in its opinion that Waldo was a disrespectful officer who did not fulfill his duties properly (there had been a difference of opinion over the form of disinfection to be used, and the necessity of a " house of refuge").[2] Dr. Waldo's standard of sanitation was " too high" for St. George's Vestry,[3] whose policy had for so many years been that of " leaving it all alone".[4]

In Camberwell, the results of the new appointment produced predictably sweeter fruits. In this parish, the 1891 Act was followed by an expansion of the department, which was to include the appointment

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1. S.L.P., 8th July, 1893.
2. S.L.P., 13th February, 1897.
3. S.L.P., 30th July, 1898.
4. S.L.P., 13th August, 1898.

of a chief Sanitary Inspector, or Assistant MOH. Bristowe at first opposed the appointment, because, at the proposed salary of £250 p.a., he thought that no suitably qualified candidate would present himself.[1] After inquiries on behalf of the Sewers and Sanitary Committee he revised his opinion. Although the first officer elected remained in the post for barely a year, moving on to a higher appointment elsewhere, when the appointment was re-advertised, there were 98 applications.[2] These were condensed to a short-list of 14, of whom 5 were subsequently interviewed: Francis Stevens (33 years) demonstrator in anatomy and tutor at the Sheffield School of Medicine; J.E. Gould, MD., DPH., MRCS., (38), medical superintendent at the Sheffield Smallpox Hospital, and deputy MOH; A. Ambrose, MD., LLD., BA., DPH., Cantab. (33), medical officer, public vaccinator and surgeon to " J" division of the Metropolitan Police, formerly assistant MOH at Leicester; J. Lawrie, CSI., (35) Sanitary Inspector to Hampstead Vestry; F.L. Bell, CSI., (36), chief Sanitary Inspector at Portsmouth. The election of Francis Stevens was decisive - he polled 76 votes to Lawrie's 48[3] - and his succession to the full medical officership on Bristowe's death in 1895 was never disputed.

Relations between the MOHs and vestries, and the extent to which the opinions of the latter influenced the amount and quality of the work of the sanitary departments, depended greatly upon the personalities involved. The impression is that although such officers as Bateson and Waterworth may well have glossed over the short-fallings

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1. Med. Off. Ann. Rep., Camberwell, 1890-91; Memorandum, p. 309-310.
2. Camberwell Vestry Ann. Rep., 1892-93, p. 246.
3. ibid.

of their own work (Bateson was taken roundly to task by the South London Press for his " flowery and unpractical" annual reports, and for his penchant for " moralising" and " poetically adorning" the same, instead of doing something towards getting the parish baths and wash-houses[1]), an officer such as Iliff, in spite of his at times over-emphasised admiration for his vestry,[2] was nevertheless a hard-working,sympathetic man who won the respect of the people among whom he worked, and whose reports indicate a steady amount of sanitary work achieved against considerable odds. After his death, Newington Vestry expressed appreciation of[3]

> ... the conspicuous ability, the constant diligence, and the unfailing courtesy with which he discharged his duties .....

Iliff had continued in private practice, and had supplemented his official duties by medical and charitable work among the poor. The latter, it was observed, would especially miss him; he had a quiet and unassuming way of attending them, and they had received many kindnesses from him: he never allowed any of his patients to go short of either food or medicine.[4] At his funeral, significantly, for he had wished for it to be quiet,[5] blinds were drawn and shops were shut along the route to the cemetery, and a long concourse of people, many of them poor,followed the procession.[6] The patience and persistence with which an officer such as Iliff fulfilled his professional duties was perhaps best expressed by himself:[7]

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1. S.L.P., 21st September, 1878.
2. ibid., 12th January, 1884,
3. Newington Vestry Ann. Rep., 1887-88, p. 7.
4. S.L.P., 30th April, 1887.
5. Somerset House, Will of William Tiffin Iliff, Jr. (d. 1887).
6. S.L.P., 30th April, 1887.
7. Med. Off. Ann. Rep., Newington, 1860-61, p. 35.

> I have felt that much of my duty really consisted in arbitration and mediation; where there are evils, they are often exaggerated on the one hand, and on the other their removal is not infrequently vehemently opposed; a little pains in explaining the true state of things, will cause prejudice and opposition alike to give way, and the result is gained with little of the original ill-feeling.

A further side-light on the MOH's task - and a further illumination of vestry attitudes - is given by the size of the sanitary departments, and the manpower at their disposal. The 1855 Act had suggested that inspectors of nuisances be appointed as the vestries thought fit, to superintend and enforce the execution of all duties to be performed by scavengers employed by the vestry, and to report the existence of nuisances and investigate complaints.[1] Camberwell appointed two inspectors in 1856, Newington and St. George each one. Thereafter the number of the inspectors at Camberwell increased steadily,to 4 in 1866, 6 in 1871 and finally to 14 in 1891. The other two parishes continued with one inspector each until the changes wrought by the 1891 Public Health Act: Newington appointed a second inspector in 1891, and a third in 1893. In 1895, the original inspector, Alfred Long, became chief sanitary inspector, with five others, one for each ward of the parish, under him. St. George had five inspectors, one of them a woman, by 1896, and in 1900 a further two female inspectors were added. These numbers were, however, far from adequate, when the population and house numbers of the parishes concerned are considered. William Rendle had expressed the opinion, in 1865, that,[2]

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1. 18 and 19 Vict. c. 120, cxxxiii

2. W. Rendle, London Vestries and Their Sanitary Work, (1865), p. 18.

> It is absurd to expect one officer, in a part only of his time, to inspect regularly and efficiently between two or three thousand houses inhabited by the poorest; to see that shifty agents do the work ordered; and that dirty, impudent, ignorantpeople do not destroy the work when done.

Manpower and its disposal was very much a central question when it came to ensuring the efficiency of a department.

The amount of work which the sanitary inspectors were expected to perform was considerable. In Camberwell, their duties were very various, not always connected with sanitary matters, and very largely supportive of the MOH's role: it is reasonable to assume that the duties of the Camberwell inspectors as described by Bristowe were very similar to those of their colleagues in Newington, St. George and elsewhere. In fulfilling the various sanitary acts, the Camberwell officers had to inquire into and report on all nuisances complained of, and on all which came to their notice during their perambulations. They were to inspect and report on all houses in which deaths from certain " zymotic" diseases, such as smallpox and typhus, occurred, and were to make systematic house-to-house visitations, and report in detail on the sanitary condition of all houses thus visited. They made out and served all notices for the abatement and removal of nuisances (the public health department did not acquire a clerk until 1889) and for the execution of sanitary work ordered by the Vestry. They sent notices to the dust-contractor whenever accumulations of dust were discovered or complained of (until 1875 when the vestry set up its own dust-collection system). The inspectors also had to follow up all these notices, to see that the works required to be done were done " to the satisfaction of the Vestry" . This included attending to the laying down of drain pipes on premises, whether ordered or merely sanctioned at the owners' request, and the superintendence of the removal

or abatement of any nuisances. In all cases where persons were ordered by the vestry or the sanitary committee to be summonsed on sanitary matters, the inspectors had to take out the summonses, collect and give evidence; and they had to take out summonses, orders and warrants under the Police Acts, as well as under the Nuisances Removal and Local Management Acts, for obstructions in in the public way, illegal removal of dust, payment of road appointments etc. Between June 1st, 1861 and 25th March, 1867, the two Camberwell inspectors had attended the Police Court for the above purposes 920 times.[1]

The inspectors were also allotted duties connected with the Surveyor's office . Where new houses were being built, the inspectors were to inquire at the Surveyor's office whether the notice required by act of parliament had been given, and if not, to serve notice to do so. They were to report to the Surveyor any case in which a new building seemed to be begun beyond the regular line of the street, and to attend to all cases where required to do so by the Surveyor, with reference to any building, crossing, etc., interfering with the parish boundary, and to perform the work connected with the definition of that boundary. Associated with these surveying activities were duties aimed at more specific regulation of certain trades. From 1857, the inspectors had to visit and report on all slaughter houses in the parish, and from 1862 on all cow- and bake-houses. They were required to attend annually before the JPs to give evidence against any cow or slaughter house licence the vestry might have decided to oppose, and previous to license-granting day to serve notices on this point to all butchers and dairymen in the parish. A number of miscellaneous duties involved the watering of the roads, the maintenance of sewer

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1. Med. Off. Ann. Rep., Camberwell, 1866-67, p. 27.

junctions and the like. In Camberwell - and this was not the case in Newington and St. George - there was also a scheme of systematic house-to-house inspections, mostly limited to the poorer homes and localities, and to all houses along the lines of newly constructed sewers.

It was perhaps hardly surprising that, given the amount of their duties, the sheer numbers of persons, buildings, and acres requiring supervision, and the paucity of their own numbers, the efficiency of the inspectors was seldom beyond criticism. Rendle's statement of the situation in St. George's, that the vestry required too much of too few, is echoed elsewhere. During the 1866 cholera epidemic Camberwell Vestry became extremely concerned at the insanitary condition of much property in the parish, and immediately deduced that the sanitary department had not been doing its work properly.[1] Bristowe, ever diplomatic, took the Vestry in hand. Two inspectors were probably adequate for the constant supervision of the poorer parts of the parish when they were first appointed, and when the parish probably contained no more than 11,500 houses; but now, in 1866, the parish contained over 16,000 houses, and the task was much more difficult. The growth of population and the increase of vestry powers meant that to maintain efficiency, an increase of staff must be made: Bristowe very much hoped that the two temporary additional appointments made in 1865 would soon be made permanent. For the present inspectors, there were two singular disadvantages: the size of the parish made it " a considerable part of a day's labour to get from one extremity of it to the other" , and the

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1. Med. Off. Ann. Rep., Camberwell, 1866-67, p. 26.

Police Court, to which frequent resort had to be made, lay in Lambeth, and was a considerable distance from the parish.[1] Beyond these practical considerations, there was, however,[2]

> ... evidently an impression on the part of many members of the Vestry that the general business of the sanitary department was done, if not in a slovenly way, at all events in a way that led to many complaints of nuisances being disregarded, and to matters which had once been taken in hand being lost sight of before they had been brought to a satisfactory termination.

Bristowe made no attempt to deny that the work of the department was not impeccably efficient. He had no doubt that carelessnesses had occurred, but,[3]

> ... there is no doubt, I fear, that even with the greatest care they must occasionally happen.

Bristowe's assessment that one inspector per 5,750 houses, or per 30,000 of population, was " probably" adequate, gives an indication of the problems of surveillance and efficiency which the public health departments faced. The tone of this report makes it clear that he was hesitant about giving even this maximum a measure of approval. Four inspectors for 16,000 houses was a far more reasonable allocation, yet it was not one which could long remain in the context of Camberwell's steadily increasing population. With a general average of about 6.3 persons per inhabited house, the 1866 ratio stood at about one inspector per 17,800 persons in Camberwell. In Newington, it was one to 85,000, in St. George, one to 55,000. An ideal ratio was, it seems, something in the region of one inspector per 12,000 of population - something like 3,000 houses.[4] This would

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1. Med. Off. Ann. Rep., Camberwell, 1866-67, p. 29.
2. ibid., p. 30-31
3. ibid., p. 31.
4. Newington Public Health and Sanitary Comm. Mins., 17th October, 1898.

allow for the inspection of fewer than 10 houses daily during the year, and would enable a department to be closely aware of what, in health and sanitary terms, was going on in the parish. Even in the most progressive London parishes, this ideal was by no means achieved by the end of the century,[1] while in Newington two inspectors were still, in 1898, struggling to contain the problems of the poorest and most thickly populated area of the parish, the wards of St. John and St. Peter, which held some 7-8,000 houses and a population of 60,000 persons each. As late at 1891, Newington had had only one inspector for its entire population of 116,000 persons, a ratio strongly suggesting that relatively little satisfactory groundwork of sanitary improvement can have been performed.

The sheer size of the areas and populations for which individual inspectors were responsible, compounded with the range of their duties, meant that the difficulty of monitoring their activities was considerable. Methods varied from parish to parish. In Newington the relationship between Iliff and the inspector, Alfred Long, developed into one of mutual trust and devotion to the cause of sanitary reform, to the extent of becoming a virtual partnership. The two men served together for thirty-one years until Iliff's death in 1887, and Iliff evidently considered Long a close friend and respected him as a colleague, for he made Long his executor, besides bequeathing him his collections of books, maps and photographs. The partnership which shared professional concern in one of London's poorest and least respectable parishes

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1. A. Wohl, in The Victorian City, ed., Dyos and Wolff, p. 607.

forged between these two men is not matched among the other sample relationships which these parishes provide. The more rapid change-over of personnel in St. George's together with the hostility of the Vestry to sanitary reform and the lesser calibre of Bateson and Waterworth, established no foundations for such a domestic pattern. Consequently, sanitary standards seem to have been even lower in St. George's than in Newington. Waldo was disgusted to discover in 1892 that there was only one notification book in existence in St. George's and even that had not been kept properly.[1] The existence of only one inspector for the 60,000 population no doubt met with his severe condemnation. Increasing the staff of inspectors was one of the first tasks Waldo set himself, and it seems likely that, as the number of the inspectorate rose, so the department came more to resemble, in methods and organisation, the larger, more professionally concerned, department at Camberwell.

The Camberwell public health department illustrates, so far as is possible, a model of the type of health department which was within the reach of most vestries at this period. In 1890, it had one inspector per 50,000 of population - a total of 14 (which with Islington's one per 25,000 was held up by Millson as a favourable comparison to the state of affairs in Newington[2]), each inspector responsible for a designated area of the parish, and answerable to the MOH. For Camberwell also, the greater honesty of the local records brings to light difficulties of discipline within the department which have been concealed by the laxer policies and sketchier records of the other two parishes. In the early years of the department these problems do not

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1. Med. Off. Ann. Rep., St. George, 1896, p. 39.

2. Newington Sewers and Works Comm., 28th October, 1889.

seem to have been recorded; possibly in the smaller department they did not exist, or were solved less publicly than in later years when supervisory bodies and the general public had developed a keener interest in the welfare of the general community, and the rights and wrongs of local government.

The controversy over the efficiency of the Camberwell inspectors in 1866 arose partly from public alarm over cholera, and partly from genuine grievance at the slow progress of improvement in the parish. There were those in the parish at this time who did not believe " in the existence of any parish officers at all, except rate-collectors" , and to whom the fate of the money collected in rates was " as much a mystery as the authorship of Junius" .[1] Within the loose framework of operation, however, much work seems to have been done by the inspectors, perhaps even too much for a great degree of thoroughness. In three fortnightly periods in 1870, the three inspectors visited totals of 713, 688 and 985 houses respectively.[2] Shortcomings and breaches of discipline start appearing irregularly in the parish records from about 1870 on. In the latter year, Inspector Cooper, who had been instructed to investigate a nuisance at Mr. Rowley's naphtha factory, was found drinking with Rowley in a nearby public house, and was deprived of a week's salary.[3] In 1885, Inspectors Sedgely and Groom made themselves conspicuous by a public quarrel which was reported in the Camberwell and Peckham Times, and which resulted in reprimands and cautions.[4] In June 1888, the Sanitary

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1. S.L.P., 16th June, 1866.
2. Camberwell Vestry Mins., 30th March, 1870; April 1870; 4th May, 1870.
3. ibid., 18th May, 1870.
4. Camberwell Sewers and Sanitary Comm. Mins., 21st August, 1885.

Committee became worried by Sedgely's unsatisfactory performance of his duties, which Bristowe regretfully attributed to mental instability; a condition of which he had some previous experience, since Inspector Cooper had been confined to Peckham Lunatic Asylum in 1874. By July, Bristowe was convinced that Sedgely was suffering from mental disease, and the inspector was retired on a pension.[1]

Apart from the minor incidents of Cooper's suspension, and a subsequently withdrawn charge of indecent assult against Stevenson,[2] the only administrative scandal of any consequence before almost the end of the period occurred in 1871. In that year it was discovered that the sanitary inspectors had for several years been in the habit of obtaining butchers' and cow-keepers' licenses for them, and of receiving gratuities for the service. This was a serious matter, for the issue of licenses and the supervision of cow and slaughter houses by the inspectors was the only existing means of ensuring that meat and milk supplies met some form of sanitary standard. The Camberwell licensing system was thus seen to be open to abuse, and the Sanitary Committee took steps to ensure that in future licenses would be issued only by the Vestry Clerk, and that the Magistrate's Clerk would not issue licenses to any of Camberwell's inspectors.[3] Neither Wood, Cooper, or Waters, the inspectors involved in this case, were still in the Vestry's employ in 1883, when Bristowe noted that no vestry was better served than Camberwell by its four current inspectors:[4]

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1. Camberwell Sewers and Sanitary Comm. Mins., 10th July, 1888.
2. ibid., 30th August, 1889.
3. ibid., 3rd October, 1871.
4. Med. Off. Ann. Rep., Camberwell, 1883-84; Report on Housing, p. 183.

> They do their duties without favour, and yet without exciting undue opposition; and by the influence they have acquired outside the Vestry secure the efficient performance of much sanitary work of which a dry numerical summary can give no notion .....

The gulf between tact and error was often narrow. Bristowe certainly admitted that[1]

> In some instances the carrying out of sanitary requirements may not have been effected so pertinaciously as might be ....

But how far this careful phrasing covered leaway which would have disconcerted more rigorous sanitary disciplinarians is difficult to assess. Bristowe had a strong instinct for compromise, particularly on issues where the facts indicated that to insist on some sanitary principle would cause distress, hardship, or resentment.[2] This kind of flexibility was a quality which Bristowe no doubt tried to instil into his inspectors and his successor. After Francis Stevens replaced Bristowe on the latter's death in 1895, it becomes clear from Stevens' angry attempts on the one hand to put down interfering lay sanitary reformers in the parish,[3] and on the other to apply more precisely the techniques of health reform he had learnt for his DPH., that the progress of improvement in Camberwell was not as smooth as Bristowe's reports generally seem to show.[4]

At all events, the policies of Camberwell's Sanitary Department were stormily brought into question in 1898 over the premises of the Westbury Dairy Company. The formation of the LCC in 1889 had brought

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1. Med. Off. Ann. Rep., Camberwell, 1883-84; Report on Housing, p. 182.
2. Med. Off. Ann. Rep., Camberwell, 1888-89, pp. 110-111.
3. Med. Off. Ann. Rep., Camberwell, 1897-98, pp. 12-15.
4. ibid.

a supplementary staff of Council inspectors to bear on the health problems of London, somewhat to the irritation of the still highly anti-centralist local bureaucracies. In May 1898 an LCC inspector called at the premises of the Westbury Dairy Company, and found an uncovered pail of milk standing in a covered gateway, into which a stable and a water closet ventilated, and in which was lying a quantity of manure.[1] The inspector cautioned the manager, George Fellowes, several times subsequently without effect, and eventually instituted proceedings for the exposure of milk to the risk of contamination against the Council's regulations. The report of the Council's Medical Officer (11th May, 1898) supported the views of the inspector, stating that the place was wholly unsuited to be a milk-shop. The case was heard at the Lambeth Police Court on 18th May and 2nd June; its principal interest was that Fellowes' solicitor called two Camberwell inspectors, Heath and Stevenson, as witnesses for the defence.

The assessment of the rights and wrongs of the case is somewhat complicated. The LCC inspector stated that the shop had been registered for many years (in fact for 30),[2] and that he had complained repeatedly of manure being kept there. Inspector Stevenson stated that he visited the premises on average once a week, and saw no objection to milk being kept there. He knew that the manure was cleared regularly; the closet had been put in by order of the Vestry; and there were six ventilators in the stable besides the doors. He agreed that it would not be proper to keep milk in pans near the manure, but pointed out that the Westbury was a wholesale enterprise,

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1. Camberwell Vestry Mins., 15th June, 1898. The only surviving LCC record of this incident is a brief account supplied by Camberwell Vestry from the minutes of Lambeth Police Court: See LLC Public Health Committee Papers, Vol. 6, July-Dec., 1898; 7th July, Paper No. 8.

2. Camberwell Vestry Mins., 6th July, 1898.

where the churns were kept for a short time with their lids on. Heath could see nothing wrong, and considered the place a proper one for storing milk. Fellowes stated that no milk was actually stored in the passage: the churns were rolled out of it into the yard, where the men were served.[1] The magistrates, however, considered that the charge had been proved, although the fine imposed on Fellowes was a nominal one of five shillings.[2] But the methods of the Camberwell inspectors were placed in doubt, particularly since a visit of the Camberwell Sanitary Sub-Committee to the dairy confirmed that they were in many respects insanitary, and that the magistrates decision was justified.

The case occasioned much publicity locally. Fellowes complained of the way in which it had been conducted, claiming that his premises had been visited " by all manner of people, dozens of them, for over a week". This had caused consternation in the locality, and was very harmful to trade: " the wildest canards ... running rampant amongst the people".[3] Yet Camberwell Vestry treated the guilty inspectors with relative leniency. Although the LCC was strongly urging their dismissal,[4] Heath and Stevenson were severely reprimanded and suspended for a fortnight. Francis Stevens took no part in the affair: he was neither brought in to censure the erring officers, nor reprimanded for not supervising their actions more closely. Camberwell Vestry was clearly out to protect its own against the subversive influences of centralism. When, six months later, the LCC produced a charge of corruption over Christmas gifts against

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1. Camberwell Vestry Mins., 25th June, 1898.
2. ibid.
3. ibid., 6th July, 1898.
4. ibid., 29th June, 1898.

the two inspectors, the Vestry after careful investigation replied with dignity that it deplored that the Council[1]

> should have thought fit to augment the charges it had already made against Inspectors Stevenson and Heath by a statement framed against them of such a nature ....

This the Council apparently recognised as determined opposition, for they eventually withdrew the charge, but only after an interval of months which registered the withdrawal as a grudging defeat.[2]

The Vestry personnel involved in public health concerns were not limited to those attached to the public health departments. The work of the MOH and his colleagues might at times be complicated by the situation in departments outside their own. The vestries' administrative responsibilities included the roads, local sewers and dust disposal, and the work of many of the departments inter-related. The Vestry surveyor, where there was one, usually had his own department, staff and concerns, but came into conjunction with the MOH and health department over housing and sewerage matters. Thus, the Camberwell surveyor, J.C. Reynolds, was able to refer to Bristowe in one of his reports as " my valuable co-partner in Sanitary Improvement in the Parish" .[3] When, at the very end of the period, Camberwell established a bacteriological department the better to detect infectious disease cases, it was an independent department over which the MOH had no control.[4] The disinfecting department did, however, come under the supervision of the MOH, although the existence of a depot superintendent relieved the former from too direct an involvement in

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1. Camberwell Vestry Mins., 25th January, 1899.
2. ibid. 22nd March 1899.
3. Camberwell Surveyor's Ann. Rep., 1860-61, p. 8.
4. Med. Off. Ann. Rep., Camberwell, 1899, p. 15.

the practical work of disinfection. Disinfecting departments in fact became important subsidiaries of the health departments, generally from the 1870s. Camberwell obtained a disinfecting machine in June 1871;[1] Newington erected a gas-heated disinfecting apparatus in 1873;[2] St. George had obtained one in 1867, but Waldo discovered it to be worn out in 1892, and there is no telling how long it may have been so.[3] The fetching of articles to be disinfected, and the process of disinfection were entrusted to "supernumeraries" : in Camberwell in 1871, to two or three, according to pressure of work,[4] but by 1895 to four regular " disinfecting men" with a fixed weekly salary.[5]

The work of the public health departments was principally concerned with the detection and control of disease and its causes, rather than with the actual improvement of the parish as exemplified by the planning and construction of new sewers, for instance. Roads and sewers belonged more accurately to the surveyor's department. Both surveyor's and public health came under the supervision of the same committee of the vestry, and their expenses were included in the budget of that committee, which was funded from the parish rates. The estimated expenses of Camberwell's Sewers and Sanitary Committee for 1876-77 ran as follows:[6]

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1. Med. Off. Ann. Rep., Camberwell, 1871-72, p. 50.
2. Med. Off. Ann. Rep., Newington, 1873-74, p. 88-89.
3. Med. Off. Ann. Rep., St. George, 1892, p. 31.
4. Med. Off. Ann. Rep., Camberwell, 1871-72, p. 50.
5. Camberwell Vestry Mins., 16th April, 1895.
6. Camberwell Sewer and Sanitary Comm. Mins., 14th March, 1876.

		f	s	d
Repayment of loans		3,016	13	4
Interest on loans		2,487	19	2
Jobbing and general works		1,500		
Removals of dust		3,400		
Proportion of expenses, etc.		1,200		
Proposed urinals		250		
Contingencies		300		
TOTAL		12,154	12	6
Less estimated balance				
in favour of the rate		744	8	4
	=	11,380	4	2

The exclusion of the wages and salaries bill from the estimates seems to have been a not infrequent practice, for it is also excluded from the Newington estimates for 1896-97, (Table 6) which are otherwise extremely detailed. The vestries' financial year normally ran from Lady-day t Lady-day. The estimates of Camberwell's Sewers and Sanitary Committee for the same year, 1896-97, are interesting by comparison, although far less detailed, and providing a less complete picture.[1] For 1896-97, the Committtee envisaged an expenditure of £2,345 17s 5d on salaries (Surveyor and staff, MOH and staff, one clerk). The weekly wage bill for two gangers,twelve flushers, eleven gulleymen, three disinfecting men, five urinal cleaners, two lavatory attendants, fourteen timbermen, fourteen stagemen, one bricklayer, one labourer, one clerk, one yardman and three watchmen, amounted to a total of £5,388 5s 8d per annum, with an allowance of £14 14s 4d for extra men. For the rest, allowances

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1. Camberwell Vestry Mins., 18th March, 1896.

were made of £10 for apparatus and tools, £2,860 for materials, £1,700 for "sundries", and £2,000 for contingencies. There was a deficit of £5,059 in the year 1895-96, which brought the total estimated expenditure to £18,404 17s 5d.

The condition of London vestry finances at this period is far from easy to elucidate. The Metropolis Local Management Act laid down no particular format for the presentation of vestry accounts, so that every authority presented its accounts differently, and frequently in much abbreviated form.[1] The only satisfactory information provided by these accounts concerns total annual expenditures, precepts ("precepts" - funds drawn from the rates to supply the MBW and LSB) and loans. The chance survival of departmental estimates such as those quoted above permit a rare glimpse of the minutiae of vestry expenditure. The findings of Janet Roebuck in respect of Lambeth and Wandsworth finances closely parallel the pattern found in Camberwell, Newington and St. George-the-Martyr. In all these parishes, total vestry expenditure mounted steadily from the 1860s, despite fluctuations caused by heavy borrowing to finance sewer works in that decade, and later loans arranged to meet extraordinary expenditure (on buildings and equipment). With due allowance for price fluctuation, and apart from loan repayments and the precepts of the MBW to 1889 and the LSB, the pattern of vestry "general purpose" expenditure seems to indicate that spending on services, maintenance and non-capital-demanding improvements steadily increased.[2] Certainly, the gradually expanding detail of the vestry reports, the increasing number of sanitary works performed, and the increasing professionalism of vestry services (dust collection and disinfection, for instance) suggest that the local authorities were far

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1. J. Roebuck, Urban Development in 19th Century London (1979), p. 89.
2. Figure 17.

from neglecting their responsibilities simply in order to keep down rates. Indeed, taking account of the fall in prices of some 40% after 1870, it can be seen that the sanitary authorities' expenditure, in real terms, was increasing at a greater rate than, for instance, Figure 18 would suggest. Although in the early years of vestry administration frequent changes in the format of reports and variations in their content seem to reflect the uncertainties of an inexperienced administration, the increasing scope and quality of documentation in the years after 1870 indicate a growing professionalism which evidence from other local authorities confirms.[1]

The particular relation between vestry financial policy and the work of the sanitary departments is no easier to assess. As far as the daily work of the sanitary officers was concerned, it seems that vestry budgeting was generally adequate: there is no evidence, either in the MOHs' reports or in their journal (Public Health), of discontent on this score, nor any indication that the MOHs felt the scope of their activities limited by financial restraint. Facilities for disinfecting and for bacteriological examination, for instance, were given to them in the 1870s and later 1890s respectively, without undue delay. No figures for actual sanitary expenditure as a proportion of the total general purposes budget are available for either Camberwell or Newington, but the item "sanitary expenses" does appear in the St. George account between 1875 and 1896, and the expenses of the Infectious Diseases Notification Act are listed from 1890-96. When compared to total general purposes expenditure in these years, it can be seen that "sanitary expenses" formed a small proportion of the whole, even though the figure leaps up with the passing of the 1891 Public Health Act and the appointment

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1. Roebuck, op. cit., pp. 99, 113.

of Waldo in 1892.[1] It is not possible to break down the sanitary expenses into their component parts to explain the fluctuations in expenditure, since there is no relevant information in the vestry records, nor does it seem likely that epidemics were the determining factor in extraordinary expenditure, since this is by no means consistently coincident with epidemic peaks, and expenditure in connexion with the Notification Act, while following a broadly similar curve, by no means matches the peak expenditure of the 1890s. The figures available for St. George cannot, however, be taken as in any way representative of normal vestry patterns, since the parish was very poor (it played an active part in the campaign for equalisation of the metropolitan poor rates in the 1870s). Where the total general purposes expenditure of Camberwell rose from £7,372 15s 3d in 1857-8 to some £186,400 in 1898-9 and £245,967 in 1899, and that of Newington from £8,296 to £95,105 and £104,586 in the same period, St. George's rose from £10,652 in 1859-60 to £51,924 in 1899. Savings from the general purposes rates, which varied from a few pounds to several thousand pounds during the period, seem to have been invested against future capital expenditure, or deficit on running expenses. St. George's was apparently the only one of the three parishes to miscalculate the total rate/expenditure balance; the vestry's account was overdrawn in 1879-80, 1880-81, 1894-95 and 1899.[2]

With respect to capital investment, whether in equipment or manpower, it is easier to discern a more mercenary attitude, although once again individual vestries varied. The long struggle to obtain public baths and wash-houses which was played out all over London during the last three decades of the century provides one instance of this.

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1. Figure 18.
2. All figures quoted are taken from the annual statement of accounts printed in the vestry annual reports of the respective parishes.

Another is probably the relatively small number of sanitary inspectors employed across London. Although Bristowe, for example, had little difficulty in increasing his staff of health inspectors at regular intervals, their ratio in proportion to population was still small. Henry Jephson, a hostile witness, claimed that the vestries crippled sanitary work in London by their refusal to employ an adequate staff;[1] yet the MOHs' reports bear witness that an enormous amount of sanitary work was performed. There is little doubt that more inspectors would have resulted in more work, and possibly in hastening the process of public education in sanitary matters which was no inconsiderable factor in successful long-term sanitary improvement. The question may rather be whether the vestries could in fact afford, among their numerous obligations, to employ more men. Until further detailed research has been done on vestry incomes and finance, and on the extent to which the vestries practised under-assessment of rates, this issue will remain unclear. The relative poverty of parishes such as St. George and Newington may possibly account for their small inspectorates. The heavy investment of borrowed capital in providing public sewers in the early years of their existence may also have disinclined vestries for large investments later; the evasion of the baths issue until the 1890s is a case in point. The vestries cannot, however, be accused of misplaced parsimony in times of epidemic emergency; during the 1866 cholera epidemic, for instance, they rose to the LGB's reccomendations nobly, and were lavish in their provision of medical visitors, extra inspectors, medicines and disinfectants. On this occasion the South London Press remarked that the comparative immunity of South London

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1. Jephson, op. cit., p. 308.

from the disease must in a great measure be due to the precautions so promptly taken by the parochial authorities.[1]

The reputation of the London vestries, both contemporary and historical, has been far from good. Lay reformers such as Charles Booth and Octavia Hill, and pro-centralist administrators and politicians, were at the time eager to emphasise the deficiencies of the vestry system. There can be little doubt that the former often failed to appreciate the social and administrative problems involved in social and sanitary improvement, or that the latter sought for every shred of evidence which might serve their case at the expense of locally elected authorities. Equally, vestry parsimony and negligence provided a convenient scapegoat for evident social evils. The sordid details of the affairs of Clerkenwell Vestry, for instance, featured in the evidence before the RCHWC, can be seen as confirmation of all criticism of the vestry system. Yet the difficulties experienced by Sir Charles Dilke in finding a vestry whose negligence measured up to his expectation, and so could adequately fulfill the part which he intended it to play in improving the prospects for Harcourt's London Government Bill, indicate the exaggerated, not to say uninformed, nature of much criticism.[2] It also seems likely that as vestry services increased their effectiveness, and as general standards of cleanliness and public facilities rose, so the public tended to adapt its own standards, and to forget the level of conditions which had previously been found acceptable. Certainly, the MOHs who represent, in the nature of their responsibilities, the only professional voice on conditions in 19th century London, considered that the

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1. SLP 11th August, 1866.

2. Dilke Journal, B.M. Add. Ms. 43937 f 179; Dilke to Harcourt, 12th Nov., 1883, 15th Nov., 1883, 19th Nov., 1883; B.M. Add. Ms 43890 f 250,252, 254,256. This is fully related by J.H. Davis of Wolfson College, Oxford, to whom I am most grateful for the above references, in an unpublished paper.

vestries had achieved a great deal. Reginald Dudfield, for instance, thought them "much abused bodies" who, "in little more than a quarter of a century", had made London, "the best paved, the cleanest, the best lighted, the best drained and (may we not also say?) the healthiest great city in the world".[1]

The improvement in sanitary conditions in London which, despite all odds, was achieved by the vestry employees in the latter half of the nineteenth century, owed little to particular public interest. Popular concern for sanitary improvement followed much the same pattern as private concern for the illness of individuals: it was only in times of crisis that criticism (or action) surmounted general apathy. Except in such crises, the voice of public concern was rarely heard on sanitary issues. The cholera epidemic of 1866 and the "Bitter Cry" sensation of 1883 mark the only two, very temporary, peaks of public concern. Lack of interest greeted health bills in parliament, vestry elections, public lectures on sanitary subjects, and sanitary defects in the home and general environment.[2] Although the local press in South London reported the activities of local government there are no signs of a press campaign for a more vigorous approach to improvement, nor does criticism of the vestries appear in more than the occasional oblique reference. The South London Press, whose editor and founder, the Scottish Radical James Henderson, was a strong supporter of preventive medicine, gave maximum coverage to subjects of general and particular sanitary interest (the paper was, for instance, notably in favour of compulsory state vaccination, and poured scorn on the anti-compulsory vaccination lobby), and lamented the general want of public interest in health matters.[3] In general terms, therefore, "public opinion"

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1. J.R. Dudfield, Two Sanitary Addresses (1889), p. 8.
2. Med. Off. Ann. Rep., St. George, 1873, p. 2; Roebuck, op. cit., pp. 169-172; SLP, 30th April, 1870.
3. SLP, 30th April, 1870.

exercised very little influence on local health policies, and on the occasion when it sought to do so in 1883-4, the preventive medical authorities, realising that criticism and suggestion were largely founded on ignorance of the realities, simply waited for the sensation to die down, and continued to rely on their own judgement and experience in the practice of social and sanitary improvement.

A distinction can be drawn between the influence of general public opinion, and the impact of particular interest groups who, while not having any real claim to represent the opinion of the community as a whole, ground a particular axe in opposition to the preventive authorities. In one instance (local opposition to the building of MAB hospitals when general opinion insisted on the need for more[1]), it can be seen that such interest groups could make a considerable impact on the execution of preventive policy, supported by public opinion; more commonly such groups seem to have run on rather different tracks from the preventive officers, and to have affected the nature of their work only indirectly. Neither the anti-compulsory vaccinationists nor the philanthropists succeeded in making any but the smallest dent or deflection in established preventive policy at the local level, and it seems probable that general public apathy was a considerable factor in this result: there was no ground-swell of local indignation and support to lend force to their campaigns. Public apathy and ignorance were, indeed, the principal elements shaping the nature and direction of preventive medical work in the nineteenth century.

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1. See above, p. 76.

CHAPTER III

DISEASE : PATTERNS, PREVENTION and CONTROL

The local evolution and practice of disease prevention policies provides the central theme of the work of the MOHs. Although the Society of Medical Officers of Health provided general guidelines and some degree of contact between individual officers, parish affairs in London seem to have been conducted to a large extent in isolation.[1] The effectiveness of the health department depended in a degree on external factors, but the tact and ability of the MOH and his inspectors determined its real efficiency. Fundamental to the successful implementation of preventive policy was a knowledge of the ecology of the parish, and of the incidence and geography of disease there. The principal concern of the health departments was epidemic and endemic infectious disease, including tuberculosis but excluding syphilis. Affections with a more specifically personal history, such as heart disease and cancer, remained outside the province of preventive medicine. It was many years, however, before coherence of policy became general, or the bases of successful preventive enterprise fully recognised. Even after the Infectious Diseases Notification Act became law, John Simon observed that it was very imperfectly recognised in sanitary administration that an authority set to diminish the diseases of the community must begin by possessing itself of exact knowledge as to the local distribution of diseases.[2]

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1. R.O. Dudfield, Two Sanitary Addresses (1889), p. 3-5.

2. John Simon, English Sanitary Institutions, (1897,ed), p. 250.

In the early years of preventive medicine, the task of the London MOHs was complicated by the scope of their responsibility, and by the poor communication which existed between themselves and the Poor Law Medical Officers, whose local knowledge of disease and its habitat was, by the very nature of their responsiblity, much more detailed.[1] The inadequacy of the information system up to 1889 becomes clear from Bristowe's comparison of case returns coming to his notice immediately before and after the Notification Act came into force:[2]

Cases of Infectious Disease Reported to the MOH, 1889-90.

	April-October, 1889	October, 1889-March, 1890
Smallpox	0	2
Diphtheria	45	149
Typhoid	17	58
Scarlet Fever	170	504
Puerperal	1	3
Erysipelas	0	90

Thus, in the first seven months of the year ending 25th March, 1980, a total of 299 cases of infectious disease came to the notice of the department, and contacts followed up accordingly, but in the last five months of the year 810 cases were registered; a significant widening of the sphere of the department's effectiveness.

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1. W. Rendle, London Vestries and Their Sanitary Work, (1865), p. 23; see above, p. 60

2. Med. Off. Ann. Rep., Camberwell, 1889-90, p. 121.

Wrong diagnoses also affected the department's efficiency. Although medical experience of most of the infections was much greater than today, the lack of a sure bacteriological foundation for clinical identification permitted to the individual medical man an independence of judgement which was not always helpful to the preventive authorities. The judgement of the latter with respect to particular infections may not have been generally infallible, but probably tended to err rather on the side of safety than otherwise. The typhus outbreak discussed by Bristowe in his 1883 report on sanitary conditions in relation to the housing of the very poor, illustrates the way in which dissension over the identification of an infection could jeopardise the taking of any precautionary measures at all. The identification, causation and hence control of typhus and typhoid was a major area of disagreement in nineteenth century medicine, in spite of the work of Snow and Budd. In the Camberwell outbreak, the disease was identified as typhus by the MOH and by the medical men concerned with the initial cases. The practitioners involved with the secondary cases did not, however, admit the disease to be typhus, with the result that all attempts at isolation or removal to hospital, or disinfection failed.[1]

The elucidation of the local geography of infectious disease in a parish also depended to a great extent, up until the Notification Act and to some degree thereafter, upon the goodwill and cooperation of the general public. At the British Boys' School in Abbey Street, Bermondsey in 1871, the school treasurer, in an effort to assist the health department, asked his pupils to hold up their hands if they had

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1. Med. Off. Ann. Rep., Camberwell, 1883-84; Report on Housing, p. 176.

smallpox at home. About 24 did so, and the treasurer took down their names and addresses with a view to inducing their parents to keep them from school. Bermondsey's MOH, Dr. Parker, felt, however, that circulars and most efforts at achieving this object were of no use: all his own endeavours to induce parents not to send children who might carry infection to school had been fruitless.[1] Certainly, the education of the public to an appreciation of disease as a preventable evil rather than an unavoidable act of God, proved one of the hardest tasks of the preventive authorities,[2] as well as being one of the most fundamental. As long as the belief in disease as a natural event persisted, it fed the resentment against official intrusion which existed among a wide section of the public, and led to disasters such as that at Donington in Lincolnshire, where a virulent scarlet fever epidemic was unleashed by the refusal of local public opinion to permit the village medical practitioner to disclose to the sanitary authority the presence of infection in the families he attended.[3]

Incomplete knowledge of the local geography of disease naturally diminished the value of preventive measures aimed at the control of a disease. From the earliest years of the London health departments' existence, it was recognised that disinfection was a crucial factor in control. Whichever theory of disease causation was adhered to, the value of the disinfection process was not in question. Bristowe early recorded that the cleansing, white-washing and repair of houses was an

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1. South London Press, 11th February, 1871.

2. J. Hole, The Homes of the Working Classes (1866), p. 2-3; H. Jephson, The Sanitary Evolution of London, (1907), pp. 247-248.

3. PP 1884-85 xxxiii, pp. 10, 78; above, p. 192-3.

important item in the labours of the sanitary staff, because it removed poisonous emanations and influences engendering fever.[1] The development of disinfecting machines in the later 1860s extended the effectiveness of prevention in this respect, for it meant that clothing, bedding and household linen could be purified officially and effectively.

The acknowledged importance of disinfection among sanitarians did not make the process easier to implement in practice. Although the Sanitary Act 1866 gave the authorities the power to disinfect premises after dangerous infectious diseases, up until 1889 only a minority of cases were dealt with, since a large number of non-fatal cases never came to their notice. Further, in a not inconsiderable proportion of the cases that did become known, the persons immediately concerned objected to the interference of the vestry, to aviod which they obtained from their medical attendent a certificate that all necessary disinfection had been effected.[2] In many such cases, Bristowe claimed to know that no actual disinfection had been even attempted, or had been done in a perfunctory and useless manner.[3] Further action on the part of the vestry had, however, been stopped. In the densely peopled houses of the poor, there were moreover inherent difficulties in disinfection with any degree of efficiency, which were often so great as practically to neutralise the effect

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1. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 34.
2. Med. Off. Ann. Rep., Camberwell, 1883-84; Report on Housing, p. 172-3.
3. ibid.

of disinfection. The difficulty of removing the sick into hospital, an essential complement to disinfection among the very poor, constituted a further limitation on effective prevention. Even with a thoroughly efficient disinfection system, it was almost impossible effectively to check the spread of infectious disease among the poor before the local authorities were granted more extensive powers of removal in 1891.[1]

Disinfection also became something of an issue in respect of public relations. Again because of legislative complexities, the vestries could compel landlords to strip off wall-paper and to lime-wash rooms or houses in which infection existed, but they had no power to compel the restoration of premises to their previous condition. Consequently, property was apt to be left in a miserable looking state after disinfection, a serious grievance to the tenant, and proof to the casual visitor of official neglect.[2] Methods of disinfection changed during the period, but were not altered in their essentially destructive character. In the mid-1890s, Camberwell adopted a system of spraying perchloride of mercury onto the walls and ceilings of affected buildings.[3] This brought complaints of staining from the London School Board, countered by the health department with the reply that the affected schools, when inspected, appeared to be in a dirty condition in any case.[4]

In spite of the disadvantages, and of the inadequacy of measures taken without full notification records, the policy of disinfection and the following up of contacts early established itself as the only

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1. Public Health (London) Act, 1891, 38 and 39 Vict. Ch. 55, c. 66,67.
2. Med. Off. Ann. Rep., Camberwell, 1883-84, p. 173.
3. Camberwell Vestry Ann. Rep., 1895-96, p. 225; Med. Off. Ann. Rep., Camberwell, 1897-98, pp. 18-19.
4. Camberwell Vestry Ann. Rep., 1895-96, p. 225.

satisfactory form of prevention that could be exercised directly over the infectious diseases. The method retained its importance throughout the period, since even with the extension of bacteriological science from the 1880s immunology remained in embryo, and the utilisation of bacteriology in the detection of specific organisms such as diphtheria developed only in the 1890s. The confusion of ideas on disease causation did not significantly affect the application of disinfection procedures, or so it seems. Given inadequate notification until at least 1889, after which there came increasingly tight coordination of the information system, the energy of the MOHs and their inspectors cannot be regarded as having been dissipated in the energetic pursuit of environmental improvement which so largely occupied them at this period. The environmental approach to prevention, if essentially indirect, was fundamental in creating a secure base for the eventual establishment of the more specifically bacteriological methods, and in shaping among the general public an increasing receptiveness to the introduction of public health measures, even where the premises on which they were based were not fully understood.

ENVIRONMENTAL AFFECTIONS

The relationship between disease and environment was the earliest explored by the nineteenth century public health movement. The fashionable anti-contagionism of the early years of the century[1] produced a great interest in the natural context of disease, and varied emphasis on atmospheric, sanitary and social conditions as causative influences.

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1. E.H. Ackerknecht, " Anticontagionism betwen 1821 and 1869" , Bull. Hist., Med., xxii 1948, no. 5, p. 565-567.

Disease theory apart, the deterioration of the physical environment brought about by rapid urban development and population increase was sufficient in itself to cause concern.[1] The emergence of the miasmatic theory of disease, espoused by that most conspicuous of the early sanitary reformers, Edwin Chadwick, did much to focus reforming energies on improving environmental conditions. An obvious and immediate target, these were to remain a principal pre-occupation of socially concerned reformers of all kinds during the rest of the century.

Although the miasmic theory achieved a wide popular influence, among medical men and those interested in science the predominance of contingent contagionism - a moderate central position on the causation issue - established the acceptability of the view that there were several different types of diseases. Most admitted the contagious character of syphilis, smallpox and measles; it was the uncertainty surrounding the behaviour of plague, yellow fever and cholera which qualified belief in contagion as a sole cause.[2] Equally, the influence of environmental factors - particularly " filth" : inadequate sanitary facilities, dung heaps, deficient drains, etc. - could only be assumed to be one among many factors, and connected with some but not all diseases. Contingent contagionism, and the refusal to admit one original cause of all disease, was very general among the medically trained sanitarians of the mid-century among whom the early MOHs were numbered. The open approach which these men adopted to the problem of disease control was a source of deep irritation to the " lay" sanitary reformers, notably Edwin Chadwick and Florence Nightingale,

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1. e.g., W.H. Blanch, Ye Parish of Camerwell ,(1875), p. 7-8.

2. Ackerknecht, op. cit., p. 587.

whose pure miasmatist views would admit of no deviation from filth as the fundamental cause of all disease, and the resultant strain between the two opposed groups produced conflict at the higher official levels.[1]

The environmental causes of disease received their greatest emphasis in connexion with fever - the collective term used of both typhus and typhoid at this period. Although the work of William Budd in drawing distinction between the two was becoming known and accepted by the mid 1850s, diagnostic confusions remained. Bristowe, for instance, distinguished between the " true typhus" , propagated by contagion but spreading with virulence among the crowded inmates of unwholesome and closely packed dwellings, and typhoid fever, " little or not at all catching" and developed almost solely as a consequence of bad drainage, filth, over-crowding and other like conditions.[2] The two diseases were perfectly distinct, although until recently confounded together, and " even now are sometimes difficult to separate".[3] Aware of the distinction, and despite the incorrect attribution of the cause of typhus,[4] Bristowe outlined two different types of preventive action: typhus might be arrested by improving the habits and homes of the poor, typhoid altogether prevented by remedying the defects on which it depended for survival. The control of both lay in the proper regulation of sanitary and environmental conditions.

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1. R. Lambert, Sir John Simon (1963), pp. 521-3.
2. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 30-31.
3. ibid.
4. Typhus was not discovered to be a louse-bourne infection until 1909.

The acceptance of the connection between both fevers and the sanitary environment did not establish general guidelines for diagnosis or preventive action for many years to come. In 1879 David Davies, the highly competent MOH for Bristol (1866-86) and friend of William Budd,[1] recorded that within the medical profession there were two schools of widely differing views on the subject of infectious diseases,[2]

> .... views which frequently as regards sanitary action run in parallel grooves; but which occasionally display a dangerous divergence.

The immediate background to Davies' explanation of the current state of disease theory lay in the major Bristol typhoid epidemic of 1879, during which preventive operations according to Davies' belief in the specific origin of the disease had been seriously hampered by the widespread belief in its non-specific cause, and by the social resistance to preventive measures which this reinforced. In Davies' view, the extent of the epidemic was an illustration of the danger of adhering to the school which believed in the spontaneous generation of disease by dirt, overcrowding, etc. (a belief " extensively held by the clean middle classes of England") and in the infectious nature of some diseases, such as typhus, typhoid and cholera, once they had been generated.[3]

The second school of thought, to which Davies himself belonged, believed in the spread of disease

> ... by means of (as yet) invisible seeds or germs which are portable ...

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1. M. Pelling, Cholera, Fever and English Medicine, 1825-65 (1978), p. 254.
2. D. Davies, Typhoid Fever in Bristol in 1879, (1879), p. 3.
3. ibid.

The views of this school had become in the last few years, more generally accepted than formerly,[1] and Davies believed that their wider acceptance was important in order that the priorities of prevention might be firmly established. If the belief in specific infection was in each case correct, then the first duty of the public health officer in the event, of, for example, a typhoid outbreak must be to seek out and destroy the germs of disease. Where the belief in non-specific contagion prevailed valuable time might be lost in removing harmless manure heaps and persecuting the lower animals, while the true source of the disease was overlooked.[2] Davies himself executed all sanitary measures on the basis of specific origin, although he freely acknowledged that comparative success was not noticeably apparent. This he attributed, with justification in view of the experiences of George Millson in St. George's to[3]

> ... the impossibility of always discovering the intercommunication of families in a large and very mixed community by whom efforts are too frequently made to mislead the inquirer.

Although the control of " fever" was one of the earliest aims of the nineteenth-century sanitarians, and was apparently one of the easiest to achieve by the simple expedient of enforcing urban cleanliness, it was nevertheless not fully attained by the end of the period. Outbreaks of both typhoid and typhus continued to occur, although increasingly it seems that cases had their origins outside the parishes rather than in the locality. It is, however, difficult

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1. Davies, op. cit., p. 4.
2. ibid., p. 5.
3. ibid.

to obtain a clear picture of the relative influence and local geography of either disease over the latter half of the century. Case statistics are unreliable until at least 1889, because of shortcomings of notification, and even thereafter are qualified in their usefulness by imprecision (little or no correlation between recorded cases, the date of their occurrence or their geographical location), and by continuing doubt over the accuracy of diagnosis in an uncertain percentage of cases. In this respect, there was not only the possible confusion between typhoid and typhus in the early stages of illness - a confusion which became increasingly frequent as typhus became rarer[1] - but also the alternative attributions of diarrhoea, dysentery and food-poisoning.

In Camberwell and Newington, where annual case statistics of disease deaths from 1857 were preserved in the MOH's annual reports, some indication of " fever" fluctuations may be obtained. " Fever" however, remains the sole description for typhoid and typhus in Camberwell until 1891, when the category was replaced by "typhoid" although "diarrhoea and dysentery" with an over five and an under five age distinction was introduced in 1865. In 1897, the category " typhoid" was altered to " enteric" . In Newington, the category changes are more frequent. The 1855 denomination was simply " typhus" ; in 1861 this was changed to " fever" ; in 1871 the latter was divided into two: " typhus" and " typhoid and enteric " ; and in 1874 a third category was added " simple continued fever" . In both parishes graph illustrations of the pattern of " fever" across the period are possible (Fig. 1, Fig. 2), and from these some idea of the decline in diseases of " fever" character can be obtained.

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1. PP., 1887, xxxvii, p. 635

The declining curve of " fever" diseases is much more pronounced for Newington than for Camberwell, although the epidemic totals in individual years, such as 1855 and 1864, are much higher. From 1872, however, the downward curve is steady, except for 1889. In Camberwell, the downward trend does not become marked until after 1882, although in both parishes 1881 stands as an epidemic peak, with 29 " fever" deaths in Newington and 44 in Camberwell. The Newington annual totals are not, however, broken down geographically as the Camberwell figures are, although the relevant parish disease maps exist for the years 1890-99, giving the location of cases of disease in the parish. The " fever" graphs for the Camberwell districts enable us to see that, Dulwich apart , deaths from the " fever" diseases were fairly evenly distributed, although it is impossible to discover any more precise allocation of deaths in relation to the socio-economic condition of the area in which they occurred. There is no indication that " fever" deaths in Camberwell and Peckham were concentrated in the poorer areas; indeed, the curve for St. George's ward would suggest that the denser concentration of poor property and population did not produce a significantly higher incidence of " fever" deaths.

The gradual decline of " fever" is related both to improvements in public health and living standards and to the increasing expertise of the health departments in following contacts and in tracing and eliminating the sources of disease. Major progress in control did not come until the 1870s, however, and the 1860s were notable for the resurgence of " typhus" in London after an absence of five or six years. This epidemic began in 1862 and continued in the capital for some years, the duration varying from parish to parish. In

Camberwell, it was not until 1871 that the disease slackened; in Newington 1867 seems to mark the end of the extraordinary epidemic peaks. The impact of the epidemic appears to have been greater than was perhaps merited. Bristowe pointed out that although mortality was sufficiently high, and the prevalence of the disease sufficiently great, to constitute a real typhus epidemic, the mortality due to the disease, relative to population, was " much smaller than the statements might lead one to suppose".[1] He estimated the fever mortality for London as a whole to be 0.1416% of all deaths in 1864; for Camberwell 0.072 in the same year. Further, the epidemic character of the " fever" diseases in these years was due essentially to typhus deaths occurring over and above the normal yearly average of typhoid deaths: if the former could be separated from the latter, the mortality ascribed to typhus would be sensibly reduced.[2]

Perhaps the greatest breakthrough in the control of typhoid itself came in 1871, when Dr. Ballard, the MOH for Islington, traced the source of a serious scarlet fever outbreak to contaminated milk. A link between the spread of typhoid and milk distribution had been noticed in 1853, but it was not until 1871 that any special notice was taken of this connexion.[3] After 1871, however, repeated instances at Glasgow, Armley, Manchester, Wolverhampton, Brighouse and Marylebone confirmed the importance of milk in transmitting infectious disease and the monitoring of milk supplies became one of the first priorities in the event of any unusual prevalence of typhoid, diphtheria or scarlet fever.[4] The addition of public analysts to the vestry staff

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1. Med. Off. Ann. Rep., Camberwell, 1864-65, p. 23.
2. ibid., p. 23.
3. Davies, op. cit., p. 6-7; R. Thorne, Diphtheria (1891), p. 151-152.
4. Med. Off. Ann. Rep., Newington, 1873-74, p. 90; Med. Off. Ann. Rep., St. George, 1875-76, p. 14; PP 1883, xxviii p. 633.

at about this time made the checking of milk and water relatively quick and easy, and probably encouraged local awareness of this facility. By 1900, for instance, St. George's were routinely checking four items of foodstuffs on the outbreak of enteric fever: water, milk, milk substitute and ice cream.[1]

The contamination of milk supplies with typhoid infected water was one means for the transmission of the disease and generally that of greatest local importance, producing a notable concentration of cases. In many instances, however, more or less isolated cases of typhoid arose from infection outside the parish. This was particularly the case in South London (as in East London) during the autumn months when the end of the hop-picking brought many working Londoners back to the capital from the fields of Kent, where they had in general enjoyed both the fellowship of holiday labour and life in conditions at least as primitive as those they endured at home. Those returning from the seaside or from the country also brought the disease with them at times and the likelihood of this occurrence was generally recognised by the MOHs.[2] These seasonal movements of population back into the London parishes, and the disease they occasioned, were predictable, and the preventive authorities therefore forewarned. Less predictable were cases imported in the wake of the tramping fraternity, or those which must have bespeckled London as a result of the activities of the costers. Although some pattern was given to the former by the winter opening of the Night Refuges from November to about April,[3] complex local and personal patterns of wandering

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1. Public Health and Sanitary Comm. Mins., St. George, 24th September, 1900.

2. Med. Off. Ann. Rep., Camberwell, 1895-96, pp. 198-199; Public Health and Sanitary Comm. Mins., Newington, 13th November, 1899.

3. Raphael Samuel, "Comers and Goers", in Dyos and Wolff (1973), Vol. 1, p. 142.

existed too diverse for absorption by the preventive authorities, and the development of many cases was unforeseen. Many " tramps" kept a room in London, for instance, simply visiting the country when so inclined.[1] Mayhew remarked on " the disease and fever which mark the course of the vagrants wheresoever they go" , adding that " tramp-fever" was of a typhoid character.[2]

Isolated epidemic outbreaks of typhoid of a local character could also be traced to less specifically controlable causes than the contamination of milk or of drinking water. The isolation of the micro-organism of typhoid in 1884[3] permitted more wide-ranging investigation of the sources of the disease, and the detection of channels of infection other than milk supplies. In September, 1899, the rising number of typhoid cases in London presaged an epidemic which continued for the rest of the year. Although common to nearly all London, the highest incidence fell in the eastern and southern districts. George Millson noted that in quite half the cases which occurred between mid-September and mid-November (i.e., from the beginning of the epidemic to just after its peak), the friends of the patients attributed the disease to the eating of shellfish - in a significant number of cases to mussels " of Dutch variety" .[4] The dangers of contaminated shellfish were realised for perhaps the first time; the greater prevalence of infection in the eastern and southern parishes probably reflecting the readier availability of shellfish in the central London markets, and their importance as a food of the poor. At

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1. PP 1866, xxxiii, Appendix II, p. 504,
2. Mayhew, London Labour (Dover, ed. 1968), Vol. 3, p. 376.
3. By Georg Gaffky (1850-1908), pupil, and successor to Koch at the Berlin Institute of Infectious Diseases.
4. Med. Off. Ann. Rep., Newington, 1899, p. 247.

any rate, the number of cases of typhoid notified in Newington during the period of the epidemic there (the ten weeks from that ending October 7th to that ending December 30th), were far in excess of the number the parish was accustomed to,[1] totalling 57.[2]

The Newington disease maps, although simply an annual account, and therefore giving no indication of the chronology of cases, are of some importance in revealing areas susceptible to particular diseases. The typhoid maps, which run from 1890 to 1899 (although the description of the disease is altered to " enteric" in 1895) illustrate something of the character of the disease in the parish. (Maps 7-15) The very scattered nature of most of the notified cases is a pointer to the extent to which the disease was brought in from outside the parish, and a tribute to the efficiency of local preventive measures in curbing its further spread. It is also possible that cases identified as typhoid were in fact food-poisoning or dysentery mis-diagnosed as typhoid.[3] In only a very few instances do a grouping of cases - two or more in close proximity - suggest that the source of the disease might be local, as in the 1891 grouping of six cases in Townley Street, the three in Heygate Street close by the Jewish Schools in 1892, or the three in Deans Buildings in 1894.

The collation of all the Newington " typhoid" cases for the period 1890-99 onto one map provides some greater insight into which localities might be termed " fever" localities,(Map 6). In certain streets, in certain groups of buildings, it appears that the local population was by reason of occupation, domestic, or travelling habits, more likely

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1. Med. Off. Ann. Rep., Newington, 1899, p. 247.

2. Public Health and Sanitary Comm. Mins., Newington, 13th November, 1899; 3rd January, 1900.

3. I am grateful to Dr. Charles Webster for this suggestion.

to fall victim to typhoid and related diseases. Thus, the block of houses which lay between Amery Place and Kinglake Street in the south-east corner of the parish (a block coloured light blue - poor - by Booth in 1889) experienced eight cases of the disease in those nine years; there were also eight in the western block of Deans Buildings (mauve = mixed poor and comfortable population); six in the group of houses in Brandon Street which lay opposite Short Street (poorish); five in Heygate Street opposite the synagogue (good, ordinary earnings); nine about the junction of Hillingdon Street and Heron Street (good, ordinary earnings). The area of the the Surrey Gardens Estate, and the block of streets between Great Dover Street and Deverall Street (an area close about the Tram Stables) also seem to have had a greater susceptibility. However, these impressions are to some extent misleading, and should not be taken too seriously: in all the above instances, there were years during the period when no case of typhoid occurred in the locality at all (see maps).

The Newington typhoid maps are further revealing when taken in conjunction with the collated maps for tuberculosis (1896-99) and bronchitis, pneumonia and pleurisy (1896-99). Both these latter groups of diseases are closely connected with environmental conditions. The spread of tuberculosis is facilitated by overcrowded housing, poor nutrition and by social intercourse; the bronchitis group have their root in damp and poor house construction; bad ventilation affects both. The connection between these two diseases and the home environment was not fully made until the mid 1890s, as the first dates of the Newington "death" maps show.[1] (Neither tuberculosis nor bronchitis, etc., were notifiable at this date). The recording of these deaths

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1. See also J.F. Payne "Tuberculosis as an Endemic Disease" Trans. Epid. Soc., 1892-93, pp. 1-36.

in map form is significant, both of the importance of these diseases as a cause of death and of the realisation that something might be achieved by mapping them. (Maps 17-24).

The late appearance of tuberculosis - that is, tuberculosis of the lung, also known as phthisis or consumption - among the diseases of immediate concern to the preventive authorities was due to its long established endemic charcater, and to the debates which existed as to its causation. Concern over the spread of tuberculosis arose early in the nineteenth century with the rise in deaths occasioned by the greater concentration of population in towns. The West Country physician John Hogg asserted that while life expectancy in London had risen 100% in the period 1741-1811, the increase in deaths from apoplexy and consumption were drawbacks to town life.[1] The great increase in tuberculosis, " that most formidable disease" , was the most serious obstacle to an otherwise universal improvement in the value of life: he claimed that the disease was currently (1837) responsible for one death in four, or 26% of all deaths; in the seventeeth century it had caused one death in eight, in the eighteenth, one in six.[2] In the event, the first analysis of deaths by the Registrar-General revealed that identifiable consumption accounted for 15.5% of all deaths in England and Wales.[3]

Although the proportion of all deaths due to tuberculosis fell steadily from the early nineteenth century,[4] it remained one of the most important single causes of death in the Victorian period. The reasons for the decline in tuberculosis mortality are uncertain.

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1. John Hogg, London as it is, (1837), p. 62.
2. ibid., p. 64.
3. PP., 1839, xvi, p. 80.
4. J. Brownlee, An Investigation into the Epidemiology of Phthisis in Great Britain, Medical Research Committee Reports, No. 18, (1971), p. 9; see also T. Mckeown, The Modern Rise of Population (1976), p. 56.

Improvements in nutrition have been indicated as a crucial factor,[1] but housing, habits, overcrowding, income, climate and occupation have repeatedly been cited as factors affecting phthisis morbidity and mortality, and the role of individual items has not been assessed with any precision.[2] Sir Robert Philip's assessment of the factors contributing to the decline of the disease remains perhaps the most satisfactory, in view of the uncertain nutritional evidence, and the difficulties involved in correlating in any convincing way what is known of standards of nutrition in the period 1700-1900 with the mortality curve of tuberculosis in the same period. Philip accepted that the decline in tuberculosis mortality was due in part to a variety of factors of general application, such as the slow but sure rise in the standards of living and education, and health legislation, but he emphasised two special factors, of which the former had application to the nineteenth century, the latter to the twentieth: the diminuition, by elimination of susceptibles, of an epidemic of tuberculosis which had lasted 200 years or more, and the operation of the anti-tuberculosis campaign.[3] The high percentage of children reacting positively to the tuberculin test in the early days of its application in the 1950s,[4] would certainly suggest that immunity to the disease by early exposure had reached a sufficiently high level to be a weighty factor in the decline of tuberculosis in the nineteenth century.

Although the steady decline in mortality from tuberculosis became apparent from 1838, with the registration of deaths and their cause,

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1. T. Mckeown, op. cit., p. 141.
2. H.D. Chalke,"Some Historical Aspects of Tuberculosis" , Public Health Vol. LXXIV, no. 3, October, 1959, p. 93.
3. C. Clayson, " Sir Robert Philip and the Conquest of Tuberculosis", British Medical Journal, iii, 1957, p. 1505.
4. ibid.

anxiety over the disease as a major killer did not diminish, remaining sufficiently deep to generate a widespread reaction when the Anti-Tuberculosis Campaign was eventually launched in 1898. Nevertheless, the extent to which tuberculosis was very largely a preventable disease was recognised many years before Koch's identification of the tubercle bacillus in 1882. The case of tuberculosis illustrates both the helplessness of the preventive authorities as long as they had no authenticated idea of the cause of the disease and its behaviour, and how, even when this knowledge had been achieved, little could be done until the public mind was in a condition receptive to public action.

Until the identification of the tubercle bacillus (later renamed mycobacterium tuberculosis), ideas on the causation of tuberculosis were very largely based on the evidence of its behaviour. Since tuberculosis is an airborne disease with long-term effect both in its infectiveness and in its relatively slow progress and outcome, its chief epidemiological character to the observer is one of " inexorably progressing household epidemics".[1] The inference that the disease, or at the least the tendency to the disease, is hereditary is thus easy to draw, and in the nineteenth century one of the most widely held opinions as to the cause of the disease was that it was essentially hereditary in habit. John Simon, in his introdution to Greenhow's Sanitary Papers, remarked that,[2]

> ... the tendency to tubercular disease is one which transmits itself from parent to child; and thus, if in any one generation the disease be artificially engendered or increased, that misfortune does not confine its consequences to the generation which first suffers them.

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1. J.M. Mackintosh, Housing and Family Life (1952), p. 84.
2. PP., 1857-58, xxiii, p. 288; see also John Hogg, Observations on the Prevention of Consumption (1860), p. 17.

The influences which might artificially engender or increase tuberculosis were many and various, as may be gathered from Bristowe's vignette of the disease in 1858. Although highly qualified medically, and generally a man of positive reactions to new developments in the fields touching preventive medicine, Bristowe was interestingly less clear-sighted about the causes of tuberculosis than his contemporaries Rendle and Bateson, both of whom had extensive first-hand local experience of the disease in St. George's parish. To Bristowe, deaths under the head of phthisis and allied diseases were due to[1]

> ... a peculiar unhealthy form of constitution... Many of those who are subjects of this affection inherit the tendency to it from their parents, and not infrequently from their parent's (sic) vices, ... But many, especially among the poor, acquire it, not only as the penalty of a dissipated course of life, but by a long continued inadequate diet, over-work, exposure to the weather, and unwholesome habitations. Phthisis is a disease which will probably always prevail; but it is one that may frequently be prevented, or delayed, or ameliorated, by guarding against those habits of life, and obviating those defects of constitution, on which its development in a great measure depends.

The contrast between Bristowe's analysis of the cause of tuberculosis, his opinion that the disease was endemic and ineradicable, and the views of the St. George's medical officers is perhaps significant, and may suggest something of a difference between two groups or types of MOH: on the one hand, the men of Bristowe's calibre, highly qualified medically, and distinguished in their own fields, aware of the work being done in contemporary recognised centres of research, both English and international, and well disposed towards such work, and on the other a humbler group, less academically proficient or aware, but in closer touch with every-day reality, and with perhaps a greater personal experience of the circumstances in which disease operated among

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1. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 29.

London's population. The distinction between the two groups is not of seminal importance, but may help to explain why certain men accepted or were suspicious of certain theories or pieces of research.

In the case of tuberculosis, it is clear that some medical men were aware of the importance of environment rather than heredity in the transmission of the disease long before the isolation of the bacillus and the study of its behaviour. William Rendle, for instance, was very much concerned at the high tuberculosis mortality in St. George's, and his own observations led him to doubt the current heredity orthodoxy in respect of its causation. Early in 1858, Rendle commented in respect of tuberculosis that it[1]

> ... has but recently become prominent how very preventable a disease this is.

a remark which suggests that his views had been influenced from outside. He continued with the observation that the causes of the disease were " no doubt" hereditary, but that " it must of course be produced before it can be bequeathed" . His own opinion was that tuberculosis was most generally produced by ignorance or disregard of " the natural laws of health" . He drew attention to the fact that of every 100 deaths in the Guards - who represented picked lives - 67 were due to consumption. The principal causes of the disease were obvious: sleeping in ill ventilated rooms, over-crowding and bad ventilation. Rendle's own experience both in visiting the sick and poor,and the complaints which he received as MOH, was of the sickening offensiveness in the mornings of houses which had been tightly shuttered all night.[2]

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1. Med. Off. First Quarterly Report, St. George, 1858, p. 2.
2. ibid.

The awareness of some MOHs of the preventability of tuberculosis did not however, mean that preventive action was possible, even in the localities for which these men were responsible. The hopelessness with which the disease was regarded before the upsurge of public interest in the 1890s is reflected in the small attention which it receives in the MOHs' reports. Bristowe does not mention it again after his 1858 disquisition; Francis Stevens does not mention it before 1898; there is no reference to it in the Newington reports before 1898. In St. George's alone is any consistent concern shown, notably about the extent to which the disease was preventable but not prevented. Rendle early observed that consumption was always troublesome in the parish; in 1857 there were some 40 deaths from the disease in both the spring and summer quarters.[1] Furthermore, the list of streets and courts where these deaths mostly occurred pointed repeatedly to filthy dwellings, overcrowding and absence of ventilation as causative factors. By far the most tuberculosis deaths occurred in William Street, Webber Row, Hunter Street, Clarendon Street, Surrey Street, and George Street.[2] Rendle was also quick to point out that the " great underlying tendency" to tuberculosis in the parish produced a greater fatality in other diseases, such as measles, whooping cough, bronchitis and pneumonia which, " in the ordinary way and in fairly sound constitutions" , would rarely prove fatal.[3]

Rendle's successor, Henry Bateson was equally aware of St. George's tuberculosis problem. In 1860 he reported a total of 210 deaths, representing 15% of the total mortality, for the year April 1859 to March

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1. Med. Off. Third Quarterly Report, St. George, 1857, p. 2.
2. Med. Off. First Quarterly Report, St. George, 1858, p. 2.
3. Med. Off. Supplement to the Annual Report, 1857, p. 2.

1860: a serious mortality since, " we have the power of very largely preventing the disease". [1] Bateson's view of the disease at this date appears in line with the artificially engendered/inherited tendency thesis supported by Simon:[2]

> It (tuberculosis) is but the phasis of one form of scrofula, which, being a disease of nutrition and development, can easily be generated. And, unfortunately, the evil does not end with the individual in whom it originated: from him this morbid disposition is propagated to his offspring, and thence onwards, through future generations..... In hundreds of our unventiliated and over-crowded work-shops, in hundreds of our foul localities and filthy habitations, is this disease engendered, not taking into account those trades which, from their nature, necessarily produce consumption.

Tuberculosis was particularly rife among tailors and milliners, " solely from the unhealthy state of their workrooms". [3]

Bateson's views appear to have undergone some refinement in subsequent years. He evidently paid attention to the reports of the health department of the Privy Council, as did Bristowe (who also undertook several investigations for the department), for he referred in 1869 to Burdon Sanderson's experiments in inoculating with tuberculous material which had been published there in the previous year.[4] In 1869 also, he noted that air saturated with the breath of a consumptive patient was " fraught with danger" , and that indoor life was rendered still more prejudicial by want of ventilation. The apparently almost universal English prejudice against fresh air remained a constant grief to the MOHs. Bateson seized a further opportunity to remonstrate against this when remarking on the confusion of consumption and bronchitis

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1. Med. Off. Ann. Rep., St. George, 1859-60, p. 13.
2. ibid.
3. Med. Off. Ann. Rep., St. George, 1859-60, p. 13.
4. ibid., 1868-69, p. 34; J.B. Sanderson, " The Communicability of Tuberculosis by Inoculation", P.P., 1867-68, xxxvi, pp. 525-567.

in their later stages. Consumption was a most fatal disease he concluded, yet it came within the list or preventables.[1]

> This, people will not believe; anyhow, they continue to act as if they did not. The disease owes its rise from breathing impure air, and from unwise marriages .... Who may count the thousands of deaths brought about by closed doors , closed windows, fire board, list and sand bags? ... Nothing can compensate for the want of fresh air; its purity and plenteousness are absolutely necessary for health.

Bateson and Rendle appear not to have been too much of a minority interest in their connection of tuberculosis with the breathing of impure air. Henry Bowditch, in a discussion of the nature of the disease in 1864, came to the conclusion, after reference to John Hogg and the French expert Gueneau de Mussy, that consumption was not contagious in the accepted sense but that it might be infectious, in that[2]

> ... by long attendance of the closest kind, by inhaling the breath of a phthisical patient, by living in the phthisical atmosphere ... and in general by a neglect of hygienic laws during such attendance, the health may be undermined and phthisis set in.

In the 1890s, the MOH for Glasgow observed that tuberculosis had for long been associated in its prevalence with the breathing of impure air;[3] a phrasing which suggests a general history that well pre-dates the discovery of the tubercule bacillus. Indeed, the fact that the discovery of the bacillus passes without comment in the contemporary reports of the three MOHs (Bristowe, Iliff, Waterworth) may indicate a feeling that the discovery was not important enough in terms of prevention to merit any attention: the existence of the bacillus did little but confirm what had been believed by a number of medical men for some time, that tuberculosis was infectious in that it was produced

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1. Med. Off. Ann. Rep., St. George, 1873-74, p. 13.
2. H.I. Bowditch, Is Consumption Contagious?, Boston, (1864), p. 13.
3. A.K. Chalmers, The Distribution of Tuberculosis Diseases in Glasgow, Glasgow (1897), p. 3.

by close association with a sufferer. Bristowe's omission is perhaps the most curious, although from his reactions to the discovery of the cholera vibrio, he belonged to that school of medical men who viewed the new findings of bacteriology with scepticism.[1] The failure of Iliff and Waterworth to report Koch's findings is less curious: Iliff certainly belonged to that group of MOHs whose minds were firmly on the parish pump, and who had little or no time for medical research except as it directly affected their preventive role. Waterworth on the other hand seems simply to have been too negligent to take any interest in affairs other than those which forced themselves on his attention.

The gradual process by which tuberculosis became a preventive responsibility may, however, bear only small relation to the mixed responses to bacteriological discoveries. If, as seems probable, we may assume that the infectiousness of tuberculosis was well understood, if not universally accepted, some 30 years before the discovery of the tubercle bacillus, the failure of preventive medicine to undertake experimental surveys of the type pioneered by Robert Philip in the St. Giles district of Edinburgh in 1887 has to be explained; as does the fact that tuberculosis did not become a notifiable disease until 1911. The explanation, and the reason for the slow assimilation of tuberculosis into the category of officially preventable diseases, was perhaps more social than medical. The reluctance of medical orthodoxy to accept Koch's bacillus may explain why tuberculosis was not included among the notifiable diseases in 1889; it does not explain why minimal attention was paid to the disease by the MOHs until the formation of the Anti-Tuberculosis campaign.

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1. See C. Clayson, op. cit., 1503.

The fundamental problem relating to the prevention of tuberculosis lay in its established endemic character. Unlike smallpox, typhoid or even scarlet fever and diphtheria, tuberculosis does not have any dramatic external symptoms, and its progress is one of slow deterioration over a period of years, rather than of rapid dissolution in no more than a few weeks. The insidiousness of tuberculosis gave it a very special position among the diseases endemic in nineteeth century society. Since it was not essentially a disruptive disease, it came to be accepted with a fatalism which increased the arduousness of later attempts at eradication. The physical manifestations of the disease - the paleness and hectic flush, the langour, the delicacy - became the essence of a leading Victorian concept of beauty, while the long decline of the consumptive towards inevitable dissolution constituted a not uncommon theme in literature.[1] The ordeal of the tuberculosis victim, his nobility, patience and endurance, and the tightening of family bonds in response to the disease, were a notable theme of a three volume French memoir of the mid-century which achieved great popularity, being translated into English and reprinted several times.[2] Diaries and memoirs confirm the impression from literature that tuberculosis became woven into the culture of Victorian society in a way which, while it did not make the disease itself any less terrible, it did in many ways render it socially acceptable. Francis Kilvert, on at least two occasions, demonstrates both the romanticization and the intricate social context of the disease, as for instance:[3]

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1. H.D. Chalke, "The impact of tuberculosis on history, literature and art", Med. Hist., 1962, 6, p. 301.

2. P. Craven, Le Recit d'une Saeur, Paris (1867); trans. Emily Bowles, (London), 1867.

3. Francis Kilvert, Diary, 9th June, 1872.

> I went to see Mrs. Prosser at the Swan, a young pretty woman dying I fear of consumption which she caught off her sister, Mrs. Hope ... It was a sad beautiful story. She was warned not to sleep with her sister who was dying of decline and told that if she did she herself would probably be infected with the disease. But her sister begged her so hard not to leave her and to go on sleeping with her that she gave way.

And again:[1]

> At Whitty's Mill I found dear Hannah Price dying. Dying of consumption in the same chair set in the same chimney corner where her sweet sisters Margaret and Mary had sat waiting so long and patiently for death.

Small wonder then that Walter Rose, born in a tuberculosis-infested Buckinghamshire village in 1871, spoke of the "perpetual secret fear" of the disease which hung over the population.[2] In spite of private griefs and fears, however, it seems that society at large was so inured to the presence of tuberculosis that any movement for its prevention, and the diminuition of the toll of deaths, could not be activated by the medical profession without some spontaneous popular dynamic.

Although Koch's discovery of the tubercle bacillus in 1882 confirmed the infectiousness of the disease, it was not until the very end of the century that elementary hygienic precautions to be observed by tuberculosis sufferers were publicised, or instructions issued to those with care of the sick as to measures necessary to prevent the spread of the disease. This delay in following through the consequences of bacteriological discovery is attributable in part to

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1. Francis Kilvert, Diary, May Eve, 1876.
2. Pamela Horn, The Victorian Country Child, Kineton (1974), p. 178.

the mixed reception which the bacillus received. It seems very likely that social sanctions also played their part. Up until the formation of the National Anti-Tuberculosis Campaign under the sponsorship of the Prince of Wales in 1898, there is no indication of any attempt by the London medical officers to publicise the need for such precautions as the disinfection or destruction of the expectoration of the consumptive, or the importance of good ventilation specifically in connection with tuberculosis. Immediately upon the formation of the campaign, which was launched amid great publicity and with great emphasis on the prevalence and destructiveness of the disease, recommendations for its prevention powered from the preventive authorities. Once the subject of buterculosis had been brought out into the open, its discussion licensed by no less a person than the Prince of Wales, it was no longer socially taboo and could be discussed explicitly rather than in a romantic sense.

The energy with which the MOHs embarked upon tuberculosis prevention once the infectiousness of the disease had been publicised, and the cause made popular, was consistent with their general record. The figure of 70,000 tuberculosis deaths per annum publicised by the ATBC, let alone the hundreds of thousands of associated cases, obviously made a deep impression. Local death totals were also of importance: the Camberwell annual total stood at about 600 in 1898,[1] while Newington's annual death-rate was so high as to place it "very near to the worst areas" of London.[2] Although the national death-rate from the disease had been halved during the previous 50 years, the same progress had not been made in London, where the mortality in many areas

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1. Vestry Ann. Rep., Camberwell, 1898-99, p. 57.

2. Med. Off. Ann. Rep., Newington, 1898, p. 177.

remained "more or less stationary".[1] George Millson thought that the still serious London problem of overcrowding was largely to blame for this, the implication being that this inhibited the operation of the factors at work in the rest of the country, which he assumed to be:[2]

> ..... improved methods in relation to the public and private health, the better feeding of the people by higher wages, and let us hope to the improvement in the habits, exercise, and cleanliness of the community generally.

Two years previous to the opening up of the subject of tuberculosis, Millson had instituted a set of death maps, similar to those already in progress for the notifiable diseases, for tuberculosis and for bronchitis and allied diseases (Maps 17-24). The bronchitis maps were closely relevant to the tuberculosis maps, for besides the not infrequent confusion of the two, they often operated in association so that although the immediate cause of death might be bronchitis, the essential factor was active tuberculosis.[3] Taken separately, year by year, each map means little, but if the information they contain is put together so that an overall picture of the two diseases is obtained, and this picture is related to the poverty map of the parish laid out by Charles Booth in 1889, the almost universal incidence of these afflications becomes clearer (Map 16). Cases of both tuberculosis and bronchitis were broadly scattered across the parish. As might be expected, the areas illustrated by Booth as being "well-to-do, middle class" show a relatively small incidence of either disease, with the exception of a

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1. Med. Off. Ann. Rep., Newington, 1898, p., 177.

2. ibid.

3. John Hogg, Observations on the Prevention of Consumption (1860), p. 41; Med. Off. Ann. Rep., St. George, 1873-74, p. 13.

group of houses in the Walworth Road, at the extreme south-east corner of the parish, where a dozen deaths from tuberculosis occurred (one in 1896, five in 1898, six in 1899) in company with three from "bronchitis" (one in 1898, two in 1899). In these houses, however, there were no cases whatsoever of fever during the period 1890-99 (Map 6). Scattered cases of tuberculosis did occur with fair regularity among the well-to-do, as Map 16 makes clear, although the sample of middle class streets in Newington is really too small for any reliable interpretation.

The tuberculosis-bronchitis incidence was heavy in the streets described in pink (fairly comfortable, good ordinary earnings), and mauve (mixed, some comfortable, others poor). The bronchitis density seems indeed to have been heaviest in the predominantly mauve streets which make up the central eastern area of the parish, although for both bronchitis and tuberculosis the buildings which lay between the Primitive Methodist Chapel, East Street and Orb Street, provided a fertile ground. Cases cluster here, against the light blue of "poor, 18/- a week for a moderate family", and density is reinforced by further cases of both diseases in the neighbouring Townley Street and Hard Street, which were even poorer - dark blue, "very poor, casual earnings". Two other areas in the parish echo the condition of these streets, both predominantly dark and light blue. The first is the rectangular area which is bounded to the north by the well-to-do frontage of the New Kent Road, by Sayer Street and Lion Street to west and east, and by a slim, nameless alley to the south which cuts the area off from the apparently comfortable houses which complete the street line south to Deacon Street. The Sayer Street and Lion Street margins

of this area are perhaps significant in that they are coloured black - "vicious, semi-criminal": they certainly suggest that the area had a rookery character of the kind that so distressed the philanthropic movement, although how the area came to achieve this character is difficult to determine. Perhaps it was the one block of old houses left after the cutting of the New Kent Road, which somehow escaped redevelopment.

The third area of this type is the largest in the parish, and also seems to have the most explicable origins. It lies to the north, beyond the New Kent Road, between the London Chatham and Dover railway line to the west and the spaciousness of the yard of the Weights and Measures Office and the Children's Recreation Ground to the east. Again, the survival of old, poor class housing seems likely. The streets involved are Tiverton Street, Tarn Street and Uxbridge Street, off which run a number of blind courts, no doubt of the type favoured for their secrecy by the poorest classes. A fourth area of interest, socially and epidemiologically, lay in the north-west of the parish, in the triangular area between the boundary with St. George-the-Martyr and Newington Butts. Here the deaths from tuberculosis and bronchitis etc., fall into three clear clusters. The largest of these is what may be called the Dante Road cluster, comprising Dante, Holyoak and Longeville roads, coloured pale blue (poor, 18/- per week) by Booth, and inhabited very largely by costers, a notoriously close-knit social group, with an intense community sense. There is also a notable cluster in Churchyard Row, where good ordinary earnings were the standard by Booth's reckoning, and another at the upper end of St. Gabriel's Street, again a "poor" quarter.

The difficulty with the Newington disease maps is that, in the three parish context, they have to be viewed in isolation. None of the Camberwell disease maps appear to have survived; and only one example exists for St. George, that depicting the incidence of infectious diseases in the parish in 1895.[1] As far as the environmental diseases are concerned, however, it is possible to compare the tuberculosis, etc., map for 1896-99 with the fever density map for 1890-99 in an attempt to achieve some further elucidation of the unhealthier localities in the parish. The fever map certainly confirms that some areas were more susceptible to disease generally than others. The Surrey Gardens Estate, for example (where the high incidence of diphtheria caused concern in 1892-96)[2], does seem to have had a greater disease density than the surrounding area, as did the block of streets bounded by Otto Street to the north, Royal Street to the east, the parish boundary to the west and Hillingdon Road to the south. The eastern half of Hillingdon Road and particularly the group of houses that lay to the north-east corner of its junction with Heron Street, also seems to have been vulnerable. Patterns of greater case density are visible also in the other sections of the parish, east of the Walworth Road, and north of the New Kent Road. The Townley Street area again stands out, as does Brandon Street, and the Sayer Street/Lion Street block. The poor area of Amery Place, off Kinglake Street, in the south-east corner of the parish, appears as constant refuge of fever, although its tuberculosis/bronchitis density was not remarkable. In the northern third of the parish, it is again the Tarn Street block which stands out, but so also does the block south of Upper Bland Street, which contained the tram stables, and the "comfortable" vicinity of Surrey Square.

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1. Southwark Collection, Map 218.
2. see below, p. 276-277.

The Newington disease maps do not in themselves give a great deal of information about the patterns and incidence of disease in the parish, and this is particularly the case with the tuberculosis and bronchitis maps, which provide only a death record, leaving no indication as to the number of active cases still present in the parish. The complexities of disease transmission also mean that the maps must be treated with circumspection. There is no certainty that tuberculosis was significantly affected by the quality of the housing in the parish. The social habits of a family, which could vary from street to street (although there are indications that the poorer an area the greater the sociability and the less trammelled the social intercourse of the population) were probably of cardinal importance. Factors such as the number of school-age children in a family might also be significant: in the often close and confined conditions of schooling at this period, tuberculosis might easily be spread through the classroom to a number of families previously unaffected by the disease. The deaths registered on the maps relating to " bronchitis, pneumonia and pleurisy, etc." are probably more significant of the quality of housing conditions, but even so, the vast majority of these deaths occurred among infants,[1] and may therefore reflect on the standards of mothering as well as on housing. As far as fever is concerned, by this period it seems likely, as the scattered cases recorded on the maps indicate, that most cases were connected rather with the nature of employment than with the continuing presence of the infection in a particular locality. The very process of the registration of cases ensured to a variable degree that some form

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1. PP., 1839, xvi, p. 76.

of preventive measures were taken to prevent the spread of the disease to involved persons, or to the wider neighbourhood. Certainly, the Newington maps would show that the fever dens which so alarmed the early sanitary reformers were no longer widely in existence.

2. THE GREAT EPIDEMICS.

The principal concern of the London public health departments in the nineteenth century was the monitoring and control of epidemic diseases and their causes. The diseases which came under this heading at this period can be divided into two groups. On the one hand were those like typhoid, typhus and cholera, which had a common environmental and domestic habit connection, on the other, the contagious group: smallpox, scarlet fever, measles and diphtheria. Preventive efforts were mainly directed to these diseases up to the 1890s because they were the most dramatic and apparent causes of human distress and economic wastage, as well as being the diseases most amenable to contemporary preventive methods. The two diseases of major epidemic concern were smallpox and cholera. These were of outstanding preventive concern because they affected both adult and juvenile populations, and were of much greater epidemic potential than scarlet fever, etc., which principally affected children, or than typhoid and typhus which were mainly local in incidence, and because of their high fatality rates. The roles which smallpox and cholera played in the disease history of the century were very different, as the two diseases were very different in their nature, but in their impact and epidemic scale they were similar, and significantly more serious than the other epidemic diseases.

SMALLPOX

The importance of epidemic smallpox in the nineteenth century has been very largely overshadowed by the dramatic novelty of cholera. Cholera, moreover, made only relatively rare appearances in Europe, being in this geographical context an epidemic disease only. Smallpox was continuously present, swelling to the proportions of an epidemic every four or five years, and was in many ways a very familiar affliction. It had been present more or less continuously since the Middle Ages at least, and, with the disappearance of plague from England in the 1720s, had become the principal epidemic affliction of the eighteenth century. Since Jenner's discovery of vaccination in the 1780s, smallpox had been counted among the most preventable of diseases, and the possibility of its total eradication had danced alluringly before the eyes of those interested in the alleviation of human suffering.[1] The achievement of this end proved far more difficult than the early champions of the operation had allowed. It was soon apparent in England that even so evidently beneficial a measure was not easily imposed upon the public. Although smallpox did begin to decline in England during the nineteenth century the reasons for this decline are not clear-cut. In the first part of the century the disease strain was relatively mild,[2] and later the growing expertise of the preventive authorities was crucial in containing channels of infection. At all events, it seems certain that the role of mass vaccination in diminishing the incidence of smallpox was of contributory rather then seminal importance.

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1. L. Wilkinson, " Smallpox and the evolution of ideas on acute (viral) infections" , Med. Hist., 1979, 23, p. 1.

2. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 30; Med. Off. Ann. Rep., St. George, 1868-69, p. 34.

The history of smallpox in nineteenth century London differs somewhat from its history in the rest of the country. Although the epidemic pattern of the disease changed little up to the last decades of the century, epidemics still occurring every four or five years with the disease continuously present in between, it was apparent that the metropolis was beginning to suffer more heavily than the provinces.[1] The attempt by the Metropolitan Asylums Board to cope with the problem by providing more smallpox hospitals in the capital met with strong opposition. The MAB's solution to this problem, which took the form of the establishment of hospital ships for the isolation and care of smallpox patients beyond the bounds of metropolitan London, also went a long way towards solving London's smallpox problem. The number of cases was cut considerably in the localities, while the number of deaths from smallpox fell away to nothing outside the hospitals. While other large cities such as Sheffield, Manchester and Bristol experienced smallpox epidemics in the 1890s, and the disease was active on the Continent, London retained a high degree of immunity.[2]

The programme by which London achieved relative immunity from smallpox depended to a considerable extent on notification under the 1889 act, and on the efficiency of the hospitalisation system. From the very earliest years of their responsibility, the medical officers had worked on the principle that the only really efficient way to cope with the epidemic diseases was by the isolation of patients, the tracing of contacts, and disinfection of premises, clothing and bedding. Before the introduction of notification, the success of this

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1. PP., 1884-85, xxxiii, p. 238-9.

2. G.M. Ayers, England's First State Hospitals, 1867-1930, (1971), p. 87.

system was severely qualified by the limited number of cases which came to the officers' attention. The diligence with which the officers worked the principle, however, was a measure of their dedication, and the emergency system which efficient parishes such as Camberwell evolved and put into action as soon as an outbreak of smallpox threatened is further testimony of the danger which the disease was still thought to represent to society. Vaccination was regarded as a broken reed by the health departments from their very earliest days. Up to the great epidemic of 1877, the failure of the Vaccination Acts was regarded with annoyance, but, it seems, without much anxiety, since the prevailing smallpox strain was apparently a mild one. Bristowe, ascribing the decline of the disease to vaccination, designated it as, '' at the present time ... a comparatively rare and mild disorder". [1] Deaths from smallpox were an irritation: " were vaccination universally adopted, as it ought to be, throughout the country, (smallpox) would become for this land a disease of the past". Bristowe was not unaware of the latent dangers of the disease, nor of the inadequacies of vaccination itself.[2]

> ... unfortunately, many persons yet, with all the bigotry of ignorance, refuse to avail themselves of the boon which is offered them; and the disease consequently smoulders still amongst us, and occasionally bursts into a flame, from the ravages of which even the protected may not wholly escape.

The sense of this observation was to be confirmed by the terrible epidemic which began in 1871, and which opened a half century during which smallpox showed itself to have reserves of strength which put it far outside the category of a " rare and mild disorder" . Before

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1. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 30; also, Med. Off. Ann. Rep., St. George, 1868-69, p. 34.

2. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 30.

the revelation of 1871, however, the disease appeared to be fairly under control, and the epidemic of 1859-60 was the most serious experienced. In Camberwell, smallpox receives regular mention in the medical officers' reports and it is evident that although vaccination was in itself no business of the vestry employees, being the business of the Poor Law organisation, the health departments were, in the cause of prevention, busily advertising the benefits of vaccination. As smallpox began to spread towards the end of 1858, the Camberwell health authorities published a handbill warning the parishioners of this, and urging the need for vaccination. They further extended the ordinary systematic returns of house-to-house visitation to include the number of unvaccinated persons in each house, so as to be better able to press the operation on those who had neglected it.[1] Towards the end of 1859, after the parish had experienced a number of outbreaks of smallpox, Bristowe instituted the examination of children attending the various charity schools in the parish in order to ascertain the extent of vaccination and to apply it where it was necessary.[2] This type of action was taken again in 1863 when smallpox began to be " unusually prevalent" , and was extended to cover the national schools and various others as well.[3] In 1866 alarm was again being felt at the state of vaccination, for Mr. Shields drew the attention of the Vestry to the need to secure a more general carrying out of vaccination, and offered facilities for the examination of the children attending at the Birbeck Schools, and for their vaccination should they need it.[4]

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1. Med. Off. Ann. Rep., Camberwell, 1858-59, p. 29.
2. ibid., 1859-60, p. 16.
3. ibid., 1863-64, p. 35.
4. Camberwell Vestry Minutes, 9th May, 1866.

The emphasis placed upon the vaccination of school children by the preventive authorities reflects the belief generally current in England at this period that primary vaccination, correctly performed, provided a complete protection from smallpox. This concept was propagated by Jenner himself, and was accepted unquestioningly as part of the Jennerian package in England, where the violence of the pro- and anti-Jenner factions was such as to preclude detachment about the value of all Jenner's ideas.[1] On the Continent, where loyalties were less finely drawn, the worth of Jenner's contribution was recognised by the medical profession, but it was also recognised that, as smallpox did occur in the vaccinated, re-vaccination was necessary, and it was this recognition which contributed to the success of the vaccination programmes in Germany and Scandinavia.[2] In England, the Vaccination Acts of 1840, 1853 and 1864 provided for infant vaccination (compulsory from 1853), and for infant vaccination only, on the Jennerian basis. John Simon confirmed Jenner's views in his review of the history and practice of vaccination and although he admitted that smallpox did occur in vaccinated persons, he ascribed such cases to the badness or insufficiency of their vaccination, referring to[3]

> ... the <u>almost perfect security</u> which well-performed infantine vaccination confers against death by smallpox .....

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1. Dixon, <u>Smallpox</u> (1962), p. 285-6.

2. ibid.

3. PP., 1857, session 2, xxxv; <u>Papers relating to the History and Practice of Vaccination</u>, pp. 172-178 and p. 177.

Quite apart form the persistence of the idea of the sufficiency of infant vaccination, the problems of ensuring the performance of the operation were considerable. There can be no doubt that, despite the Vaccination Laws, vaccination was widely neglected and often poorly or inadequately performed in England. William Rendle was appalled to find in 1857 that only 731 children out of 1,973 born that year in St. George's were known to have been vaccinated, of whom 680 had been operated on by the public vaccinators.[1] It was estimated in 1864, by the Privy Council Officers, doctors Seaton and Buchanan, that the public vaccinators who performed the operation free, according to statute, vaccinated annually only half the number of children born in London.[2] Allowing for the proportion of children who died, or who were vaccinated privately, and in view of the great and constant immigration of persons whose vaccination history was unknown into the city, Seaton and Buchanan found " very conclusive proof" that the vaccination of children was postponed and neglected to a dangerous extent. This neglect varied greatly in the different parts of London. Wherever " unusual vigilance" was exercised by the local authority, or the medical officer, or by the local administrators of vaccination, the doctors had found a relatively small number of unvaccinated, and there was no difficulty in determining the superiority of some unions (St. George's, Hanover Square, St. James', Westminster, St. Martin-in-the-Fields) to others (St. Olave, St. George-the-Martyr, St. Margaret Westminster). In some cases the long absence of smallpox from a district appeared to determine a high proportion of unvaccinated.

(page 167 follows)

1. Med. Off. Supplement to the Annual Report, St. George, 1857, p. 2.

2. PP., 1864, xxviii, p. 86.

Lewisham was a particular example of this. Habitually free from epidemics, and as strikingly free from smallpox, it had one of the largest proportions of unvaccinated among the metropolitan unions.[1]

The forces which operated against the successful administration of the Vaccination laws were various. In the first place, there was the simple element of lethargy: if smallpox were not active, the bother of arranging for vaccination seemed too great, and if the local authority was not alert to defaulters, there was no machinery for ensuring that the law was carried out. The slightest inconvenience served as an excuse for omission. In 1871, St. Saviour's Poor Law Union (which from 1869 comprised the Southwark parishes of St. Saviour, Christchurch, St. George-the-Martyr and Newington), while convinced that the epidemic was being intensified by the susceptibility of the unvaccinated to contagion, yet found the remedy of vaccination difficult to apply. The MOH for St. Saviour's parish urged the need for a vaccination station in his parish, for although the union's vaccination stations were positioned with geographical nicety at equal distances from each other regardless of parish boundaries, the people of St. Saviour's nevertheless " did not chose" to go to the station in Christchurch, nor to that, equally accessible, on the Newington border.[2] Similar constraints were discovered in Lambeth union, where the smallpox outbreak was most severe in Norwood, in an area " far removed" from the vaccinating station. The MOH, Dr. Puckle, though that the distance - of about a mile - contributed " not a little" to the severity of the epidemic.[3] Yet the inhabitants of Norwood were not insensitive to the

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1. PP., 1864, xxviii, p. 87-88.
2. South London Press, 28th January, 1871.
3. ibid., 4th February, 1871.

advantages of vaccination, and readily accepted it when made easily available: the MOH himself had been vaccinating as many as 80 persons a day, and at times up to 130, in the initial stages of the outbreak.

A further difficulty about vaccination was that the state-sponsored service had been placed under the Poor Law administration, which immediately qualified its effectiveness:[1]

> ... the law unfortunately encumbered the simple operation with so many forms and processes; and placed the management of it under an unpopular poor law commission, which every one had been taught to dread; that we cannot be surprised if the operation is neglected.

This was William Rendle's view, and the findings of Seaton and Buchanan corroborated his impression. They discovered that in nearly half the London unions the Poor Law medical officers were the only public vaccinators, and that the performance of public vaccination at their surgeries was often very imperfectly disassociated from the receipt of parish relief, in that the time and place for vaccination attendance was usually identical with those fixed for the attendance of pauper cases of sickness. In Deptford and Woolwich, this confusion was plainly resented by the public, who almost universally took their children to the surgery of the vaccinator who held no public appointment. In St. George-in-the-East many parents refused to let their children be touched by the public vaccinator, who was also the workhouse surgeon, but made no difficulty in applying to his deputy who held no public appointment. In St. John's, Westminster and St. Saviour's the operation was principally performed by the one

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1. Med. Off. Supplement to Annual Report, St. George, 1857, p. 2.

contractor who had no parochial appointment. The parish of St. Giles had actually placed its only vaccinating station in the workhouse with the intention of shaming its parishioners into paying for private vaccination.[1] This, however, was unusual: the 260 London vaccination stations were in nearly every case the private residences or surgeries of the vaccinators.[2]

Prejudice against the actual operation of vaccination was another factor which played a part. Although John Simon remarked, in 1857, that " superstitions against vaccination" were no longer current in England, but only abroad, this was not in fact the case. Once again, some of Jenner's more eccentric ideas lay at the root of the trouble, and provided fuel for those who reacted violently against vaccination, and even more violently against its enforcement by the state. The South London Press was convinced that ignorance was the cause of most objections, and urged that the working mens' colleges employ lecturers to set out the advantages of vaccination as well as its disadvantages to their students:[3]

> Notwithstanding the progress of education in South London, and the efforts so generally made on all sides to promote the knowledge of what is, in the best sense of the words, " Social Science" , among the working classes, we have fresh proof every day that an utter ignorance of first principles is still very prevalent.

It was not, however, only among the ignorant labouring classes that such objections existed. The central core of opposition lay with the educated, articulate, middle-class group who established the National Anti-Compulsory Vaccination league, and whose objections were founded as much in religious bias as in " ignorance" .[4]

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1. PP., 1864, xxviii, pp. 93-94.
2. ibid., p. 94.
3. S.L.P., 26th September, 1868.
4. J.M. Eyler, " Mortality Statistics and Victorian Health Policy" , Bull. Hist. Med., 1976, p. 347; also Dixon, op. cit., p. 287.

The arguments used by the anti-vaccinators were various, ranging from the extreme pietistic view that diseases such as smallpox were sent to chastise an unsatisfactory population, through the Chadwickian, espoused by Florence Nightingale, that smallpox arose from dirt and overcrowding, and could be dealt with finally by inculcating habits of cleanliness,[1] to the simple and ferocious objection to " the process of poisoning our little ones by Act of Parliament" .[2] It was by those espousing this argument that Jenner's more extravagant views were taken very seriously. Jenner's belief that smallpox originated from " grease" in horses,[3] for instance, became marvellously twisted in the popular mind, so that one of the principal objections against compulsory vaccination could be explained thus:[4]

> ... because the lymph of vaccination is taken in the first place from the greasy heels of a diseased horse and the greasy heels are the expression of terribly diseased state of that horse's lungs.

Thus, the increase in bronchitis and lung diseases, which was " something frightful", could be entirely attributed to the process of vaccination.[5] Indeed, it is illustrative of the lingering belief in the prime importance of the blood in the development and transmission of disease, that vaccination could be held to transmit numerous afflictions which the vaccinated individual might otherwise wholly have escaped. Although erysipelas was communicated upon occasion by the insufficient sterilisation of instruments, there is less foundation for other alarmist views, for example:[6]

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1. Med. Off. Ann. Rep., St. George, 1859-60, p. 12; also Dixon, op. cit., p. 287.
2. S.L.P., 26th September, 1868, letter from J. Bramley
3. Dixon, op. cit., p. 260-262.
4. S.L.P., 11th September, 1869, letter from J. Bramley.
5. ibid.
6. ibid; quoted from " eminent man, who was 20 years a public vaccinator".

> .... pure lymph being the product of tubercular consumption (or phthisis) carries the seeds of that disease with it, and if it is impure - that is, if it is contaminated with any other human disease - it carries the seeds of such contamination with it, whether it be syphilis, scrofula, mania or any other blood disease.

The results of the anti-vaccination agitation on the amount of vaccination effected are difficult to gauge. The introduction of the conscientious objection clause into the Vaccination Act of 1898 did have some results, in that objection was registered as the reason for non-compliance. However, it seems clear from the vaccination statistics for London, that indifference was a far more powerful factor, and one at work long before the opportunity of legal objection was offered. In addition, the number of vaccinations in London fell off markedly from 1889, when the Royal Commission on Vaccination was appointed, because many local authorities stopped enforcing the law on the excuse of waiting to see what the Commission would recommend.[1]

As a result of the failure of the English vaccination programme and because of the reluctance to recognise the necessity for re-vaccination, control of smallpox in England rested to a very large extent on the vigilance of the local medical authorities. This was a matter of some anxiety to the medical officers of health, who were aware of the inadequacy of their own resources, and of the enormous task which would lie before them, if by any mischance smallpox should at any time get a hold upon the population.[2] After an outbreak in Camberwell in 1897, Francis Stevens reported gloomily that it sprang from a consistent pattern in which there was,[3]

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1. PP., 1894, xl, p. 371.
2. Camberwell Vestry Ann. Rep., 1896, p. 420.
3. Med. Off. Ann. Rep., Camberwell, 1897-98, p. 13.

> ... little variation from the monotonous history of the beginning in an unvaccinated person, and spreading to those that are either unprotected or in whom the protective power of vaccination has waned.

The measures which were adopted locally to cope with an outbreak of smallpox varied little. The test of the local authorities' competence came with the epidemic which began in 1871, and which far exceeded in importance the cholera epidemic of 1866, the only other major epidemic outbreak with which the preventive machinery had had to deal. In that first epidemic year, 1871, smallpox caused 23,000 deaths across the country, of which 7,876 occurred in London. The panic which the disease caused was sufficient to provoke a demand for vaccination the intensity of which was "unknown to the present generation", as, according to Bateson, was the fear generated by the disease.[1] In Camberwell, the measures taken towards the control of the disease were as thorough as they could be. In fact the parish escaped relatively lightly from the epidemic, and there were only three areas in which the disease was "very intense". These, not surprisingly since smallpox was by this period a disease almost exclusively of the poor,[2] were some of the more thickly populated and overcrowded areas: the group of streets bounded by Camberwell High Road on the east and by Wyndham Road on the south (30 deaths 1870-72, estimate [Jephson] 240-300 cases); the streets north and south of that part of Commercial Road which lay west of the Peckham branch of the Surrey Canal (24 deaths, estimate 112-240 cases); and the district which lay between Camberwell Road, Church Street and Southampton Street.[3]

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1. Med. Off. Ann. Rep., St. George's 1870-71, p. 15.

2. PP., 1857, sess. 2, xxv, p. 148. However, medical officers experienced great difficulty in ascertaining the extent of the disease among the wealthier classes; Lancet, 25th February, 1871, p. 284.

3. Med. Off. Ann. Rep., Camberwell, 1871-72, p. 44-45.

At the start of the epidemic, each of the Camberwell inspectors attended the cases which occurred in his own area. However, Bristowe soon came to the conclusion that it was unwise for the same men to visit smallpox cases as were at the same time performing routine house-to-house inspections and two inspectors were allocated specifically to smallpox cases.[1] Bristowe had printed a circular on the preventive measures to be observed in connection with smallpox cases, and these were circulated to all medical men in the parish, together with a number of forms on which the Vestry was to be notified of cases occurring. A disinfecting machine was bought in March 1871, under Section 23 of the 1866 Sanitary Act,[2] and in June a second truck with moveable shafts was purchased for use with it and an extra man and horse hired to collect and deliver clothes and bedding for disinfection.[3]

By the end of 1871, the epidemic seemed to be gradually dying away in the parish, but early in 1872 resurged and a local epidemic of great severity broke out in a crowded and chiefly Irish neighbourhood in the poorer northern district of St. George's, in the streets bounded by Wyndham Road on the south and Camberwell Road to the east.[4] Inspectors Cooper and Waters were immediately re-assigned to smallpox duties, with special instructions to use "their best influence" to have cases removed to hospital and to have clothes, bedding and rooms disinfected in all cases.[5]

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1. Med. Off. Ann. Rep., Camberwell, 180-1, p. 51; Sewers and Sanitary Mins., Camberwell 13th June, 1871.

2. ibid.

3. Sewers and Sanitary Comm. Mins., Camberwell, 13th June, 1871.

4. S.L.P., 20th January, 1872.

5. Sewers and Sanitary Comm. Mins., Camberwell, 3rd January, 1872.

The number of smallpox epidemics during the second half of the century amounted to no more than 5 in all: 1862-64, 1871-72, 1877-78, 1882-84, 1893-95. During the first half of the century there had been significantly more: nine since the introduction of registration in 1836. However, those years described as epidemic were usually preceded by at least a year in which the disease was more than usually prevalent. Thus significant local epidemics spotted the vestry records both before and after the main danger was over. The increased virulence of smallpox during the second half of the century did little to increase the cooperation of the general public in respect of preventive measures, but it seems that where a local epidemic took hold of a population resistance to outside medical interference would eventually be worn down. Such was the case with the scarlet fever epidemic in the Lincolnshire village of Donnington,[1] and illustration can also be found in the London parishes. During the 1884 smallpox epidemic for instance, a local epidemic occurred in Newington in the tightly knit community of East Street.[2] A woman who lived in the street had been nursing a child with smallpox in the neighbouring parish of Deptford, and returned home, bringing the infection with her. Her own two children caught the disease, but she gave out that they had a cold, and it was not until they were actually dying that the truth was known. There then followed the customary display of community curiosity, with a troop of unvaccinated children crowding around the open door to watch the dying children. Nine further cases of the disease occurred in that house, with five deaths, but the preventive authorities could only obtain information about them with the greatest of difficulty, since the inmates of the house would not help them in any way.

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1. PP., 1884-85, xxxiii, pp. 54-62.

2. Med. Off. Ann. Rep., Newington, 1884-85, p. 126.

The effects of this incident were not limited to the one house. Within a month, 70 cases of smallpox had occurred within a quarter mile radius of the East Street house, and it was 18 months before the repercussions from the original cases ceased to be felt in the area.[1] An additional man had to be re-deployed from general vestry service to cope with disinfection and other smallpox duties, and the medical officer appears to have come to an arrangement with the Asylum's Board which ensured the removal of all non-pauper cases to hospital. More cases passed through the MOH's book than through the parish surgeon's: in the course of 1885, 126 cases of smallpox were removed through the former office. The most notable development of 1885 was the general desire of patients' friends and relations for treatment in the hospital, in marked contrast to the evasion which had been widespread in the parish a year previously.[2]

Other incidents bear witness to the patience and persistence of the preventive officers. In April, 1886, Iliff was busy at St. Olave's Chambers in Tabard Street (which in 1910 was described as the principal of the three worst remaining slums south of the river[3]), where four cases of smallpox had just occurred. The patients had been sent through the streets to the Relieving and Medical officers, and Iliff was[4]

> ... endeavouring to induce the owner (of the Chambers) to provide an isolation room on the premises ... the patients would then be seen on the premises by these officers.

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1. Med. Off. Ann. Rep., Newington, 1884-85, p. 126; 1885-86, p. 168.
2. ibid., 1885-86, p. 126.
3. Daily Telegraph, 2nd November, 1910.
4. Sewers and Works Comm., Newington, 19th April, 1886.

In Camberwell in 1896, smallpox appeared in a house in Toulon Street, but the disease was contained and the 7 cases which occurred were confined to the same house. Toulon Street lay in the black spot between Wyndham and Camberwell Road, which had been a source of trouble to the preventive authority since it was formed, and which more recently had attracted the indignant attention of the philanthropic reformers.[1] The limiting of the disease was an indication of the efficiency of the authority's measures. The houses in the neighbourhood had been visited, and vaccination advised where necessary. The affected building had been disinfected as thoroughly as was possible, and the cats-meat man had been stopped from his usual round because of the danger of infection. The schools attended by children from the infected house were checked, in case any child was ailing, or absent in suspicious circumstances. All the cases (which ranged from 2 to 44 years of age) were removed to hospital promptly; and the hospital reports showed them all to have been unvaccinated. This fact prompted Francis Stevens to the observation that isolation and vaccination were the means to prevent the disease:[2]

> On account of the isolation arrangements being well carried out the effect of the large unvaccinated population that exists in the Parish does not show itself so prominently as it otherwise would, but I still strongly adhere to the belief that if isolation should fail the neglect of vaccination would make itself very severely felt in the event of an outbreak of smallpox.

The anxiety which MOHs felt about the possibilities of a major smallpox outbreak was not unjustified. Although the efficiency of preventive measures had considerably diminished the incidence of the

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1. Med. Off. Ann. Rep., Camberwell, 1897-98, p. 11; Booth, Life and Labour, vol. 1, p. 273-4.

2. Med. Off. Ann. Rep., Camberwell, 1896-97, p. 9.

disease by the 1890s, it was by no means absent. Once again, mobility of population was an important factor. As with typhoid, many primary cases of smallpox had their origins outside the locality. The return of the hop-pickers from Kent and Sussex towards the end of September was, for instance, a recognised danger-period, in the preventive calendar.[1] One example of the way in which smallpox could travel across several countries comes from Camberwell, where in 1895 a woman living in Beckett Street (again, the Wyndham Road trouble spot) had not been feeling very well when she set off on August 5th for the hop-picking at Waterbury. Five days later, she was not feeling any better, and travelled home to Camberwell by train (August 10th). The case was initially diagnosed as chicken-pox; and the result was what threatened to be a local epidemic in Beckett Street.[2] No doubt many among the woman's contacts, who must have numbered several hundred, dispersed to transmit the disease to other parts of the country. In Camberwell, the disease subsequently shifted to neighbouring Toulon Street, on the one side of which were houses inhabited by fish-curers, and on the other tenements housing " the poorest of the poor" .[3] The business of the fish-curers probably helped to spread the disease afield in London.

There is little doubt that the greatly increased preventive efficiency with respect to smallpox in the latter part of the century (due on the one hand to local preventive methods, on the other to the effective isolation facilities offered by the MAB's hospital ships from 1885), resulted in the virtual eradication of the endemic character

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1. see above, p. 129.
2. Med. Off. Ann. Rep., Camberwell, 1895-96, p. 417-418.
3. ibid.

of the disease in London. The epidemic potential however, remained. The introduction of the virus among a largely unprotected population might be of devastating effect, and it is a measure of the increased sophistication of the medical officers' technique that the control of the transmission channels of the disease began to figure among their concerns. The realisation of the importance of the hop-pickers as vehicles of infection is one illustration; the agitation over the movements of the tramping fraternity during the last decade of the century is another. In the spring of 1892, smallpox recrudesced again in London, after having been virtually absent for several years.[1] During the course of preventive investigation it seems to have become apparent that vagrants had played a significant role in spreading the infection, for in April 1893, the LCC were suggesting the desirability of providing special facilities for the vaccination of employees and lodgers at casual wards, workhouse infirmaries, Salvation Army shelters, and common lodging houses.[2] The MAB had previously made a similar suggestion:[3] the endorsement of the LCC validates the reality of the situation.

Cases from the parishes provide further evidence. Arthur Russel, for instance, was found to be suffering from smallpox when admitted to the casual ward of the City of London Union in March, 1893. He had previously slept at the Salvation Army shelter in the Blackfriars Road, and in other hostels.[4] It was noticed as a " very remarkable" difference between the 1893 epidemic and previous ones that, whereas in former years the proportion of female and child victims to male had been 3:2, in this case it was 1:3. In nearly all cases the males were

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1. PP., 1894, xxxix, p. xxxiv.
2. Camberwell Vestry Mins., 19th April, 1893.
3. ibid., 22nd February, 1893.
4. Sanitary Comm. Mins., St. George, 27th March, 1893.

adults of the casual class. Of 160 men in hospital on March 8th, 1893, 108 were known to have come from shelters, refuges and casual wards and 11 from various institutions. Only 41 were the possessors of homes.[1] The case for the regulation of shelters in respect of smallpox was still being urged by individual vestries, among others, in 1895.[2] The experience of Camberwell in these later years bears out the general anxiety. In June, 1895, a patient admitted to the Gordon Road Workhouse, supposedly suffering from nettle-rash, turned out to have smallpox. He had come from the Manor Chambers lodging house in the Camberwell Road, and was at once transferred to the Constance Road Workhouse, where the facilities were better, and later to one of the hospital ships. In the Constance Road Workhouse, however, 7 cases of the disease occurred, two among the staff, the rest inmates.[3] In 1897, in the fortnight 10-24 February, 17 cases out of 21 in the parish came from the Workhouse infirmary,[4] while in the succeeding fortnight, two out of eight did so.[5]

The channels for the transmission of infectious diseases such as smallpox were in fact many, and did not depend solely on human contact. In poor areas particularly, the market for second hand clothes provided an ideal means for the spread of infection. Clothing was taken to be pawned or sold while the smallpox victim was ill, or after his death. Where the home was used as a basis for industry, for laundry or sewing, such work generally continued while illness was present. Costermongers not infrequently stored their stock under their beds, and were not

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1. Camberwell Vestry Ann. Rep., 1893-94, p. 251.
2. Camberwell Vestry Mins., 14th August, 1895.
3. ibid., 3rd July, 1895,
4. ibid., 24th February, 1897.
5. ibid., 10th March, 1893.

deterred by the fact that the bed might be occupied by a smallpox patient. Children and parents continued to go out to work, even though a sibling/offspring might be ill. In some instances, schools continued to operate in houses where smallpox was present.[1] All these channels were, certainly in the days before notification, generally beyond the control of the preventive authorities. The conscientious and humane Iliff found a solution to the problem, but not one which was possible for long. During the 1871 smallpox epidemic, Iliff observed how willingly persons in affected houses gave up their work - he instanced washing, mangling and large workshops - for as long as he deemed it expedient to prevent the spread of infection. Recognising the vital importance of an income in these cases, he gave the families involved assistance out of " some small funds at my disposal" . These funds were eventually exhausted, and he appealed for donations through the medium of the South London Press.[2]

The decline of smallpox in London, in spite of these difficulties, was a significant feature of the preventive achievement in the latter part of the nineteenth century, as the mortality tables show. The role of the MAB hospital ships in this achievement was probably considerable.[3] In Camberwell,and Newington , smallpox mortality fell away dramatically in the year of their introduction (Fig. 4), because cases were removed and such deaths as occurred took place outside the parish. The deeper knowledge of local disease conditions which the health departments gained as a result of the 1889 Notification Act was equally of high importance. The Newington smallpox maps for the epidemic years 1893-95

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1. Med. Off. Ann. Rep., St. George, 1871-72, p. 14.
2. S.L.P., 8th April, 1871.
3. Lancet, 4th June, 1892, p. 1258.

reveal both the essentially scattered nature of the cases, as well as their epidemic potential. The geographical isolation of most of these cases is an indication of preventive efficiency. The cases which do cluster do so in streets where cluster cases might be expected: for instance, in 1893, in Silvester Street, which Booth had designated a pale blue, or " poor 18s to 21s a week for a moderate family" in 1889. Silvester Street, like the dark blue area of the Lion Street/Sayer Street Block, was most probably an area where there were very close inter-household ties, and the strong community loyalty which often hampered the preventive machinery. Although some cases, indeed in Pollock Road a cluster, do occur in fairly comfortable and middle-class areas, it is noticeable that in the wealthier western and southern portions of the parish there are very few cases, and in only two, or possibly three instances do these seem to bear any relation to each other.(Maps 25, 26-28).

The apparent control which the preventive officers were exercising over the spread of smallpox by the 1890s, was by no means productive of complacency however. Recognition of the enormous number of unvaccinated persons among London's population, and of the speed with which the disease spread if undetected for long made the medical officers very aware of the dangers of complacency; a feature which re-occurs in the context of cholera. Francis Stevens recorded that the 82 cases of smallpox which occurred in Camberwell in 1895 did so in a total of 45 houses. Inquiries revealed the " disquieting fact" that thirteen of these houses held unvaccinated persons, and Stevens had no reason to think that this state of affairs was exceptional. It was a state which, in his opinion, boded ill for the continued long-term control of the disease.[1]

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1. Med. Off. Ann. Rep., Camberwell, 1895-96, pp. 415-20.

We know now that there is a population which is largely unvaccinated, owing chiefly no doubt to the way in which the proper authorities wilfully neglect the duty imposed upon them by the law of prosecuting all defaulters. If the arrangements of the isolation hospitals should by any means be put out of gear and smallpox were to come amongst us, nothing would preserve the Parish from a widespread and severe epidemic.

CHOLERA

The pattern of the nineteenth century asiatic cholera epidemics was very different from that of smallpox, and the two diseases constituted very different problems for the health authorities. Asiatic cholera first appeared in Europe in 1830, and from then until the end of the century remained a disease whose movements and recurrences were watched with apprehension and attention throughout the civilised world. During the century seven pandemics of cholera occurred, of which only the first four were seriously felt in England. Three of these, the epidemics of 1831-2, 1848-9 and 1853-4, fell before the institution of the London preventive machinery, indeed before the firm establishment of any central preventive authority. The alarm and interest generated by the outbreak of this violent epidemic disease, whose high mortality and horrifying symptoms - the blackened skin, the swollen tongue, the spasms and bowel discharges - at least paralleled in alarmist value the sinister dark swellings in armpit and groin which are the hallmark of bubonic plague, were considerable throughout Europe. As a result, and perhaps also because of the receptive state of medical interest at this period, research into the causes, prevention and cure of cholera became almost immediately an active

field of medical interest. The fifty years which elapsed between the first epidemic and Koch's discovery of the comma bacillus were notable for the enormous volume of literature which appeared about the disease.

The appointment of the London medical officers in fact followed rapidly upon the third cholera epidemic, that of 1852-4. The observed connection between cholera and dirt, combined with the recent work of John Snow in tracing the connection between the disease and contaminated water supplies in Broad Street, and particularly in South London,[1] placed the prevention of cholera squarely among the environmentally directed duties of the new officers. Although varying opinions as to the causes of the disease continued to divide the medical profession, the evidence for cholera being an initially communicable disease - indeed, obviously introduced from abroad through the ports and even from imported goods - was weighty. It was not, however, until a decade after their appointment that the new authorities were called upon to apply themselves to a further epidemic of cholera. South London had suffered heavily in the epidemic of 1853-54, largely, as John Snow had pointed out, because of the contamination of its company water supply.[2] The notoriety which this fact gained produced an improvement in the quality of the company supply, for the supply of the Lambeth and Vauxhall water companies had since been taken from above Teddington Lock, where the supply was considered to be purer than when taken from further down the river. The re-appearance of cholera in 1865 constituted something of a challenge to the preventive authorities, and the arrangements which were made to deal with the epidemic reveal more of preventive techniques in the context of an epidemic emergency than do the corresponding smallpox measures.

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1. John Snow, On the Mode of the Communication of Cholera, (New York, 1936)
2. ibid. pp. 76-89.

The emergency arrangements which were put into force in 1866 very largely followed the Orders in Council of the Privy Council which were issued under the Diseases Prevention Act 1855 on 21st July, 1866.[1] These provided for daily consultations of the vestries, which the MOHs were to attend as far as practicable. Parishes were to be divided into districts, if the quantity of work required it, and each sub-division was to be put under a legally qualified medical practitioner. The medical visitor was to visit the places inhabited by the poorer classes assigned to him at least once daily, where practicable, was to ask at every house as to the existence of cholera and diarrhoea, and to keep a case book. The visitors were to be provided with medicines for immediate administration in urgent cases, and were in charge of all cases until relieved by other provision of the vestry. They were also to report daily to the MOH, and where expedient, were to inform the Relieving Officer of any case of destitution requiring relief and not already on his book. The Vestry was to provide a sufficient number of dispensaries, to be open night and day, with an adequate supply of medicines and disinfectants, as recommended by the MOH, and with a qualified medical practitioner or skilled assistant always in charge. Medical aid was to be supplied to poor cholera patients; nurses were to be provided to assist the medical visitors; and hospitals were to be set up on the recommendation of the MOH.

The Camberwell account of the 1866 cholera measures is, as might be expected, the most detailed, but, perhaps because of the seriousness of the situation, and the unusual government and public interest which cholera aroused, the accounts of Newington and St. George are more extensive than customary. Camberwell appointed nine medical visitors,

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1. Camberwell Vestry Minutes, 31st July, 1866.

who were allocated among the electoral wards of the parish, Ward 5 being granted two visitors, and Ward 6 three. St. George appointed three medical visitors, and Newington apparently none, but entered into an arrangement with the four district parish surgeons whereby medicine, attendance and a supply of chloride of lime (for disinfecting purposes) might be obtained at any hour of the day or night, without order.[1] All three parishes observed the dispensary regulation, and the two poorer recorded the extent to which the facility was used. Thus in Newington, in the sixteen weeks in which the dispensary was kept open, 4,305 supplies of diarrhoea medicine were issued, besides chloride of lime, and the dispenser was called up at night 79 times.[2] A further 3,400 supplies of medicine were issued by the district surgeons. In St. George, the dispensary opened in the Vestry building on August 4th, and closed on October 6th. 5,154 persons were supplied with free medicine, and 2,791 with disinfectant, the three dispensers having given away 182 gallons of medicine, nearly two tons of chloride of lime, and 2,400 gallons of disinfecting fluid.[3] In Camberwell, although the dispensary was open for ten weeks, closing on October 23rd, only the charges are recorded. Thus, in that parish, the fee for keeping open the dispensary was a guinea a week, and payment for medicine supplied was at the rate of 10-13 shillings a dozen bottles.[4] (See Table 7 for the remuneration paid to the medical visitors).

The setting up of local cholera hospitals, a very desirable measure both as regarded isolation and treatment, since patients were highly

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1. Med. Off. Ann. Rep., Newington, 1866-67, p. 45.
2. ibid.
3. Med. Off. Ann. Rep., St. George, 1866-67, p. 18.
4. Med. Off. Ann. Rep., Camberwell, 1866-67, p. 94.

active foci of infection as well as being unable to support such long journeys as might have to be made to secure them treatment at the regular hospitals, proved a very difficult task. It was not one which vestries regarded as necessary, or perhaps local opinion was too well known for the measure to be even attempted. Bristowe did, however, with vestry permission, attempt to establish such a hospital in Camberwell, and the difficulties which he encountered reveal much of the obstinate fear of the disease which hampered preventive operations. There was a " general prejudice" against allowing property to be used for cholera cases, but in Ward 4, where a serious outbreak had occurred in Stockwell Street among a very poor population, the Ward Committee eventually persuaded the London, Brighton and Dover Railway to allow them to fit up a railway arch in White Post Lane as a sanctuary for healthy refugees from Stockwell Street, while a Mr. Broomhall gave permission for an outbuilding on his premises to become a temporary hospital.[1] In the event, the temporary hospital was never called into use, and Bristowe experienced "some difficulty" in persuading the inmates of infected houses to take up residence in the railway arch even for a short space of time.[2]

The Stockwell Street outbreak of cholera is the only documented incident in the three parishes. Although the southern areas of London by no means escaped the disease (Table 8), the toll, except in Lambeth and Greenwich, was relatively light, especially when compared with the ravages which occurred in East London. The Stockwell Street episode was perhaps the only one which had the potential for a major disaster. Certainly, the conditions in which the disease appeared here

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1. Camberwell Vestry Minutes, 19th September, 1866; also S.L.P., 22nd September, 1866.

2. Med. Off. Ann. Rep., Camberwell, 1866-67, p. 97.

were not reassuring. The street was only 20 feet wide, and contained 60 four-roomed houses, each occupied by 10-20 persons. The houses were neglected and filthy; the roadway and yards neglected, the closets out of order, the drains untrapped, and the level of the road was in many places higher than the door sills of the houses, in such a fashion that it could not possibly be drained. To complete this picture of dereliction, the Metropolitan Board of Works had recently finished putting a sewer into the road, but had filled it in badly, so that a deep hollow formed along it into which the inhabitants of the road threw their refuse.[1] Although the outbreak totalled only ten cases, the preventive anxiety in this instance was sharpened by Bristowe's recognition of the means by which the disease spread:[2]

> ... in houses which are overcrowded and uncleanly and among uncleanly persons, especially therefore among the poor, the evacuation from a single case of cholera may poison their pots and their pans, their persons and their clothes, may thus become mixed with their water and their food, and keep up among them such a continuance of the disease as was experienced in Stockwell Street.

Such experience as the health departments gained in dealing with cholera during the 1866 epidemic was not to be of long-term value. The 1866 epidemic in fact constituted the last visitation of the disease in England, although it continued to ravage the Continent until the end of the century. The epidemics of 1871-3, 1883-4 and 1892-3 did not spread to England, in spite of close trading links with France and affected German cities, nor did the movement of English troops in and out of Egypt, when the disease took hold there in 1883-4, produce repercussions at home. Britain's freedom from this major epidemic disease during the later years of the nineteenth century

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1. Camberwell Vestry Mins., 19th September, 1866.
2. Med. Off. Ann. Rep., Camberwell, 1866-67, p. 102.

is to a very large extent a testimony to the efficiency of her preventive system, as well as to the fortunate accident of being an island. The health department of the Privy Council continued to monitor the progress of cholera in Europe and beyond with close attention, and to prime the local authorities when it seemed that the disease might be expected to threaten British shores. Thus cholera scares, though not cholera epidemics, became a feature of the later nineteenth century. In 1871, Camberwell Vestry received a letter from the Director of the Kent Water Company, stating that in view of the approach of cholera, he would be happy to cooperate with the Vestry in preventive measures,[1] and notes by the medical officer on the progress and likelihood of an epidemic appear in the vestry records in 1873, 1884, 1885 and 1893.[2]

The vigilence of the health authorities towards cholera throughout the century nevertheless masked, by the 1890s, varying degrees of complaisance. Those authorities with a wider public responsibility, such as the MAB and the Poor Law Board, were active in tightening the arrangements which were to deal with the disease as soon as information of its spread was received from Europe.[3] At the local level, however, the medical officers apparently greeted such information with some condescension. Bristowe, for instance, in 1893, remarked that the issue of cholera regulations by the MAB did not mean that they need immediately be put into practice, nor even that they would be necessary at all, continuing,[4]

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1. Camberwell Vestry Minutes, 27th September, 1871.

2. ibid., 16th July, 1873, 2nd July, 1884; Sewer and Sanitary Comm. Mins., 6th October, 1885, 27th June, 1893.

3. Med. Off. Ann. Rep., Camberwell, 1883-4, pp. 191-217; 1892-3, pp. 304-308.

4. Med. Off. Ann. Rep., Camberwell, 1892-3, p. 305.

> ... our London waters are not, of course, perfect waters, but they are fairly good and well filtered, and there is no substantial reason to fear that the cholera poison will be distributed by them as it was distributed on former occasions.

Although Bristowe admitted that the public authorities might need to take action at a moment's notice, his attitude in the following year bears out the impression of rather patronising detachment. On this occasion he commented that cholera was "probably no danger", but that in view of its heavy mortality and the terror which its prevalence inspired, the precautionary measures should not be relaxed.[1]

In Newington, Millson evidently had much the same attitude as Bristowe, for although precautionary measures were put in train (the inspection of refuse deposits, fruit markets and fish shops, the intensification of street cleansing operations), he saw no cause for alarm:[2]

> As far as the Sanitary condition of the Parish is concerned, a vast amount of Sanitary Work has been done in the past few years, and I believe we were never in a better position to withstand an invasion .....

The detachment of the medical officers does not appear to reflect public feeling. Newington Vestry's report of 1894 is perhaps a better guide to this, its extreme nervousness most probably being aggravated by the handful of scattered cases which had been reported across the country (for instance, in St. George-the-Martyr, where a local glass cutter had been infected from the straw packing in a case of sheet glass from Amsterdam),[3]

> With the advent of the summer season the cholera scare of the preceeding year was revived in full force, and having broken out in several parts of the country the appearance of the pest in the metropolis was almost daily expected and dreaded.

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1. Med. Off. Ann. Rep., Camberwell, 1893-4, p. 500.
2. Newington Vestry Mins., 21st September, 1892.
3. Newington Vestry Ann. Rep., 1893-4, p. 30; Med. Off. Ann. Rep., St. George, 1893, p. 44.

More precise evidence of cholera scare, at the popular level, is difficult to come by. The local press certainly was far from scaremongering, and it is here that evidence of public attitudes might most likely be found. The South London Press had, however, a balanced attitude on most things, epidemic disease included. Although the resurgence of cholera in Europe in the later years of the century received due notice, the paper made no attempt at any time to stir public sensitivity on the subject, and its reportage of the 1866 epidemic was unemotive. The popular sentiments which the paper records on cholera in 1866 are suitably varied. There was, for instance, Mr. Martin of St. George's Vestry, who, when measures against the disease were being discussed, was heard to condemn,[1]

> ... the constant practice of talking about the approach of cholera. It seemed to him just like the cry of "Wolf! Wolf!" and he believed people were even frightened into illness that way.

A statement which was greeted by the Vestry with a cry of "Oh!" and laughter. The South London Press was generous in its praise of the local authorities' attempts to control the epidemic:[2]

> Doubtless the comparative immunity from the dread visitation of this disease is due, in a great measure, to the precautions so promptly taken by the parochial authorities of all the populous neighbourhoods which border on the south shore of the Thames.

The paper also affords a rare glimpse of popular reality in the epidemic context. In some quarters, it was remarked, the fear was worse than the disease. The proprietor of a large tavern not a mile from Vauxhall Bridge fled to the seaside on the approach of cholera,[3]

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1. S.L.P., 16th December, 1865.
2. ibid., 11th August, 1866.
3. ibid.

> ... whilst the unhappy barmaids are doomed to swallow odious concoctions of experimentalising pharmacists, and carry camphor and spice balls about with them, almost similar to those prepared by charlatans 200 years ago, to ward off the great plague from their wearers.

Forewarned, the paper remarked, was also fore-armed: "if anybody dies through lack of medicine he will have only himself to thank for it".

The panic which cholera generated not only in England, but wherever it appeared in Europe, must be ascribed to a large extent to the horrifying manifestations of the disease. The comparative rarity of epidemics and the novelty of the disease itself, placed it in a different category from the other communicable diseases of the period, producing a public interest and a public concern which were unequalled until the preventability of tuberculosis was drawn to the general attention in 1898. Although the total cost, in both economic and human terms, of smallpox, tuberculosis and scarlet fever, was individually greater even than cholera, these diseases did not arouse nearly the same public concern. As an indication of such concern there is nothing comparable to the Cholera Relief Fund established at the Mansion House in 1866, which received over £10,000 in charitable donations, besides "large quantities of wine" from several firms anxious to display their goodwill towards London's suffering population,[1] while such actions as the donation by Atkinson and Co. of Westminster Bridge Road of 100 complete sets of bedding to a temporary home for poor children recovering from cholera[2] smack almost as much of opportunist publicity as of genuine charity.

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1. S.L.P., 18th August, 1866.
2. ibid., 11th August, 1866.

A principal concern of all parties, individuals as well as authorities, was the prevention of the disease. Approaches to this desirable end naturally varied. While the preventive authorities redoubled their efforts at improving environmental conditions, the public took measures of its own. Such measures were, it seems, very largely of a dietary kind. Opinion, both medical and lay, varied as to whether drink was a cause or preventive of the disease. Mayhew's costermongers experienced a drastic decline in demand for the produce which was their livelihood during the 1849 epidemic,[1] and there is no reason to assume that similar patterns of avoidance of potatoes, greens, fruit and fish did not recur during the later epidemics. Some thought that fresh air would prevent cholera, others that fresh air caused it. Mr. Bramby of St. George's Vestry, for instance, is on record as saying that,[2]

> ... the mischievous propensity for breaking windows has saved lives from cholera attacks ...

On the other hand, the belief was current in Cornwall during the 1870s that night air and draughts were "enough to breed cholera".[3] The debates of the medical profession and other professionals as to the causes of the disease were generally treated with wary scepticism.

The South London Press, which accepted the importance of sanitary improvements in connection with cholera, was chary of the apparently significant meterological observations of Mr. Glaisher, which had aroused much serious interest. Glaisher was much interested in coloured mists which he claimed to observe in the atmosphere at times when certain

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1. Mayhew, London Labour (Dover, ed. 1968), vol. 1, p. 57-58; 92-93.
2. S.L.P., 16th December, 1865.
3. M. Hughes, A London Child of the 1870s, (Oxford pb. ed. 1977), p. 97.

diseases were prevalent. Scarlet fever, for instance, produced a yellow mist, and during the 1866 cholera epidemic he observed a blue mist over Greenwich Park.[1] This blue mist had not been observed since the cholera epidemic of 1854, and since none of the peculiar atmospheric conditions previously associated with the blue mist were apparent the logical conclusion seemed to be that there was a direct connection between the mist and the disease. The paper, however, reported these facts in a detached manner, observing that, as the mist was held to be disappearing,[2]

> ... if science has not been misled, as it was in its last astronomical mare's-nest, a speedy departure of the epidemic may be hoped for.

The attitude of the medical officers towards the disease and its means of transmission also varied.[3] Both Bristowe and Bateson - for Iliff did not meddle in medical theory[4] - were of the opinion that there were several ways in which the disease was transmitted. Bristowe's views were the simplest, and indeed, the most nearly correct, for he held that cholera[5]

> ... is not, like typhus and many of the typical forms of infectious diseases, conveyed by the atmosphere and inhaled into the lungs, but is conveyed by the food and taken into the stomach ...

Bateson's ideas were rather wider ranging, and reveal a happy fusion of miasmic and early germ theory. According to Bateson, cholera was "a morbid poison which enters into the blood either by way of the stomach or lungs, and pollutes it".[6] He goes on to say that it is

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1. PP., 1867, xxxvii, p. 289; PP., 1867-68, xix, p. 58.
2. S.L.P., 11th August, 1866.
3. For discussion of preventive opinion on the causation of cholera in 1866, see W. Luckin, "Cholera in London, 1866", Medical History, 21, 1977.
4. See above, Chapter 1, p. 36.
5. Med. Off. Ann. Rep., Camberwell, 1866-67, p. 102.
6. The term cholera poison was one used by Snow, and was freely used by progressive sanitarians. Luckin, op. cit., p. 54.

probably a living organism, and quotes an unspecified source to the effect that it consists

> ... of germinal matter, or living cells, possessing individuality, which are capable of preserving their activity for a certain time outside the living organism, of adhering to material objects and of being carried from one place to another by means of currents of air and by water.

Bateson adds that heat, moisture and complete stagnation of air are "most conducive" to its spread. Mists carry it in solution, as do emanations exhaled from the earth, and this may be the origin of the blue mist "of which we have heard so much". Cholera, he notes, has prevailed most in low-lying districts because of the stagnancy of the air and the concentration of foul emanations there. And the "poison germ" itself may be heavier than air, and so fall down and settle.[1]

At all events, nothing very clear about cholera emerged from the 1866 epidemic, except in respect of the experience of East London, where the crucial part played by contaminated water supplies was disastrously re-confirmed.[2] The experience of dealing with an actual cholera epidemic may have been of considerable importance for British preventive efficiency, however, and the fact that Britain was never again plagued by a major - or even a minor - cholera epidemic is significant here. The well-established antipathy of Britain's trading and business sectors for that most ancient of preventive measures, quarantine,[3] had led the medical department of the Privy Council to develop a system of warning

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1. Med. Off. Ann. Rep., St. George, 1866-67, p. 17
2. PP., 1867, xxxvii; Report by Netten Radcliffe on cholera in London, esp., pp. 277, 295-312.
3. For the quarantine debates occasioned by the first cholera epidemic, see R.J. Morris, Cholera 1832, 1976, pp. 23-35, 45-48.

and detection in times of cholera threatening,[1] which after 1866, worked extremely well. This system, activated by advance warning of the approach of cholera in Europe, depended on the vigilance of the port and riparian sanitary authorities, who were responsible for the detection of cases among persons coming into the country for their subsequent isolation, and the disinfection and checking of contacts. The effectiveness of the system is demonstrated not only by England's freedom from epidemic cholera after 1866, but also by the detail of the epidemic periods. In 1892, for instance, when cholera was active in the Hanseatic towns, and was causing havoc in France, only 35 cases of the disease occurred in the coastal areas of England, and in only three instances (amounting to 7 cases) did it succeed in passing beyond the port districts because it was in the incubation stage. Even so, these seven individuals were tracked down and isolated, without the disease spreading further.[2] The speed and effectiveness with which these cases - as well as the stray cases such as that of the glass-cutter in St. George's - were contained bear witness to the efficiency of the preventive machinery, when given precise instruction founded on a basis, if not of bacteriological certainty, then of certainty as to the identity of infective material, and as to the means of rendering it harmless.

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1. PP., 1894, xxxix, pp. xxii-xxviii.

2. PP., 1894 xxxix, p. xxiii.

3. THE CHILD KILLERS.

The final group of communicable diseases which were of importance at this period were those which fell almost exclusively upon the juvenile population. These were four in number, scarlet fever, diphtheria, measles and whooping cough, of which the two former figure most prominently in preventive records. Measles and whooping cough are both elusive, although there is little doubt that their incidence and mortality were considerable. Measles received attention principally in the context of the argument over whether or not it should become a notifiable disease; whooping cough, a difficult affliction to monitor in the nineteenth century urban environment, barely receives a mention beyond its appearance in the mortality tables. Scarlet fever and diphtheria, on the other hand, were of major and continual concern. All four diseases had in common a long endemic history in European populations, to which their rare incidence among adults testifies. Although diphtheria was only recognised as a distinct disease in 1858, when a severe epidemic brought it sharply to the public notice, it was recognised even at the time that it was probably a long established disease whose relative mildness had for very many years led to its confusion among a host of apparently similar afflictions.[1] Bristowe noted of scarlet fever, measles and whooping cough that they "have always been present amongst us, and will possibly never vanish", adding that they were diseases of an uncertain character, at times rapidly fatal even under the most favourable circumstances.[2] Even so, one feature distinguished these three from diphtheria. Many of the deaths which resulted from them were "undoubtedly preventable",

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1. PP., 1860, xxix, p. 523; Med. Off. Ann. Rep., Camberwell, 1858-59, p. 26.
2. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 29.

> being caused less by the inherent intensity of the diseases, than by complications such as dropsy and inflammation of the lungs which arise during their progress, and which are commonly produced by all those adverse hygienic conditions, which again are present most abundantly in the dwellings of the poor.

The patterns of these four juvenile diseases in England and Wales in the nineteenth century are rather varied. Deaths from both whooping cough and scarlet fever were declining from the mid-century; measles experienced jagged fluctuations at levels of between 1,000 and 12,000 deaths per million children, until mortality began to fall rapidly and dramatically from about 1915; diphtheria death rates increased steadily until the late 1890s, when anti-toxin treatment was introduced and mortality fell rapidly.[1] As with all sets of national figures, these patterns are to some extent misleading. It seems clear, for example, that high mortality from juvenile infectious diseases continued in urban areas right up to the end of the century, and that large cities, and London in particular, were the chief sufferers.[2] Moreover, the simplicity of generalisations based on national figures too often obscures the complexity of progress at the local level.

SCARLET FEVER

In spite of the national improvement in scarlet fever mortality, (Fig. 8), the local assessment of the disease for London in the latter part of the century is less cheerful, and there is little indication that the preventive officers felt other than that they were dealing with a recurring and persistent problem. By the end of the century,

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1. T. McKeown, The Modern Rise of Population (1976), pp. 96-98; (Figs.8,9,13,14

2. PP., 1895, li, p. 408; PP., 1899, xvi, p. 25.

however, the infectiousness of the disease at least had been established, and the importance of the characteristic desquamation in spreading the disease ascertained. Falling as it did under the general and misleading grouping of "fever", and until 1869 undistinguished from diphtheria in the Registrar-General's lists, scarlet fever was during the early years of prevention often placed in the category of filth diseases, although this was a category into which it fitted uneasily. In 1858, for instance, in Newington, the great prevalence and fatality of scarlet fever in and about Theobald Street, Charles Street and their vicinity resulted in a thorough investigation of house drainage in the area.[1] An assumed filth origin for the disease probably also lies behind William Rendle's observation concerning 35 recorded cases in the first quarter of 1858: the disease appeared in one of the worst spots in the parish in January and subsequently in successive weeks in Belvidere - buildings, Gray Street, Tower Street, and Lee's Place. By the end of the period, it had spread "for the first time" to "clean and well-ordered" places.[2] A decade later, however, Bateson, observing the beginning of a major epidemic, remarked that sanitary measures had hitherto been of little influence in preventing the disease. It visited all social classes alike, although the victim's state of health modified the mortality.[3]

The adoption of research findings in respect of scarlet fever proceeded more quickly than was the case with some other diseases. Long before the discovery of the streptococcus, the infectivity of scarlet fever was widely acknowledged. It was in the context of the 1869-71

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1. Med. Off. Ann. Rep., Newington, 1858-59, p. 59.
2. Med. Off. First Quarterly Rep., St. George, 1858, p. 2.
3. Med. Off. Ann. Rep., St. George, 1868-69, p. 34.

epidemic that Bateson revealed familiarity with Budd's work on the subject, although he apparently regarded it with some scepticism:[1]

> Dr. Budd has lately promulgated a plan by which he says scarlet fever may be localised, and its spread prevented. To prove the truth of this, further experience will be needed. Anyhow, his proposals could not always be put into operation.

John Simon was more specific in his delineation of the situation with respect to the disease at this period.[2]

> At the present time, with scientific knowledge limited as it is, and without very imperfect administrative resources, anyone who is responsible for advising on the requirements of the public health must feel extreme difficulty, and indeed, almost humiliation, in having to advise about scarlatina.

Simon stated specifically that the disease was "uncontrollably contagious" - there was no form of protection such as vaccination gave against smallpox and it did not depend on sanitary conditions; it was a contagium of persistent activity.[3]

> ... at present, we have not any other known power of dealing preventively with the disease than such as consists in intercepting all contagious communication between the infected and the non-infected parts of the population.

In conclusion, and taking scientific knowledge "as it now stands", Simon emphasised that scarlet fever could not be effectively limited except to the extent that the public was prepared to accept strict isolation rules against it.[4]

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1. Med. Off. Ann. Rep., St. George, 1868-69, p. 34.
2. PP., 1870, xxxviii, p. 602.
3. ibid., p. 603.
4. ibid., p. 605.

The progress of scarlet fever across the country was followed with concern by the central sanitary authorities, and any contributions toward a better understanding of the disease were greeted with interest. The Registrar-General remarked in 1869 on Professor Tyndall's findings that,[1]

> ... the countless myriads of motes that are seen dancing in every sunbeam are organic particles, and among them are zymotic bodies which are the germs of disease. These bodies are in concentrated force in the rooms occupied by persons suffering from or who have died of scarlet fever, hence the absolute necessity of isolating the sick as much as possible ...

All the emphasis on isolation did not serve to contain the disease however. In 1870 it was again widespread, and referred to as "the ruling epidemic" by the Registrar-General. None of the 17 large towns of England escaped, and London and Liverpool suffered particularly severely.[2] The 1870s, however, brought to light some circumstances which modified Simon's despairing conclusions of 1869. Once the Education Act of 1870 began to come into operation, the role of the school - and indeed of playing areas and other foci of childrens' communal activity - in spreading infection was realised. The memoranda which the medical department of the Privy Council issued in respect of scarlatina in these years emphasise the importance of the school, as well as the importance of thorough cleansing and disinfection of personal clothing and premises in connection with the disease. Edward Seaton placed special weight upon the final washing of the convalescent - three times over at least with soap and water-adding,[3]

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1. PP., 1871, xv, p. 56.

2. PP., 1872, xvii, p. 31.

3. PP., 1878, xxxvii, pt. 2 , p. 389.

> This caution is of particular importance with regard to schools, and the neglect of it when children return to school, after they have had slight scarlatina, is often a principal source of epidemic infection in districts.

The role of the school in spreading infectious disease became clearer indeed as the years progressed, and the question of whether or not to close affected schools during such outbreaks often became something of a local issue. A classic account comes not from London, but from the village of Donington near Spalding in Lincolnshire. During the year 1883, a good many reports reached the MO for the Privy Council from local MOHs in which the influence of schools in the distribution of scarlet fever and diphtheria was pin-pointed.[1] Donington was singled out as the classic illustration of a "familiar story", where local public opinion had forbidden the village practitioner to disclose to the Sanitary Authority the presence of infection in the families he attended. Few cases beside those occurring among paupers and those terminating fatally reached the attention of the MOH ; children from infected houses, often themselves showing the early symptoms of scarlatina continued to attend school,and more and more marked cases began to occur among pupils at the schools, to the point where it became necessary for the schools to be closed. The community, however, soon began to grumble about the closure, and after 10 weeks, during which time only four houses had been newly invaded, the schools were re-opened. The firm hold which the disease had established on the village and its schools was then revealed: a further 32 households were attacked, with 15 deaths among children aged between two and seven.[2] Prolonged re-closure of the schools was "thus necessarily acquiesced in", and, as Buchanan remarked,

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1. PP., 1884-85, xxxiii, p. 10.

2. ibid., p. 81.

> ... at the visit of the Board's inspector, the privilege of concealing scarlatina had well nigh ceased to be coveted by the little community.

Whether or not the generalisation of school attendance after 1870 led to a greater concentration of scarlet fever incidence among the working classes, is difficult to say. Up until the 1870s at least, the disease was very widely distributed among all social classes. Iliff, for instance, specifically noted that it was not a disease of the very poor.[1] A study of the Newington records over the eleven years 1860-70 revealed that while deaths from scarlet fever in Newington during that period numbered 1,000, the number of cases attended by the parish surgeons was only 945[2]; a thousand deaths would normally suggest in the order of 8-9,000 cases. Certainly the mortality in the MAB hospitals among 9,267 cases of scarlet fever treated in the years 1875-80 was 12% ; in the following five years, 9.6% per 100 cases.[3] Case mortality rates did however vary considerably from district to district, as T.W. Hime noted in connection with Bradford at this time. The case mortality for the Borough of Bradford in the years 1882-7 was 8.24% ; but this figure disguised local variations, since in some districts of the town mortality was consistently higher than in others, rising to 12 or 13% of cases.[4] Such local variation in mortality, perhaps also in incidence, explain the continued preoccupation of the preventive authorities with scarlatina, even though total mortality from the disease had begun its long downward plunge from the peak of the early 1860s.

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1. Med. Off. Ann. Rep., Newington, 1868-69, p. 59.
2. ibid., 1869-70, p. 54.
3. PP., 1888, xxxii, p. 727, n. 1.
4. ibid.

The suddenness of small local outbreaks of scarlet fever was also a cause for some concern, and it was through the efforts of local medical officers to explain such outbreaks that the role of milk supplies in the distribution of the disease came to be understood. The link between milk and the spread of disease had first been made in connection with typhoid fever in 1853, but no special notice was taken of this until 1871, when the MOH for Islington, Dr. Ballard, traced the same connection in a serious outbreak of the scarlet fever in his parish,[1] after which the connection seems to have been generally recognised.[2] The link was also made between milk and scarlet fever at St. Andrews in 1869, at Leeds in 1872, and in London, among the middle classes of South Kensington in 1875.[3] A further extension of the importance of the link between milk and infection came in 1886, when investigation of a scarlatina outbreak in south Marylebone during December, 1885, revealed that the micro-organism found in ulcers on the udders of cows on the supply farm at Hendon was identical to that found in the blood of humans affected by scarlet fever at a certain stage in the progress of the disease.[4] This discovery led to renewed activity by the Privy Council health department in the field of animal disease, with an inquiry into eruptive diseases of the teats and udders of cows in relation to scarlet fever in man.[5]

The record of major scarlet fever epidemics in London runs at about one per decade. 1858-9, 1860-1, 1869-71, 1887-8, 1892-3, 1896-7, are all years which fall into this epidemic category, and far from the 1860-61 epidemic marking a high-water of the disease in London, each

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1. see above, p. 130.
2. PP., 1876, xxxviii, p. 418.
3. ibid.
4. PP., 1886 xxxi, pp. 565-591.
5. PP., 1888, xxxii, pp. 621-801.

successive epidemic received acclaim for its increased severity. In 1870, Bateson noted the highest recorded mortality from scarlet fever, adding that during the epidemic, great efforts were made to arrest the spread of the disease, but to no avail.[1] The epidemic of 1887-8 caused much dislocation across London, and put pressure on the resources of the MAB hospitals.[2] The "rising tide of fever" began in early September, 1887. By the third week of the month the Board's hospitals contained 1008 scarlatina patients, and the Managers expected to run out of beds in another three weeks. The total accommodation available in the hospitals at this time amounted to 1,539 beds, of which 257 were set aside for other than scarlet fever cases. Towards the end of the month pressure was on at the Poor Law infirmaries as well: Dr. Serjeant of Camberwell was considered brave - and foolhardy - for clearing scarlatina cases out of the pauper hospital after 5-6 weeks, when it was thought that a hospital convalescence of 10-12 weeks was not too long.[3] In Newington alone there were 63 cases of the disease in the first month of the epidemic,[4] and although the established pattern of the disease was followed, beginning in the early autumn and rising to a climax in October (which month generally had the highest fever admissions), the disease continued exceptionally active for the next two years.[5] In 1892, however, scarlet fever was more prevalent in London than in any previous year on record. In spite of its being of a mild type, with a low case mortality, the MAB hospitals were filled

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1. Med. Off. Ann. Rep., St. George, 1869-70, p. 37.

2. S.L.P., 17th September, 1887.

3. ibid., 24th September, 1887.

4. ibid., 1st October, 1887.

5. Newington San. and Works Comm. Mins., 16th September, 1889; 14th October, 1889.

by the end of September, and continued so throughout October, admissions being made only to vacancies occurring by discharges and deaths.[1]

The situation in individual parishes too often reflected the chaos in which the hospitals found themselves plunged during the epidemic prevalence of diseases for which they were responsible. Newington, whose MOH, Millson, was evidently interested in the patterns of epidemic disease and the means of disrupting them, provides some insights into the local situation in the 1890s. Scarlet fever and diphtheria were both epidemically active during the decade, and both merit a full run of the parish's disease maps. The scarlet fever maps chart the swell of the epidemic from 1890 to climax in 1893, and show how the disease remained very prevalent in the parish up to 1899. The collated maps for the years 1890-99 (excluding 1897, the maps for which year are missing from the series held at the Southwark Collection; County Hall; and the Department of Health Library; Maps 29,30-39) reveal both the widespread incidence of scarlet fever in the parish during these years, and the quite noticeable differences in the density of incidence. The heaviest densities do not exactly correspond to the poorest areas, although they do include most of the dark blue and black areas in the parish. Mixed and comfortable areas of good ordinary earnings seem at least as vulnerable. The "mixed" Surrey Gardens Estate provides one very clear example of this,[2] as does the "comfortable" Poplar Place block, where the density of cases over the decade is at least as great as that of the blue block at the northern end of the Sayer Street/Lion Street block. The pattern of the disease in the parish

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1. Med. Off. Ann. Rep., St. George, 1892-3, p. 18.

2. see also Chapter V. p. 276-277.

does not vary a great deal across the decade, except that in 1899, it seems that about 50% of the cases occurred in streets or houses previously unaffected, as far as can be judged.

Millson's interest in the way in which the epidemic diseases were being coped with in London, and in the success of these measures in his own parish in particular, produced, besides the disease maps, figures on the type of treatment accorded to cases, whether in hospital or in the home, and on the case mortality rate respective to these two forms of treatment. These figures are particularly interesting in the comparison between the series for scarlet fever and diphtheria. The figures for scarlet fever (see Fig. 6) reveal that although in 1895, the first year for which these figures are available, the number of cases treated at home was almost one third more than those treated in hospital, this was the only (perhaps the last) year in which this was the case. From 1896 on the gap between the number of cases treated at home and those treated in hospital, widened steadily. Percentage mortality among the hospitalised on the other hand started off, in 1895, at a much higher level,(Fig. 7) and remained so, although falling, until 1898, when the mortality among home and hospital cases was identical. Percentage mortality in the hospitals fell steadily from 1897, and in 1899 and 1900 was well below the home percentage mortality. The upturn in the curve for both locations in 1900 may reflect an increased virulence in the scarlatina agent or some other outside influence on case mortality : the declining curve for total mortality (Fig. 8) suggests the explanation is unlikely to lie in deteriorating conditions of treatment, and must be rather in some more local and temporary cause of the kind which might produce local fluctuations, while leaving the total national curve decline unaffected.

(page 208 follows)

The continuing high home mortality, and the continuing high incidence of scarlatina in Newington were discussed by Millson in his annual report for 1897, at the height of the second epidemic peak of the decade.[1] He remarked that the increased number of removals in the parish, which had been taking place steadily for years (see Figure 6), did not seem to have much effect in diminishing the number of cases occurring yearly. In Newington, this was accounted for by the cases treated at home, and to the impossibility in a crowded parish of properly isolating them, so that infection was widely broadcast, and almost all susceptible children attacked. Further, when cases were treated at home, the medical man was in attendance for the first three days of the disease's course, but after that his services were dispensed with on grounds of expense.[2]

> Before a month has gone by, the patient and nurse are heartily tired of the restrictions of isolation, and the Sanitary Authority is applied to, to have the house disinfected. If the Officers of the Authority refuse after so short a time, the child, after a few days, is found mixing with the other children, or playing at the back of the house with its neighbours. Very often the child is found in the street.

Cases from Newington also illustrate a variety of difficulties beyond simple difficulty of isolation. The annals of notification in particular are informative on this score, although it is purely speculative how many times recorded instances might in reality be multiplied. In July, 1892, for example, Newington Vestry brought a court case against one Dr. de Quadras who had failed to notify two cases of scarlet fever, because he thought the disease was measles, while a mother was fined 10/- for exposing her son in a public place after the MOH had informed her that he had scarlatina, and had told her to keep

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1. Med. Off. Ann. Rep., Newington, 1897, p. 169.
2. Med. Off. Ann. Rep., Newington, 1897, p. 170.

him at home.[1] In the following November, a case against Mr. Macfarlane, who had allowed his son to attend school while suffering from scarlet fever, was dismissed because of conflicting evidence:[2]

> The defendant strongly protested his innocence of all knowledge of the nature of the boy's malady, as he had already done to both the Committee and the Vestry; while the doctor who had attended the case as positively asserted the contrary.

These incidents give some idea of the difficulties involved in containing scarlet fever, at a time when standards of health education were still generally very low among urban populations. It seems likely that the falling death rate from the disease was caused rather by a reduction in the virulence of the virus than in any major achievements in the sphere of prevention or cure. Waldo, for instance, noted in 1892 that although cases of scarlatina were numerous, the disease was relatively mild in its effect.[3] Francis Stevens was dismayed by the frequent admission of parents and relatives that they had not thought a child might have the disease because it was not ill:[4] a further indication of the increasing prevalence of a milder form of the disease. In spite of the efforts of the medical officers, many opportunities for the spread of infection continued to exist in the households, schools and patterns of sociability of urban populations in the later nineteenth century.

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1. Vestry Ann. Rep., Newington, 1892-3, p. 42.
2. ibid.
3. Med. Off. Ann. Rep., St. George, 1892, p. 18.
4. Med. Off. Ann. Rep., Camberwell, 1898-99, p. 12.

DIPHTHERIA

The story of diphtheria is rather different from that of scarlet fever, although the two diseases were in many ways so similar in their pattern of variable severity and mildness, in their symptoms, and in their principally falling on the juvenile population. Diphtheria also, like scarlet fever, occurred as frequently among the well-to-do as among the poor.[1] The two diseases were indeed confused for a long time, and it was not until 1859 (in which year diphtheria, spreading from France, became severely and distinctly epidemic) that the two were distinguished in the Registrar-General's returns. In 1859, diphtheria achieved a distinct and important position among the concerns of the health authorities, and it retained this position until well into the present century, although the death-rates from the disease fell sharply and steadily from about 1900 (Fig. 9). In common with scarlet fever, the death-rates from diphtheria fell while the incidence of the disease remained high and very constant, indicating the operation of some eccentric factors of behaviour. In the case of diphtheria, it is tempting to attribute the decline in mortality to the introduction of the anti-toxin treatment in the later 1890s, but the importance of this factor may easily be overestimated.[2] The irregular patterns of the disease, and the difficulty of gauging the reasons for its behaviour were already recognised at the time of the introduction of anti-toxin. The head of the Paris Municipal Statistical Office claimed for anti-toxin the credit of largely reducing diphtheria mortality in that city;[3]

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1. Med. Off. Ann. Rep., Camberwell, 1893-94, p. 499.

2. McKeown, op. cit., p. 98-99.

3. Arthur Newsholme, Pandemic Diphtheria (1897), p. 62.

> ... la dipthèrie est devenue rarement mortelle en 1895 et 1896. Cela est dû sans aucun doute à l'usage très repandu de serum de l'Institut Pasteur.

The British medical officer Arthur Newsholme had doubts, however, since it was clear that the decline in Parisian diphtheria mortality began in 1890, and three major provincial cities, Bordeaux, Lyons, and Marseilles, showed a similar decline in mortality from 1891 on, before the use of anti-toxin had become in any sense widespread.[1]

The decline in diphtheria mortality in England did not set in until a few years after that in France (Fig. 10) in 1898-99. The national figures again disguise important local differences in pattern. During the early period of the prevalence of epidemic diphtheria - that is from circa 1860 to 1885 - the disease fell with greatest severity in rural areas. From the mid-eighties, however, mortality in the larger towns began to close on that of the countryside,[2] and by the nineties had surpassed it. Throughout the period London alone of all the counties suffered a mortality consistently higher than average, in every one of the five periods 1861-71, 1871-80, 1881-90, 1891-95, 1896-97. Lancashire, which had been among the worst affected during the first three of these periods, by 1897 ranked among the least affected.[3] In 1896, London's death rate of 606 per million from diphtheria was the highest in the country. Eight other counties suffered " excessive mortality" from the disease in that year: Cheshire (320 per million), Worcester and South Wales (335), Warwickshire and North Wales (444), Essex (468), Kent (543).[4]

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1. Newsholme, op. cit., p. 62.
2. PP., 1889, xxxvi, p. 12.
3. PP., 1899, xvi, p. 25.
4. PP., 1897, xxi, p. 37.

The increasing prevalence and severity of diphtheria in London in the 1890s generated much interest and alarm among the preventive authorities. Although the number of cases occurring seem to have been much on a level with scarlet fever, and in some instances was certainly less (compare the composite maps for Newington,(Maps' 29, 40) which reveal that diphtheria had a rather lower density across the parish generally in 1890-99), the mortality rates were considerably higher. In Newington, for example, the scarlet fever death rates fluctuate between 2.4% and 6% of cases; the diphtheria fluctuation is between 12.3% and 27.3% over the same period.[1] In Camberwell diphtheria mortality reached a peak at 95% in 1895, but fell sharply in 1896 to a mere 7.7% - which dramatic fall was attributed by Stevens to the use of anti-toxin in treatment.[2] Unfortunately, the corresponding Newington rates (Fig. 12) demonstrate no parallel to prove the effect of anti-toxin, although the declining curve for hospital deaths may be an indication of its increasing use and success, in spite of the upturn in deaths for 1900. Certainly, in this year the highly efficient MOH for St. George, Frederick Waldo, remarked that the decrease in diphtheria deaths in his parish was " probably" due in a great part to anti-toxin treatment.[3]

A reasonably detailed picture of the progress of diphtheria in three parishes during the later decades of the century can be established from the MOHs' records. The Camberwell picture is perhaps the clearest, although lacking the intimate detail provided by the Newington disease maps. Concern over diphtheria began in Camberwell as early as 1883, when Bristowe noted that the disease was more fatal in the parish than he had

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1. Figs. 7 and 12.

2. Med. Off. Ann. Rep., Camberwell, 1896-97, p. 7.

3. Med. Off. Ann. Rep., St. George, 1900, p. 10.

ever known it, and was equally " of unprecedented fatality throughout London" .[1] In 1888-9, diphtheria caused a higher mortality in London than ever before, although this degree of fatality did not extend to Camberwell.[2] In the following year, the disease was again increasing.[3] In 1894, Bristowe remarked on the " remarkable and disquieting" increase in diphtheria in recent years, more particularly as the increase in the towns had been paralleled by a subsidence in the country, where the disease used chiefly to prevail.[4] From 1894 diphtheria is a constant feature of concern. In 1899, Stevens again recorded a " striking increase" in both notifications and deaths from diphtheria: the total was nearly the same as in 1898,[5]

> although it is a good way behind 1897, when we were nearly at the top of the tree.

In St. George, the progress of the disease is patchily chronicled;[6] in Newington investigations centre very largely on the high density of cases on the Surrey Gardens Estate, but the disease maps for 1890 to 1899, and the composite map for these years (excluding, as ever, 1897) give the fluctuations in incidence and locality, and reveal the areas sustaining the highest density of cases. That the Surrey Gardens Estate was indeed among the latter, the maps leave little doubt, but the scarlet fever map reveals the estate as being particularly susceptible of that disease also. Other areas exceptionally affected by diphtheria include

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1. Med. Off. Ann. Rep., Camberwell, 1882-93, p. 108.
2. ibid., 1888-89, p. 103.
3. ibid., 1889-90, p. 116.
4. ibid., 1893-94, p. 498.
5. ibid., 1899, p. 9.
6. The surviving diphtheria map for St. George (1893) reveals very little in its isolation. The scattering of diphtheria cases for this year fall almost entirely in comfortable and mixed streets; Southwark Collection, Map 218.

the Dante Street/Holyoak Road triangle (pale blue, and a coster area), the Pollock Road/Munton Road block (comfortable pink) and immediately north of the Victory Place Board School , and, to a slightly less degree, the Sayer Street/Lion Street block, and the streets between Devonshire Street and the railway line, at the back of St. Mary's Recreation Ground (dark and light blue). Newington Workhouse and neighbouring Selan Street also stand out to a certain extent. Densities are also noticeable, though less so than in the comparable scarlet fever map, in Brandon Street (mixed) and Poplar Place (comfortable). Aldbridge Street (comfortable) on the other hand, stands out for diphtheria density, but not for scarlet fever.

The insights which the preventive authorities had into the movements of the disease were somewhat uneven. Although early placed among the contagious diseases.[1] the miasmatically based connection between diphtheria and drains remained current for longer than for almost any other disease. Even the most able of the highly trained generation of medical officers which began to take over London prevention in the 1890s might not be free from this association.

According to Newsholme, it was established " almost as an axiom" at this period that there was a close ætiological connection between damp houses and diphtheria.[2] Bristowe remarked in 1894 that the disease was generally attributed to imperfect drainage and emanations from sewers, even though Dr. Thorne Thorne[3] had demonstrated in his lectures, using information collected over many years by his inspectors, that there was no clear evidence of this connection, and that the increase of diphtheria in London had taken place in spite of great improvement

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1. Med. Off. Ann. Rep., Camberwell, 1858-59, p. 26.
2. Newsholme, op. cit., p. 168.
3. Richard Thorne Thorne, principal government Medical Officer, 1892-1899.

in the drainage system.[1] A decade earlier, Bristowe had noted his objection to the claim of a local practitioner that the high diphtheria rate in his practice was due to " certain local causes of insalubrity" :[2]

> ... considering that the chief mortality from diphtheria in the parish occurred away from such nuisances as Dr. Ure was inclined to attribute the disease to, I see no sufficient reason to adopt his suggestion as to its causation.

The long surviving connection between diphtheria and drains and damp (the two closely associated) remained a part of the MOH's approach to the disease throughout the 1890s, despite the discovery of the diphtheria bacillus. Francis Stevens in 1897 thought that the great amount of drainage work done in Camberwell and in London generally had done something to decrease diphtheria, although in his opinion ground water levels were more important than bad drainage.[3]

> Formerly the ground water was able to find its way through the leaky joints in the drains in the same way that water passes into the pipes used for land drainage, the result being that the subsoil of houses was fairly dry; modern drains, however, are rightly made water-tight ...

George Millson, in 1896 produced a lucid and objective report on diphtheria for the perusal of Newington's Vestry.[4] In this report he initially described diphtheria as being of " specific infectious nature" , caused by the activity of the Klebs-Loeffler bacillus. The influence of drain-theory rapidly led Millson to modify this position in his report: if bad drains did not in themselves cause diphtheria, they undoubtedly assisted very materially in spreading the complaint by preparing the ground for it:

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1. Med. Off. Ann. Rep., Camberwell, 1893-94, p. 499.
2. ibid., 1882-83, p. 109-110.
3. ibid., 1896-97, p. 14.
4. Public Health and Sanitary Comm. Mins., Newington, 19th September, 1896.

> The importance of good drainage of a house, proper ventilation and dryness of the basement floor cannot be overestimated. Nothing in my opinion is so certain to lead to ill-health in children as locating them in a cellar that is dark, ill-ventilated and damp.

Millson's further experience of the disease in the parish over the next few years changed his opinions however. He was particularly influenced by his experience of the behaviour of the disease:[1]

> I was astonished to see how the disease cropped up in different parts of the parish, for although the particular house was thoroughly disinfected after the speedy removal of the patient to hospital, and no further case occurred in the family, yet the disease made its appearance at spots the most unlikely imaginable, and the patient affected was very often a child that had not been out of the house for weeks past, nor in contact with school children.

This passage is interesting in several respects, not least because Millson seems unable to make the mental leap to perceive that infection might be brought in from outside the house, by persons not susceptible to the disease who had yet been in probably unknowing contact with the disease outside. Millson's observations served simply to confirm in him conviction of the drain connection of diphtheria. At the close of the report in which the above passage occurs, he concludes that diphtheria is largely due to the fouling of the subsoil by rainstorms, " of which we have all complained for years past" . He stated that the beginning of the increase in diphtheria in the early 1890s seemed to coincide with the time at which complaints were first made of the periodic flooding of the parish, and he was sure that the matter called for serious attention by the LCC to the capacity of their sewers.

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1. Med. Off. Ann. Rep., Newington, 1898, p. 164.

Yet Millson did not entirely deny the contagiousness of diphtheria for also in 1898 he claimed to have proved that schools helped the spread of the disease, notably the schools at Victory Place and Sutherland Square, where in both cases the infants departments had been centres of infection.[1] The role of schools in the spread of diphtheria was a subject of vigorous debate in preventive circles in the 1890s. In his report of 1896, Millson gives a summary of the arguments in the debate,[2] which focused on whether or not the extension of schooling broughtabout by the 1870 Education Act had caused the great upsurge in the incidence of diphtheria from the 1880s. The debate waxed particularly from 1894 on. The principal evidence advanced by those emphasising the role of the schools was drawn from the research of Shirley Murphy, medical officer of the administrative county of London, who had shown that diphtheria was most prevalent among children at the school ages of 3 to 10 years, and further that, once allowance was made for the incubation period of the disease, a marked decline in the number of cases occurring in August, during the period of the school holidays, could be traced.[3] Arguments on the other side ranged widely: from the fact that school age began at 4 not 3, through the points that a very large number of children were affected under that age who did not go to school, that the initial cases in houses were often among children not attending school, and that the Board Schools first came into existence at the beginning of the decade 1871-80, during the whole of which period there was but a slight increase in the disease.

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1. Med. Off. Ann. Rep., Newington, 1898, p. 163.
2. Pub. Health and San. Comm. Mins., Newington, 19th September, 1896.
3. Newsholme, op. cit., p. 135.

Millson himself, in 1896, came down cautiously in the middle of these arguments.[1]

> There can be no doubt but that the school does, to a certain extent propagate the disease, although in my opinion not to the extent that the supporters of the school influence theory would have us believe.

Frederick Waldo of St. George, however, in 1898, had " no doubt" that population density and " the modern system of Board School education" had a considerable influence on the spread of the disease.[2] Newsholme, taking a more panoramic view, admitted that this system was an important factor in the spread of diphtheria, but pointed out that, from the international perspective, notwithstanding compulsory school attendance since 1871, London even in the maximal epidemic year 1893, presented no more diphtheria in proportion to her population than was constantly epidemic in Paris and Berlin.[3] Further, in Christiania, Stockholm and Copenhagen, where school attendance had been compulsory for at least 50 years, there had been very great increases in diphtheria since 1880, which could not be associated with any increased enforcement of school attendance.[4]

From Camberwell comes more specific illustration of the school infection problem. In 1896, Camberwell was in the unenviable position of being the parish in which was recorded the greatest number of diphtheria cases in London. The total cases registered for the year amounted to 1,410; in the period June 1st to December 31st, there were 971.[5] Four schools came into question because of their supposed influence in spreading the disease, since the attendance area covered

(page 220 follows)

1. Pub. Health and San. Comm. Mins., Newington, 19th September, 1896.
2. Med. Off. Ann. Rep., St. George, 1898, p. 13.
3. Newsholme, op. cit., p. 136.
4. ibid., p. 137.
5. Camberwell Vestry Mins., 24th March, 1897.

the badly affected block to the centre-east of the parish. Children from this area did not, however, attend one of these schools, while there were pupils at all who came from outside the area. The health departments' records showed that there were, in the affected area (population in 1896, 49,472), 204 notifications of diphtheria in 1895, and 577 in 1896. Notifications in the non-affected area (population 203,600) were 686 in 1895, and 833 in 1896.[1] Since the age groups most affected in the sensitive area appeared to be the 4-10s and the 12-13s, the common factor which first cameto Stevens' mind was school attendance, although he admitted that it was difficult to discuss the possibility of infection other than through the schools without confusing the issue. It was noted, however, that in " a good many instances" a number of children attacked lived in the same street, although attending different schools.[2] This was particularly the case in Attwell Street, where children attended both Wood's Road and Choumert Road schools. The figures for three schools revealed that cases had a great tendency to occur in groups, suggesting common sources of contagion rather than infected school buildings; at the Bellenden Road school cases occurred randomly among different departments and different classes.

Although four schools had been implicated as sources for the spread of diphtheria in 1896, it was only at the Choumert Road Board School that there seemed to be any direct connection between institution and disease. Stevens observed that until early February 1896, diphtheria seemed equally diffused about the parish, but that in mid-February, it began to show a special incidence among children who lived in the

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1. Camberwell Vestry Minutes, 24th March, 1897.
2. ibid.

neighbourhood of Rye Lane and Choumert Road, so that he thought it necessary to arm himself with the power to close the school if necessary before the Vestry separated for the Easter vacation.[1] Closure did not prove necessary, but in early May, there was a series of cases among those who lived in houses where there were attendants at the Choumert Road school. Although the disease was by no means confined to this part of the parish at this period, it did seem that it was especially active among children of school age, and before Easter among girls and infants at the Choumert Road School.

A particular school was again implicated as causing undue diphtheria incidence in 1899. The Heber Road Board School was in fact closed for a time in the November of that year, because of the 27 primary cases of diphtheria which had been traced to its girls and infants departments during the month of October.[2] The problems at Choumert Road three years previously had also centred on the girls' and infants departments, and in general, it seems, these two groups were more prone to diphtheria than boys of school age. The explanation for this was deemed to be on the one hand, that the age group 1-5 was simply more vulnerable, on the other that the different social experiences of the two sexes exposed the girls to a greater risk of infection and a lowered resistence:[3]

> ... which is explained by the former (girls) being more at home and the more frequent habit of kissing amongst girls.

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1. Med. Off. Ann. Rep., Camberwell, 1896-97, p. 10.
2. Med. Off. Ann. Rep., Camberwell, 1899, pp. 10-11.
3. Public Health and Sanitary Comm. Mins., Newington, 19th September, 1896.

Social habit in fact probably had a far greater influence than was often allowed for in spreading not only diphtheria but the communicable diseases in general. The pattern of playing areas was recognised as important, quite apart from school influence,[1] and Francis Stevens also condemned the rigour of the London School Board, whose regulations, to encourage educational enthusiasm, required a high level of attendance to secure eligibility for school prizes, etc.[2]

Children were not the only social factors in the spread of disease. Much depended on the habits of household, street and neighbourhood. Frederick Waldo, investigating an epidemic outbreak of diphtheria in Cornbury Street in 1896, was insistent that it could not be traced to defective drainage: the social habits of the street were implicated.[3] Cornbury Street was a narrow cul-de-sac of 47 two-storied houses, inhabited by carmen, watermen, and others of the labouring classes, and here, between July 14th and October 8th, there were 14 cases and 5 deaths from diphtheria. Waldo's description of the street is eloquent of the situation:

> This street a blind alley, with its closely packed population forms a sort of colony where a good deal of social intimacy prevails. During the earlier stages of the out-break I learn that patients were visited freely by neighbours, including children, and that funerals became the subject of special gatherings in the houses of mourners.

The intricate social habits of a locality were, it was becoming clear, a major factor in determining the incidence and patterns of communicable disease.

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1. Camberwell Vestry Mins., 24th March, 1879.
2. Med. Off. Ann. Rep., Camberwell, 1896-97, p. 14
3. Med. Off. Ann. Rep., St. George, 1896, p. 34.

MEASLES AND WHOOPING COUGH

Measles and whooping cough were both juvenile diseases of major importance in the nineteenth century, and both were major killers, although they received little publicity compared to smallpox, or even scarlet fever and diphtheria. The obscurity in which the patterns of these widespread nineteenth century afflictions lie is the result of a number of factors, not the least of which was their long established endemicity and apparent mildness in the initial and crucial stages of their development. Both these factors encouraged parents to treat the diseases as of little consequence. Among poor urban populations, parents " commonly look upon Measles as a necessary and unimportant evil" , wrote Frederick Waldo.[1] Neither measles nor whooping cough was made notifiable in 1889, for the reason that the infectious period occurred in the early stages of the disease, when it was impossible to diagnose with any certainty. The prevalence of these diseases through the century can therefore only be gauged from mortality statistics, and no estimate can be made of fluctuating virulence. Bristowe placed whooping cough and measles with scarlet fever in his 1858 discussion of diseases that, " have always been present among us, and will possibly never vanish" ,[2] and both are rarely mentioned in the medical officers' reports before the 1890s. Whooping cough was briefly epidemic in 1872-3;[3] the Registrar-General spoke of measles and whooping cough " reigning epidemically" from north to south in 1867, and in 1868 whooping cough was epidemic all over London.[4]

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1. Med. Off. Ann. Rep., St. George, 1892, p. 18; see also, F.B. Smith, The People's Health, (1879), p. 146, and Public Health, III, 1891, p. 508.
2. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 29.
3. Med. Off. Ann. Rep., Camberwell, 1872-3, p. 46.
4. PP., 1867-68, xix, p. 48; PP., 1868-69, xvi, p. 60.

The tabulation of local deaths for Newington and Camberwell does something to modify the general impression of the national graphs for whooping cough and measles mortality (Figs., 13,14). The curves for whooping cough by and large bear out the national picture, which registers a gradual peak of deaths between c. 1860 and 1870, and thereafter declines. Camberwell consistently achieved a high level of mortality, with repeated high epidemic peaks, between 1878 and 1890, declining unevenly thereafter. In Newington, peak mortality was achieved unmistakably in 1882, and the curvethen descends in a rather gradual fashion, with peaks in 1887, 1891, 1893 and 1898 (Fig. 16). In 1892 indeed, Millson remarked on the widespread nature of the disease in his parish during the year 1891-2, observing that the fatal cases occurred with scarcely an exception in the families of the very poor.[1]

> One can easily understand the reason for this high mortality in a parish such as ours. The disease can only be combated by measures requiring time and care, both of which things poor persons find it difficult to give their children.

The relative neglect which was so widespread a feature of public response to childrens' diseases at this period appears to have been especially so in the case of measles and whooping cough. The panic qualities of scarlet fever and diphtheria, for instance, had assured their treatment in the Asylum's Board hospitals from the early 1870s, when these hospitals began to be built. Neither measles nor whooping cough cases were admitted, partly, no doubt because they were extremely infectious, but also because they did not fall into the category of fever diseases. The high mortality of these diseases was of little influence in securing

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1. Med. Off. Ann. Rep., Newington, 1891-92.

hospital access, partly perhaps because this mortality fell mainly among the poor. By the 1890s, it was recognised among the preventive authorities that deaths from measles at least were principally due to neglect. Francis Stevens observed that the large number of deaths from measles every year was,[1]

> ... almost entirely due to the fact that children are exposed to draughts and chills while still suffering from the disease.

Frederick Waldo, noting that measles caused the highest number of deaths among the preventable diseases, stated that the case mortality among the "badly nurtured children of St. George's" was undoubtedly augmented by the frequent unhealthiness of homes, and the want of pure and heated air, coupled with the indifference and neglect of ignorant parents.[2] Thorne Thorne, the current medical officer of the Local Government Board, remarked that the difficulties of dealing with the disease, the death-rate from which stood higher in the quinquennium 1890-94 than that of any other preventable disease except whooping cough and diarrhoea, stemmed partly from its extremely infectious character, but equally from the slight estimation in which it was heldby the general public.[3]

Concern over measles was certainly growing among preventive authorities in the 1890s. The realisation that measles and whooping cough were causing a larger mortality than any of the other preventable diseases except diarrhoea seems to have fallen upon the sanitarians with great suddeness at the close of the 1880s. Probably the very severe measles

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1. Camberwell Vestry Mins., 30th November, 1898.
2. Med. Off. Ann. Rep., St. George, 1892, p. 17.
3. PP., 1895, 1i, p. 408.

epidemic which struck London and the country in 1888 had a good deal to do with the timing of this enlightenment. In the Metropolitan Asylum's Board's districts, deaths from measles averaged 133 weekly during the winter of 1888-89, a level of mortality which far exceeded that from smallpox at any period in the Board's history except during the 1870-72 epidemic.[1] The problem of controlling measles was complicated, however, by public indifference and hence the obscurity of much of the incidence of the disease. Thorne Thorne, discussing Dr. Thompson's essay on measles in 1895, emphasised Thompson's conclusion that to restrain the spread of the disease in infected households, the attention paid to such households by the preventive authority must be greater as the estimate of the gravity of the disease by the public was less.[2]

> Little representation from a sanitary authority may be necessary to secure proper isolation, disinfection, and other necessary precautions in the case, say, of a disease so much feared by the public as smallpox, but at houses invaded by measles, it is necessary that repeated and detailed inquiries should be instituted by the sanitary officer in every case, if the spread of the disease from such houses is to be adequately controlled.

Schools, once again, constituted a special problem. If on account of any exceptional prevalence of measles a general closure of the public elementary schools had to be resorted to, similar measures would have to be applied to all schools in the affected neighbourhood, Sunday and private schools equally with public ones, as well as other gatherings of children, before monitoring could be really effective.[3]

Increasingly, as the 1890s advanced, the local MOHs and sanitary authorities began to agitate for the compulsory notification of measles, and for the increased opportunities for disinfection and isolation

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1. G.M. Ayers, England's First State Hospitals (1971), p. 88.
2. PP., 1895, 1i, p. 410; Dr. Thompson's report, pp. 567-626.
3. ibid.

which this would bring.[1] The expense involved in notification and hospitalisation was considerable, however, and the infectiousness of measles meant that these measures would be of little use unless every single case of the disease was effectively brought to the attention of the local authorities. The likelihood of this degree of efficiency being obtained was everywhere tacitly admitted to be small. Besides, it was pointed out that there was no certainty even that these measures would diminish the toll of the disease. Diphtheria notably had been increasing, in spite of notification and the hospital system.[2] Given the high incidence of measles, the costs of the system were prohibitive when its effectiveness could not be guaranteed. The public health sub-committee of St. George's Vestry investigated the matter in 1896, after Waldo had recommeded the Vestry to request that the Local Government Board make the disease notifiable. Using as a basis for estimate Dr. Thompson's figure of 28 cases of measles per thousand population per annum, the committee estimated there to be some 1,680 cases annually in the parish. The fees to doctors for notification would be £210 p.a. Isolation at home would be impossible in the majority of cases, given that there were about 4,200 one room tenements in the district. At the lowest estimate, 35,000 visits would have to be paid by sanitary officials to 1,680 cases: over 100 visits a day. For this at least six sanitary officers would be needed, at an annual salary bill of £1,000 p.a., and these numbers would have to be increased in times of epidemic. The cost of hospital isolation would be "enormous", probably £1. 7s. 5d. per patient per week. In addition there would be the cost of disinfectant, which in St. George's parish would be at least 6d. in the

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1. Public Health and Sanitary Comm. Mins., Newington, 1900; Lancet, 6th June, 1891, p. 1264; Camberwell Vestry Mins., 6th July, 1898.

2. Public Health and Sanitary Comm. Mins., St. George, 27th November, 1896.

pound, and the cost of compensation for lost work time. The committee really could not recommend the vestry to take any further action in the matter.[1]

The number of cases of measles occurring annually, and the social context in which they occurred were powerful factors in inhibiting the control of the disease. Millson estimated in 1896 that the number of cases annually in Newington was something in the region of 1,500 of which 400 were primary cases (the first in a family).[2] Waldo noted that the disease did little harm among the well-to-do, but thought that among the poor, 20-30 deaths took place in every 100 cases.[3] Here the question was once again that of health education, and of a general improvement in housing standards, and the care and nutrition of children rather than of the imposition of rigorous preventive standards. Waldo was of the opinion that notification of measles was desirable, not for the actual prevention of the disease, but rather for preventing the deaths which accrued from the complications which followed the illness itself. In a poor parish such as St. George's, it was the hospital treatment following on notification which would save lives: the disease itself there was little hope of preventing.[4]

Although agitation for the notification and hospital treatment of measles gathered force in the last years of the century, there was no parallel agitation for preventive action against whooping cough. The difference here lies in the relatively little that was known about the mechanisms of whooping cough. That it was very infectious and frequently fatal was all too well observed, but medical expertise had

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1. Public Health and Sanitary Comm. Mins., St. George, 27th November, 1896.
2. Public Health and Sanitary Comm. Mins., Newington, 19th October, 1896.
3. Med. Off. Ann. Rep., St. George, 1897, p. 10.
4. ibid.

not as yet discovered a means of diminishing either the incidence of the disease, or its mortality. As with measles, a central problem in containing the spread of whooping cough was the school system, and the huge reservoir of victims which it provided for diseases where the period of infectivity was greatest before the symptoms of illness became apparent. The conflict between health and education at this level was also increasingly sharp: as school attendance was more and more strictly enforced, so the agency of the schools in spreading these diseases became more potent.[1]

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1. Med. Off. Ann. Rep., St. George, 1892, p. 18.

CHAPTER IV

PANDORA'S BOX ; CONTROLLING AN ENVIRONMENT

The every day business of the sanitary departments was for many years, and in accordance with the filth theories predominant in the early years of their establishment, concerned with the environment and conditions of daily life. Drainage, sewerage, water supplies, the control of miscellaneous "nuisances" chiefly connected with industry, and the house-to-house inspection of the poorer quarters of the parish constituted their main preoccupations. The ultimate aim of the sanitary authorities was to remedy the health hazards which hitherto largely uncontrolled urban development had permitted to arise, and to so monitor conditions in the parishes as to prevent their recurrence in the future. The vestries' official task of improving sewerage and drainage, as well as lighting, paving and general improvements,[1] and the medical officers' in connexion with the detection and control of infectious diseases,[2] together encompassed the widest sphere of sanitary supervision. In practice, however, it is well known that apparent responsibility was in no way matched by legal provision or actual performance, and the local authorities were much criticised for their negligence by contemporary observers.[3]

Examination of the local evidence, however, reveals a more complicated picture than the contemporary critics saw, or perhaps, than they were willing to allow. For most of this period, legislative enactments were far from providing a satisfactory framework for sanitary improvement. The Royal Sanitary Commission, for instance, found no less than 15 acts constituting the current general sanitary code, and "rather more than 30 overlapping, unrelated, obscure and inconsistent

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1. 18 and 19 Vict., c. 120.
2. ibid., clause cxxxii.
3. W. Rendle, London Vestries, (1865); E. Bowmaker, Homes, (1898); Jephson, Sanitary Evolution (1907).

statutes"containing subsidiary legislation on topics affecting public health.[1] Until the Public Health (London) Act of 1891, there existed no coherent, comprehensive sanitary code for London, and most sanitary departments simply made use of such statutes as they found most useful to work. Thus, Dr. Dixon of Bermondsey found no difficulty in getting anything done that required doing under the Nuisances Removal Acts,[2] while Shirley Murphy (St. Pancras) found these "very tedious" to administer, and preferred to work through the Metropolis Local Management Act.[3] The degree of efficiency obtained varied with both vestry and medical officer - Dixon, for instance admitted that he did not go out to look for nuisances - and the frustrations experienced by a conscientious sanitary department on account of confused wording and inconsistent drafting in enactments could be very great.[4]

The nature of the local sanitary problem also, naturally, varied from parish to parish, depending on social structure, types of housing, the extent and nature of industry, property ownership, and the length of time the parish had been settled. It appears, for instance, from the parish records that Camberwell, which had only been exposed to industrial development since the opening of the Surrey Canal in 1811, struggled far more vigorously against industrial nuisances than either St. George or Newington, which had contained such activity since the early eighteenth century. The Camberwell vestry minutes record a constant list

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1. R.S. Young, "Sanitary Administration under the Local Government Board, 1871-1888", Oxford University Ms. B. Litt, 1964, p. 4.

2. RCHWC, q. 4513.

3. ibid., q. 1613, 1617.

4. See above, Chapter 1, pp. 41-45.

of industrial nuisances, from naphtha factories, brick works, fellmongers, tallow smelters, floor cloth manufacturers and the like,[1] to which there is nothing similar in the records of the other two parishes. Occasional instances were noted by the Medical Officer in the Newington annual reports; in 1857, for instance, the offensive trades brought to his notice were a wool manure factory, a quinine factory, three bone-boiling, and one tripe and cats meat boiling establishments, a soap makers, a glue manufactory, a leather enamellers, and a pig-keepers.[2] A decade or so later, Iliff noted that the principal nuisances in the parish arose normally from the preparation of catgut, fish-curing and the mixing and storing of artificial manure,[3] and in 1886 the Daily News carried an article in which the Lock's Fields and Walworth Common area were remarked on as the headquarters of London's fish-curing trade.[4]

> All travellers over London Bridge must be familiar with the sight of long strings of barrows and carts laden with loose fresh fish going Surrey-wards ....

The type of industry carried on in the three parishes seems to have been very similar. Mayhew remarked on the industries of Friar Street in St. George's : they were gas works, soap boiling factories, tallow smelters cat and other gut manufacturers, "etc.".[5] One of the few nuisances to filter through the vestry minutes was a complaint from the police of the large number of cattle and sheep being driven by drovers into the Lambeth Road and adjoining by-streets on market days,

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1. Camberwell Vestry Mins., 6th January, 1861; 18th September, 1861; 8th October, 1862; 15th July, 1868; 8th June, 1870.

2. Med. Off. Ann. Rep., Newington, 1857, pp. 30-34.

3. Ibid., 1868-69, p. 61.

4. Daily News, 3rd November, 1886, quoted Newington Ann. Rep., 1886-87, p. 10

5. H. Mayhew, London Labour (Dover, ed., 1968), vol 11, p. 423.

"and there left for some time to lie down or wander about".[1] The ancient reputation of the south side of the river as an unsavoury and lawless district, beyond the regulations which governed the rest of the city, had some effect in attracting the offensive trades to the area. Here they clustered together, under the protection of numbers, as Henry Bateson pointed out:[2]

> The bone-boiler will point to the walls of the cat-gut maker, covered with myriads of blue-bottle flies, their backs gleaming in the sunshine, and will say, 'That it is, from thence arises the only source of complaint'. Whilst on the other hand, the cat-gut maker points to the thick and fetid steam rising up from the seething cauldrons of the bone-boiler, and asks, 'Do you wish for further evidence?'

St. James' Street, Hatcham, Camberwell, provides a case in point. In 1868, it contained on its east side Lambe and Sterry's Works, a soap works, a spiced beef factory, the Naples Colour Works, a bone factory and a tallow smelters, while on the west side stood Whiting's Colour Works, and an Enamelling and Japanning Leather Works.[3] Many of these works were productive of offense, and the battle to remedy the nuisances was continual, although complicated by the temerity of "certain auctioneers, valuers and compensation surveyors" who advertised premises in the Hatcham area as "admirably adapted for any work deemed offensive" and as "situated in a privileged neighbourhood".[4]

Except for certain offensive trades under the regulation of the Metropolitan Board of Works, all that could be required in most cases of trades nuisance was that the best practicable means should

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1. St. George's Vestry Mins., 18th July, 1859.
2. Med. Off. Ann. Rep., St. George, 1863-64, p. 19.
3. Camberwell Vestry Minutes, 17th June, 1868.
4. ibid., 15th July, 1868.

be adopted to minimize the nuisance created. It was in these circumstances that more or less nuisance became permissible by law, and at times led to long wrangles between the sanitary departments and uncooperative offenders. In some cases the trial of strength between the two went on for several years, as it did over Edgington and Company's fish manure works in Rotherhithe New Road (Verney Street). These premises were first mentioned in the vestry minutes in July 1873, and again in December of that year.[1] In his next annual report, Bristowe outlined the department's proceedings. The manure works were carried on in and around three small sheds in an open field on the north side of the Surrey Canal, far away from any dwelling houses, but near the gas works on the other side of the Canal. The business was carried on chiefly in the winter months, when fish heads were brought in carts and mixed outside the sheds with "various other manurial ingredients" such as sugar-scum, spent schumach, wool waste from the fellmongers' yards, etc. In summer, fish heads were no longer brought and only the other ingredients were stored and dealt in. As the summer advanced, however, complaints grew loud, and it was decided to take proceedings against the proprietors. A compromise was reached in the end, with the proprietors undertaking to remove all offensive accumulations from the sheds within a given time, and to bring in nothing fresh until the fish manure manufacture began again in October, when the situation would be revised.[2]

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1. Camberwell Vestry Minutes, 17th July, 1873; 18th December, 1873.

2. Med. Off. Ann. Rep., Camberwell, 1872-73, pp. 53-54.

It seems that after this the situation improved for a while, but in 1879, it was reported that Messrs. Edgington's manure works were still "after two or three years" exercising the Metropolitan Board of Works, but that the Vestry thought it had now taken steps which would relieve the nuisance.[1] Eight months later, the Metropolitan Board started proceedings against the firm: until the property was properly drained, it was recorded, the nuisance would continue.[2]

In the autumn of 1880 comes the final entry. The Verney Road Manure Works had been a constant source of trouble to the Sanitary Committee and officers for some years; in the last 12 months the Company had been frequently before the magistrates; but now they had undertaken in writing to remedy the situation, and the Committee had made a resolution to take careful record of any future nuisance, its nature, extent and duration.[3]

The Camberwell experience shows that the persistence of the sanitary departments and the rigour of the magistrates were often successful in remedying such industrial nuisances, despite the difficulties which Bristowe recounted in his 1884 report on sanitary conditions in relation to the housing of the very poor. In 1868, for instance, two small businesses in Hatcham were closed; Mr. Townshend's bone-boiling business at Rose Cottage in accordance with a magistrate's order;[4] Mr. Stansfield's tallow smelting works after total fines of ten pounds within a few months.[5] From none of Bristowe's reports

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1. Camberwell Vestry Mins., 17th September, 1879.
2. ibid., 19th May, 1880.
3. Camberwell Vestry Mins., 10th November, 1880.
4. ibid., 4th November, 1868.
5. ibid., 29th July, 1868.

on trades nuisances does any hint come of a crusade against the root causes of disease.[1] There are none of the ruminations on disease causation which characterise Bateson's investigation into offensive trades in St. George-the-Martyr. Bristowe's attitude seems to have been severely practical: if a business disturbed the peace of residents, then the nuisance must be remedied. The offense of the Kent Traction Company, for instance, which collected stable manure from all London and removed it into the rural parts of Kent in a train of four vans drawn by a traction engine, was not only that the accumulated manure stank, but also that the engine produced too much of a disturbance.[2]

It was perhaps the severe practicality of Bristowe's surgical training, the detachment of the highly trained mind, which determined his non-commital approach to the problems of environmental improvement . In only one instance was he shaken out of his detachment - in his 1858 outburst against cesspools.[3] Bateson's attitude was very different. He could not resist speculating on disease causation, read widely (as the citations in his reports show), and was much given to elaborating his ideas in highly coloured language in the pages of his reports. In 1863, he undertook an investigation into the offensive trades of Green Street, which lay between Pocock Street and Friar Street, close to the London, Chatham and Dover railway line, largely, it seems, because deaths from zymotic diseases were not distributed as he had expected. In streets where offensive trades were carried on, especially those connected with the decomposition of animal matter,[4]

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1. Med. Off. Ann. Rep., Camberwell, 1859-60, p. 16; 1868-69, p. 33-34; 1870-71, p. 54; 1872-73, p. 51-54.
2. ibid., 1872-73, pp. 51-52.
3. ibid., 1857-58, p. 34-35.
4. Med. Off. Ann. Rep., St. George, 1863-64, p. 18.

> we should have felt confident of meeting with a large mortality, and that in them, Zymotic diseases would manifest themselves in their most malignant and fatal type.

In Green Street, however, where nearly all these trades were centred, there were but two deaths, one from typhus and one from convulsions, in 1863; and, while cholera was raging in streets on almost every side, Green Street "almost or altogether" escaped.

Bateson was aware that this was not an exceptional phenomenon; it had been observed by Greenhow, the first lecturer in public health at St. Thomas' Hospital, as well as in other European countries. He had evidently read, and been deeply impressed by, Parent-Duchatelet's Les chantiers d'equarrissage de la ville de Paris (1832), for he quoted the case of the charnel yard of Montfaucon[1] in support of his point, with an unplaced citation from Parent-Duchatelet himself.[2] The common gist of these various observations was not simply that there was less disease in the streets occupied by offensive trades, but that the people who worked among them were generally healthier than the average city-dweller. Bateson instanced a proprietor in Green Street who pointed to his own children, some of them grown up, as proof of the beneficial effects of the atmosphere in these areas, while the workmen he interviewed declared that they were never ill, could eat anything, and drink heartily.[3] The necessity of explaining this curious

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1. see also L. Chevalier, Labouring Classes and Dangerous Classes (English ed., 1973), pp. 210-214.

2. Med. Off. Ann. Rep., St. George, 1863-64, p. 19.

3. ibid.

phenomenon in accordance with the miasmatic theory whose principles he adhered to drew from Bateson the following explanation, supported by the, to us more convincing, observation, that the workmen employed were of good constitution (the delicate and ailing would never undertake such unpleasant work), were liberally paid and could command a substantial diet.[1]

> Effluvium is lighter than common air, and consequently, is carried away from its source, to fall and work its evil influences afar off. Indeed, epidemic poison may perhaps undergo some change or be decomposed ... the effluvia destroys the morbid poison. The power which these effluvia may have for evil, will be modified by the locality in which noxious trades are carried on, and by the manner in which they are carried on, as well as by the nature and state of the decomposing matter.

It is fairly characteristic of Bateson's style that his nonsense on disease causation should be supplemented by one or two shrewd practical observations; for instance, that offensive trades not only posed problems in themselves, but were also serious obstacles to improving a neighbourhood, because no one cared to build there, so that the area remained stationary or deteriorated. [2]

South London did not, at this period, contain any "natural disaster" on the scale of Montfaucon in Paris, where cesspools covered an area of 32,000 square meters, with a further 12 acres given over to dry refuse and horse butchers' yards.[3] The Surrey Canal, however, constituted a constant nuisance, and caused anxiety as a probable health hazard at times when cholera threatened. Bathing in the Canal was a common pursuit

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1. Med. Off. Ann. Rep., St. George, 1863-64, p. 20.
2. ibid.
3. Chevalier, op. cit., p. 210.

for many years,[1] and in the last years of the century was still a pastime favoured by the boys of Camberwell.[2] Disorder and indecency were at times complained of in connexion with the bathing, and drownings appear to have been frequent.[3] The water of the Canal was generally filthy, but it was not until the 1890s that measures were taken to stop its pollution by the industrial concerns along its banks.[4] Fish offal was still being emptied into its waters at this period, while at least one factory cesspool was discovered to be draining into it.[5]

The health problems created by imperfect drainage and water supplies were certainly considerable at the beginning of the period, and were still not entirely satisfactory by its close. Among the most important tasks of the sanitary department was the protection of water supplies from contamination by sewage or other "noxious agents". Until the discoveries of Louis Pasteur in the 1860s and 1870s, and the subsequent acceptance of the germ theory, the quality of water supplies was judged by the amount of visible impurities present, and by the amount of organic matter present as determined by chemical analysis.[6] Bristowe, for instance, recorded in 1870 that the Kent Water Company's water, although containing a large proportion of organic solids, was always "bright and clear and drinkable";[7] a judgement which would have

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1. Camberwell Vestry Mins., 4th July, 1877; 20th June, 1889.
2. Camberwell Sewers and Sanitary Comm. Mins., 27th June, 1893.
3. Camberwell Vestry Mins., 4th July, 1877; Sew. and San. Comm. Mins., 27th June, 1893.
4. Camberwell Sewers and Sanitary Comm. Mins., 6th October, 1891; 13th June, 1893.
5. ibid., 27th June, 1893; 11th June, 1895.
6. H.W. Dickinson, Water Supply of Greater London, (1954), p. 112.
7. Med. Off. Ann. Rep., Camberwell, 1869-70, p. 39.

been unthinkable after the recognition of the function of bacteria. John Snow's discovery of the transmission of cholera by contaminated water, while on the one hand it drove home the importance of "pure" supplies, did nothing to dispel the illusion that clear water was good water. Bristowe was well aware of the relationship between water and various diseases, and for that reason stressed the importance of pure water for domestic - drinking and cooking - purposes.[1] He remarked that various alkaline, earthy and metallic salts caused hard water, which brought a "serious pecuniary loss", especially to the poor. More importantly, however, there was "good reason to believe" that mineral impurities exerted an influence on gravel, stone and urinary disorders, and strong evidence to show that goitre and cretinism were equally dependent on an excess of certain mineral salts in drinking water.[2] The presence of lead, mostly due to pipes and cisterns, frequently caused colic and paralysis, while organic contamination produced dysentery and bowel affections, notably cholera.[3]

In spite of the confusion between visible and invisible impurities, one thing remains clear from the records of the civil vestries, and that is that the purity of South London's water supplies continued unsatisfactory up to the establishment of the Metropolitan Water Board in 1902. The metropolitan Water Act of 1852 has been seen as a great sanitary achievement, which relieved London of water loaded with decomposed vegetable matter, and established that commodity as a "standard of

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1. Camberwell Vestry Minutes, Med. Off. Ann. Report on Water, 4th June, 1856.
2. ibid.
3. ibid.

cleanliness.".[1] This is to present a seriously misleading picture. Improvement in the quality of supplies does not appear to have come until after the Rivers Pollution Prevention Act, 1876, after which complaints as to the impurity of water died down. As late as 1892, however, George Millson was still emphasising the importance of the amount of organic matter to be found in supplies; in his opinion, Thames water - from which most of London water companies still drew their supplies - would never be free from suspicion while sewage from Windsor, Staines and other towns up-stream was still allowed to flow into it.[2] Also in 1892, a year in which water quality leapt to prominence because of the proximity of cholera across the Channel, Frederick Waldo noted that, except for the month of December, water in the parish had been "more uniformly good and less subject to violent fluctuations" than in the previous year. However, he urged the introduction of a system of double filtration as an extra precaution against the risks attending the use of sewage-contaminated Company water.[3] At this period also it was remarked that[4]

> A single epidemic might make the water of London as deadly as the climate of Vera Cruz....

while John Simon observed that water which purported to be filtered under act of Parliament had much the appearance of "third-class ditch-water":[5]

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1. Med. Off. Ann. Rep., Camberwell, 1869-70, p. 39.

2. Public Health and Sanitary Comm. Mins., St. George, 7th November, 1892.

3. Med. Off. Ann. Rep., St. George, The Water Supply in the Parish, 1892, p. 25

4. Frederic Harrison, The Meaning of History (1894), p. 437.

5. John Simon, English Sanitary Institutions (2nd ed., 1897), p. 467.

> ... of proper watchful insistence that the drinking-supplies shall be systematically guarded from pollution, there is hardly a trace to be found ... that even the London water-supply, after half-a-century of disgusting disclosures, and after very terrible disasters, is not yet secured against gross defilement, is a fact to be sufficiently gathered from the reports of the official examiner under the Metropolis Water Act .....

The official examiner had been appointed more than 25 years previously, under the Metropolis Water Amendment Act, 1871, to examine the water companies' water, and report accordingly to the Local Government Board, no doubt with a view to regulating the quality of supplies. In the troubled world of water politics, however, the appointment of a military electrician, Major Francis Bolton, to this post seems to have cast some doubts on its validity. Dr. Frankland, the eminent chemist who had been making systematic analyses of London's water since 1868, referred to Bolton disparagingly as "only .. an inspector of filter-beds".[1] In the divided world of sanitary reformers, so torn between professionally trained medical men and scientists such as John Simon, Lyon Playfair and Frankland, and the pioneer environmentalist sanitarians such as Edwin Chadwick and Florence Nightingale, such an appointment could not help but arouse adverse comment. The water question in particular had become a battle-field. Only a year previously, Henry Bateson had observed that discussion as to the best source of water supply for London still continued, "and mainly is conducted in a very angry spirit":[2]

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1. Med. Off. Ann. Rep., Newington, 1871-72, p. 126.

2. Med. Off. Ann. Rep., St. George, 1869-70, p. 39.

Some of our chief chemists and engineers told us not to fear the use of water into which immense quantities of sewage has poured. Instinct said otherwise, as did the report just presented to Parliament on the rivers Mersey and Ribble. But the Royal Commission of 1865 now declares water contaminated by sewage to be "wholesome beverage".

The medical officers of health seem to have stood slightly apart from the wrangles of the more prominent sanitarians, and to have preserved their individual judgements. Iliff observed, at the height of the ill-feeling over Bolton's appointment, that,[1]

> I can but regret the antagonism that seems inseparable from all inquiries as to the efficiency or otherwise of the arrangements of the Water Companies ... I .... anticipate that the jealous observation of each others' labours will work good to the consumers.

New protagonists and fresh, if conflicting, evidence continued to feed the debate. In 1877, for instance, Dr. Tidy, lecturer in Chemistry at the London Teaching Hospital, published analyses of the London companies' water for the previous decade, drawing the conclusion that,[2]

> the water supplied to London, the healthiest city in the world, is as excellent in quality, as it is liberal in quantity.

Henry Bateson, who recorded this, remarked dryly that the contrary opinion generally prevailed.[3] By 1882, quite apart from the official examiner, Iliff noted that there were now "three sets of quasi-official analyses" of the Thames water by eminent chemists: by Dr. Frankland,

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1. Med. Off. Ann. Rep., Newington, 1871-72, p. 126.
2. Med. Off. Ann. Rep., St. George, 1877-78, p. 18.
3. ibid.

by Professors Wanklyn and Cooper, and by Mr. Crookes, Drs. Odling and Tidy, who were acting for the water companies.[1] This was bad enough but became even more confusing, because all three took their results in different ways, "viz., per 1000,000, or per 1,000,000, or per 70,000, and moreover, different tabular divisions are used".[2]

At the local level, a clearer perspective might be put on these results, and a firmer basis for chivvying the companies be established, by the simple expedient of instituting a parish water analysis. This was one of the earliest preventive measures which Bristowe incorporated into his programme in Camberwell.[3] In the early years he performed them himself, with the assistance of Dr. Albert Bernays (1823-92), the lecturer in chemistry at St. Thomas'. Bernays subsequently became Public Analyst to the Vestry under the Food and Drugs Act of 1872, and later chemist and analyst to the Kent Water Company. Bernays and his successor, Frank Leyland Tees, became solely responsible for the analyses, but outside assistance was called in from time to time, for instance from Frankland at the Registrar-General's office, and from Dr. Letheby of the Medical Officers of Health Association.[4]

The dispute over the quality of water supplies was paralleled from about 1848 by that over the quantity that should be available for daily use.[5] Again, the 1852 Act has been seen as going far towards solving the problem of extending an acceptable level of water services to the poorer classes of London,[6] and again this has disguised the painful

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1. Med. Off. Ann. Rep., Newington, 1881-82, p. 179.
2. ibid.,
3. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 28.
4. ibid., 1868-69, p. 38-39.
5. Reddaway, op. cit., p. 124.
6. ibid., p. 130.

stages by which this service was achieved. The water supply of London derived from two main sources at this period. The chief source of supply was that provided by the London Water Companies, but up to the closing years of the century numerous wells still existed and were used widely, in spite of the persistent disapproval of many medical officers. The water from these surface wells was considered undesirable because peculiarly vulnerable to contamination; nevertheless, it was generally perferred to Company water because of its coolness and agreeable flavour.[1] Bristowe pointed out that the flavour depended on the salts in the water, and declared that some of the pleasantest waters in London had been shown to have derived from adjoining graveyards and sewers, making the amount of impurity far greater than that of Company water.[2]

In spite of such warnings, well-water continued to be popular. In 1890 there were still an unspecified number of houses in Camberwell supplied by wells,[3] while in St. George, there were eleven remaining surface pump wells in 1892. When samples of these were submitted to the public analyst for examination, they proved to be highly charged with sewage and other deleterious matters, and were forthwith filled up or closely guarded to prevent their usage.[4] In Newington, some twenty years earlier, there occurred what Iliff regarded as a "very notable case" of the union of an agreeable taste in well-water with a very unsatisfactory condition on analysis.[5] In this case, the water

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1. Camberwell Vestry Mins., 4th June, 1856.
2. ibid.
3. Sewers and Sanitary Comm., Mins., Camberwell, 22nd July, 1890.
4. Med. Off. Ann. Rep., St. George, 1892, p. 26.
5. Med. Off. Ann. Rep., Newington, 1873-74, p. 120

was so much appreciated by the local people that the gentleman on whose premises the wells were situated was giving it away freely every day. He did, however, have misgivings as to whether the water could be doing any harm - one indication that sanitarian propaganda did have some educational effect - and asked Iliff for an analysis. The result of this was to show that the water contained ten times more organic matter than did that of the Southwark and Vauxhall Company at its January nadir, and the use of the well was stopped at once. Although the well was deep and had no known source of contamination,[1]

> ... the existence of one was not difficult to imagine, when we remember the large number of old cesspools in and about all old houses and gardens, and that the soil being gravel, admits of free percolation.

The continued use of wells reflects in part popular prejudice, but also the slowness with which piped supplies reached the inhabitants of London. Although South London was served by three separate companies at this period - the Lambeth, the Southwark and Vauxhall, and the Kent Companies - all three operated under set limits, and there was no degree of competition. The controversy over the obligations of the companies to consumers, which was discussed with some vigour throughout the second half of the century, rested partly on the monopoly of the companies, but was complicated by a number of external factors. The situation was essentially derived from the hallowed belief in the Englishman's home as his castle which exercised such a constricting hold

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1. Med. Off. Ann. Rep., Newington, 1873-74, p. 120.

on sanitary activity for so many years. In this regard, the power of the water companies over arrangements for domestic supply extended only to the provision of the mains water supply. The consumer provided the branch pipe from the main to the house, the domestic water tank, the ball-cock regulating the in-flow, and all the subsidiary plumbing.[1] Where the owner of the house did not wish for the benefit of company water, he was under no obligation to provide any connexion.

The greatest effect of this regulation fell naturally on the lower range of leased properties, where the widespread existence of multiple tenancies, and the small capital of small landlords, provided strong financial incentives against such capital outlay. Although it was estimated in 1849 that the cost of a 36 gallon barrel and a service pipe to the mains need be no more than 22s 6d., and that this sum might be repaid over 5 years by the addition of 1d. a week to the rent,[2] it is clear that such a sum, and perhaps even more the period of return, was sufficient to discourage investment. Another factor discouraging landlord investment in water services for the kind of low-income property which in the sanitarians' view was most in need of them, was that the destructive habits of so many of the people who occupied such property might render them liable to further and repeated repair expenditure on their investment.[3] The reluctance of landlords to incur the expense of laying on water was used by the Water Companies in their own defence, for they insisted that once a main had been laid, nothing could be more in their own interests than to have it as extensively used as possible.[4]

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1. Reddaway, op. cit., p. 126.
2. Sir William Clay, Water Supply of London (1849), p. 22.
3. Med. Off. Ann. Rep., Camberwell, 1883-83, Rep. on Housing, pp. 159-60.
4. Clay, op. cit., p. 21.

The difficulty of bringing the unwilling house-owner to connect to the main was not to be solved by legislative means. The local authorities had no direct power to require the abolition of wells and the laying on of company water to houses, except in the case of small houses where the water rate was 3d. a week or less.[1] Vestries did have the power to order water to be supplied for the flushing of drains and sewers, but not for drinking purposes, and even if they did so could not insist on its coming from any particular source. If there was sufficient direct evidence to prove the water unfit to drink, the Vestry might have a private well closed, or require that it be used only for specific purposes, but they still had no means of ensuring that drinking water was provided. It is again significant of the conflict between private interests and the public and sanitary good that, although good supplies of water from drinking and domestic purposes were widely recognised as being of the highest sanitary importance, and a crucial factor in the sanitary improvement of the lot of the labouring classes,[2] there was as yet no legislative approval for their forcible provision.

The Water Companies were, it seems, accustomed to base their defence of their services on the responsibility and reluctance of landlords to spend money on the necessary equipment for supply.[3] There is, however, no indication in the local records of the extent of the mains provision which was the pre-requisite of any supply at all. Henry Bateson threw some doubt on the adequacy of mains-pipes leading to poorer districts,[4] and the continued irritation of the medical officers

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1. Med. Off. Ann. Rep., Camberwell, 1883-84, Rep. on Housing, p. 170.
2. RCHWC., Report, p. 14.
3. Clay, op. cit., p. 22.
4. Vestry Ann Rep., St. George, 1865-66, Report on Constant Water Supply, p. 47.

at what they regarded as the companies' failure to extend constant supply to all inhabited houses argues perhaps a greater liability than the latter were willing to admit.

There is certainly considerable evidence that does not redound to the credit of the companies' sincerity, notably the long maintained refusal to supply water on Sundays. Even in cases of sanitary emergency, their behaviour was not always charitable: during the cholera scare of 1871, Camberwell Vestry asked the Kent Company to erect stand-pipes in Stockwell, Bexley and Alpha Streets, three notoriously insanitary areas, but the Company only replied that stand-pipes were a "most objectionable service", never resorted to except in extreme cases, and that independent supply to the occupier was the only legitimate means of provision.[1]

The debate over the method by which London's inhabitants were to be supplied with water, which paralleled the debate over water quality during the second half of the century, was no less productive of tension. Once again, legal complexities operated to the disadvantage of sanitary improvement, in that defects in the private section of water arrangements cost the companies heavily in wasted gallons, and the loss was only made managable by the fact that water was only provided for a few hours a day.[2] Stand-pipes, or common taps, were apparently even more wasteful, and all companies made strenuous efforts to get rid of them.[3] As far as the sanitarians were concerned, the only really satisfactory arrangement was constant supply to all houses.

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1. Camberwell Vestry Mins., 11th October, 1871.
2. Reddaway, op. cit., p. 126.
3. Clay, op. cit., p. 21.
4. Camberwell Vestry Mins., 4th June, 1856.

The intermittent system only encouraged the storing of water in various receptacles about the house - possibly acceptable among the hygienically enlightened, but definitely undesirable for the ignorant and the overcrowded. On the other hand, common pipes were a distinct sanitary advantage where the alternative was no supply at all.

The slow extension of the constant system meant that the type and condition of water receptacles was a constant worry to a conscientious MOH. In Camberwell, Bristowe issued meticulous instructions[1] to the effect that water receptacles should not be placed so as to expose their contents to effluvia from drains, privies or accumulations of filth; that they should be kept in a cool and shady situation that would delay, where the sun hastened, the decomposition of organic impurities; that the size of receptacles should be proportioned to the needs of users;[2] slate cisterns were to be provided as lead was undesirable and wood likely to rot,[3] and cisterns were to be closely covered. The receptacles should be cleansed frequently; drinking water was to be kept distinct from that used to flush closets, and the Inspectors were instructed to keep an eye on the system "so frequently adopted" in the poorer districts, where a water butt close to the closet was connected to it by a pipe, so that the overflow of the butt was directed into the closet.[4]

The battle for a constant water supply was one fought long and hard. In Camberwell, it was a popular issue by the mid-century;[4] in London generally, the issue seems to have aroused most interest in the period circa 1865-1885. A precise delineation of the progress towards

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1. 12 gallons per day was "not superflous" to meet all domestic needs.
2. By 1888 zinc and galvanised iron were also approved: Med. Off Ann. Rep., Camberwell, 1888-89, p. 120.
3. Camberwell Vestry Mins., 4th June, 1856.
4. ibid., 28th February, 1850.

a constant supply is impossible parish by parish; all the available series relate to the company districts, and give a misleading impression of the local situation. Certain figures are available for Camberwell, however, which may go some way towards illuminating the picture for other parishes. In January, 1883, out of a total of 735 streets in Camberwell, only 150 were on constant supply.[1] Of these, 21 were supplied by the Southwark and Vauxhall Company, 62 by the Lambeth Company, and 67 by the Kent Company. The same companies gave a daily supply to 456,101, and 28 streets each respectively.[2] In response to an inquiry from Bristowe a few months earlier, all three companies had expressed the intention of shortly expanding their continual supply service.[3] The Southwark and Vauxhall stated that 4,000 houses in Camberwell would be transferred in the next year; the Lambeth anticipated that the whole of the South London "Town District" would be on constant supply by November 1883; the Kent claimed 25,000 houses in the Old Kent Road area to be on constant, and that the arrangements for the present year included the transfer of some 4,000 houses in St. Paul, Deptford.[4] In October, 1883, nevertheless, the Southwark and Vauxhall still had only 21 streets (2970 houses) on constant, the Lambeth still had only 62 streets (2528 houses) on constant, and the Kent had actually regressed, for they had only 64 streets (2500 houses) as opposed to the former 67, on constant supply.[5] Altogether only some 8,000 houses out of a total of about 32,000 in the parish received the benefit of constant supply.

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1. Sewers and Sanitary Comm. Mins., 16th January, 1883.
2. ibid., idem.
3. ibid., 7th November, 1882.
4. ibid., idem.
5. Camberwell Vestry Mins., 24th October, 1883.

Although progress towards a universal constant supply was slow, the aim appears to have been largely achieved by the end of the century. Figures for the three South London companies show that by the mid 1890s, most houses in this area were on constant supply, even if much had been achieved within a few years. The Kent Company, for instance, had 85% of its houses on constant on 31st December, 1896, and 93% by 31st December, 1897. The Southwark and Vauxhall figures were 93.75% and 94% on the same dates; the Lambeth, in both 1896 and 1897, had no more than just over 70% of its houses on constant.[1] The areas covered by these companies included the whole of South London, and many parishes besides the three with which this paper is most closely concerned, and it is not at present possible to establish the pattern of transfers. All houses in Newington supplied by the Lambeth Company were apparently on constant by October, 1883.[2] However, it is clear that in Camberwell at least, transfers were still taking place on a considerable scale in the early 1890s, when the parish Surveyor and the Secretary to the Kent Water Company simplified the notification procedure which ratepayers had to perform when they wished to break open the roads and footways for the purposes of constant supply.[3]

Constant supply did not, however, constitute a remedy for all evils, nor deliver the consumer entirely from the caprices of the companies and their employees. The incident described by "John Bull" in a local paper is perhaps characteristic of the days before constant

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1. R. Sisley, The London Water Supply (1899), pp. 129, 147, 159.
2. S.L.P., 20th October, 1883.
3. Camberwell, Special Water Committee Mins., 11th April, 1892.

supply, and illustrates some of the attitudes which complicated the daily lives of London's inhabitants. In this case, the Water Company (unnamed) in their wisdom turned off the Saturday supply, and Sunday, being well-known as "a dies non to water companies" [1]

> ... from dusk to near mid-night everybody seemed to be trying to beg or borrow water from everybody else.

A visit to the district turncock on Saturday provoked nothing but a refusal of water, together with the remark,

> Oh, go along; what a bother you are a-making about a drop of water. You had water yesterday. You've been spoiled in this district: you've had water on every day ..... what a nuisance them people are.

The nuisance of two waterless days, and those a Saturday and Sunday, proved too much for the district, however, and on the Sunday morning a number of gentlemen instituted a rebellion by turning up at the turncock's home threatening to sue both the Company and the turncock for having to go somewhere else for water. The turncock capitulated, and hastened off, irons on shoulder, and unlocked the barriers that confined "the should-be crystal stream". Thereupon the conspirators

> ... dispersed well satisfied that they had exercised their sacred right of rebellion in such a manner as to bring cleanliness and comfort to more than 100 homes.

And John Bull concluded:

> ... a little prompt action would often bring some of our paltry little local tyrants to their senses.

The water companies continued to exercise petty tyrannies even after consumers had been transferred to constant supply. Being endowed with the power of cutting off supplies as an insurance against non-payment

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1. S.L.P., 20th January, 1866.

of rates, they did so without regard to tenancy complications, ignoring the fact that a tenant might have paid all dues to the landlord, although the latter had not turned them over to the company. Houses were at times left without one of the first necessaries of life for weeks together, often through no fault of the tenant.[1] As far as the medical officers were concerned this was bad enough, but the final iniquity was that[2]

> the companies coolly give us intimation of their proceedings so that we (acting in the interests of health) may take legal proceedings to compel the landlords to have the water supply reinstated, and thus act as the companies' cats paw.

The only remedy lay in a change of legislation, but again the interests of private enterprise were at stake, and this was slow in coming. In 1894 Fulham Vestry were still vainly agitating to get the law altered to deprive the companies of the curtailing power.[3]

Technical difficulties and inefficiencies also disrupted water supplies at times, or made them otherwise unsatisfactory. In 1895, the constant supply system of the Lambeth and the Southwark and Vauxhall companies failed, and their constant supply districts had to be brought temporarily under intermittent supply.[4] The pressure at which water was supplied was often insufficient for the provision of multi-storey buildings, notably the new artisans' dwellings. Although the companies were obliged by their special acts to supply water under constant pressure

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1. Med. Off. Ann. Rep., Camberwell, 1883-84, Report on Housing, pp. 170-171; see also Sewers and Sanitary Comm. Mins., 1st March, 1898.

2. Med. Off. Ann. Rep., Camberwell 1883-84, Report on Housing, p. 171

3. Sewers and Sanitary Comm. Mins., Camberwell, 6th February, 1894.

4. Newington Vestry Mins., 24th July, 1895.

to a height far above the topmost storey of the highest house in Southwark, Frederick Waldo found that in practice the pressure given by the Southwark and Vauxhall was frequently intermittent and quite insufficient to bring water to the upper stories of flats. The continued use of cisterns - "not infrequently a fertile source of danger, dirt and disease" - was the inevitable result.[1] The 41 model dwellings in the parish usually had a large number of water-cisterns on their roofs. These were either without covers, or badly covered and only a few feet away from the free vents of soil pipes which contained filthy water due to want of cleansing and efficient supervision by the owners of the dwellings.[2] In most cases the cisterns constituted only an emergency supply, but while the water pressure remained unreliable their discontinuation could not be required.

Supplementary to domestic water supplies, but in no way a replacement for them, public drinking fountains began to appear in London from about 1860. The establishment of the Metropolitan Free Drinking Fountains Association at about this time gives some indication of pressure group activity in this area. In St. George's the Vestry discussed the issue repeatedly throughout the May and June of 1859 before giving consent to the erection of one fountain under the superintendence of its Roads Committee.[3] An application by the MFDFA a month later for the Vestry to bear the expense of water supply to three fountains[4]

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1. Med. Off. Ann. Rep., St. George, 1892, p. 26.

2. ibid.

3. St. George's Vestry Mins., 4th July, 1859.

4. ibid., 1st August, 1859.

was, however, rapidly granted.[1] In Camberwell, four of these fountains were erected once it had been ascertained from the parishes of St. Saviour and Islington that they were "a great boon to the poor".[2] The erection and maintenance of these fountains was undertaken by the MFDFA, and the Vestry supplied the water.[3] Fountains were also erected in Newington,[4] and it seems that the MFDFA continued to keep a vigilant eye upon the condition of all fountains, even those outside its jurisdiction, for in 1864 the Association drew the attention of St. George's Vestry to the state of the fountain at St. George's Church and were granted permission to take it under their control.[5]

The problem of both the quantity and quality of water supplies was closely linked, in mid-nineteenth century sanitary and preventive terms, with that of drainage and sewage disposal. The connexion between sewage-contaminated water and disease had been made well before John Snow's cholera studies gave conclusive proof of the dangers of contaminated water,[6] and one of the principal aims of the Metropolis Local Management Act was to establish a sewerage system which would largely diminish the chances of the intermingling of the two. A London seamed with open sewers and honey-combed with cess-pools, whose river was little more than a flood of dilute sewage, stood little chance of drawing unaffected water from its wells or from the river itself. In the 1840s, cess-pools

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1. St. George's Vestry Mins., 29th August, 1859.
2. Camberwell Vestry Mins., 22nd June, 1859.
3. ibid., 6th July, 1859.
4. Newington Vestry Mins., 6th June, 1860; 16th November, 1869.
5. St. George's Vestry Mins., 10th May, 1864.
6. Chadwick, Sanitary Report, p. 148-9.

were almost universal in London, and among the wealthiest classes were regarded even as one of the most sacred areas of private property.[1] It was this situation which the Metropolitan Board of Works and the civil vestries were in a large part established to remedy.

The programme of sewerage works for London fell into two sections: the main drainage scheme which was to be performed by the MBW, and the local sewerage works which were the responsibility of the civil vestries. In spite of the acknowledged importance of the sewerage question, it was several years before the programme got fully underway. The disputes over Joseph Bazalgette's plans[2] which delayed the beginning of work on the main drainage meant that at the local level much work could not be performed until the main plan had been settled. Although the Metropolis Local Management Act had directed that the Metropolitan Board of Works should have completed the sewers and other works to prevent sewage flowing into the Thames by 31st December 1860,[3] Government opposition to Bazalgette's plans held up the start of the work until the autumn of 1858, and the main lines were not finally complete until 1864.

The effect of this delay on the progress of the local systems varied. St. George's, although "sadly deficient" in sewers, with at least 100 courts, backstreets and alleys entirely without drainage, was nevertheless possessed of "multitudinous" sewers, which, Rendle lamented, could only be discharged for four hours each tide - eight hours each day, during the remainder of which they were reservoirs of

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1. J. Simon, English Sanitary Institutions (1897 ed.), p. 252; see also H. Jephson, The Sanitary Evolution of London (1907), p. 17-18.
2. A.F. Green;"The Problem of London's Drainage" Geography, xli, 1950, pp. 149-52.
3. 18 and 19 Vict. c. 120, cxxxv.

stagnant sewage.[1] The construction of the existing sewers often left something to be desired: the one on Friar Street, a very important one, was so level from Bean Street to Suffolk Street that it had[2]

> ... a most curious quality for a sewer, that of flowing either way equally well.

The Commissioners of sewers in charge of St. George's previous to the civil vestry had apparently been negligent in ensuring that the parish sewers were in good condition and properly cleaned. Very shortly after taking them over, the Vestry was inquiring of the MBW whether there was any danger in leaving the sewers for a month or two? The answer was an emphatic affirmative: if the small sewers were left unattended the cost of cleaning them would be very great; the large sewers would not so soon show signs of neglect, but would become increasingly foul.[3] St. George's, although not without a great many cesspools, was thus not entirely unprovided with sewers. The inital problem, therefore, while the crucial chief sewer lines were still under discussion, was not the frustation of not being able to put down any drains, but rather of tidying up the existing drainage situation.[4]

> I have thought that until we arrive at better drainage, our water supply and cesspool emptying might be managed only at the times daily when the sewers are in full flow. We may not be wise, therefore, abruptly to throw into the sewers (shut up as they are two-thirds of each day) all the drainage of these other places; nor ought we to be too quick in filling up cesspools. I suppose the wisest plan (although I am far from clear about it) will be, to make sewers, to empty, and fill up cesspools, and put good pipe drains, only, whenever a grievous sickness shall be found more or less connected with these evils; or in the closest, crowded unhealthy places.

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1. Med. Off. Half-Yearly Report, St. George, July, 1856, p. 11.
2. ibid.
3. St. George's Vestry Mins., 29th January, 1856.
4. Med. Off. Half-Yearly Report, St. George, July, 1856, p. 11.

Newington, like St. George, was also irregularly sewered. Both parishes, with Camberwell, had come under the jurisdiction of the Metropolitan Commissioners of Sewers for Surrey and Kent, a body whose actions gave much cause for complaint. Newington Vestry grumbled that, although the parish had borne its full share of taxation, it had reaped a very small amount of local benefit. Between 1843 and 1853, the Commissioners had received £40,434 6s 8d. from the parish, but had spent only £32,620 14s 10d. on it in return.[1] A large number of streets remained without sewers, and here overflowing drains and cesspools had been emptied and cleansed only to fill again; the landlords expressed great regret at their inability to give complete relief from the problem owing to the distance of the street from the nearest sewer.[2]

> Amidst the great variety of drains, there has often existed considerable difficulty in suggesting a remedy for the too evident evil, high and low level sewers puzzle and perplex - drains at the backs of houses, at the fronts, at the sides, and beneath, - drains separate and conjoined, strait (sic) and circuitous are to be found almost side by side, and even large cesspools exist under the very roadways .....

The parish was also burdened with two open tidal ditches: the St. Peter's Ditch or Earl Sewer, which formed a considerable part of the boundary with Camberwell; and the Trinity Ditch, far more surrounded by dwellings and more dangerous to health, in the vicinity of Devonshire Street. In Devonshire Court, a blind alley containing 16 houses half of which abutted onto the ditch, the Trinity was "foul in the extreme and peculiarly enclosed". A long range of manufacturing premises occupied the opposite bank, and from there a privy daily and visibly produced a disgusting discharge.[3]

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1. Newington Vestry Ann. Report., 1859-60, p. 6.
2. Med. Off. Ann. Report, Newinton, 1857, p. 24.
3. ibid., p. 28.

In Camberwell, the built up areas of the parish were almost completely undrained when the civil vestry took over from the Sewers Commissioners.[1] The Earl Sewer, which also received the drains of Lambeth and Newington, received such closed sewers as there were in Camberwell before it curved away through Rotherhithe to Deptford and its outlet into the Thames. Like the Trinity Ditch, the Earl Sewer was tidal, and to disgusted observers it seemed that only a small proportion of its noxious substances were actually carried away, the greater part remaining in the form of thick, black mud,[2]

> ... a fertile source of disease, whether it be fever, which there finds its resting-place; or pestilence, which selects it as its favourite haunt ....

Camberwell's Sewers and Sanitary Committee believed the Earl Sewer to be the greatest nuisance, not only in their own parish, but in the whole of London.[3] Although Newington's Sewers Committee had the ditch cleaned in the autumn of 1857,[4] the situation was not, it seems, greatly improved, for two years later a "numerously signed" petition was presented to Camberwell Vestry setting forth the necessity for covering the Earl Sewer,[5]

> ... inasmuch as the compulsory removal of cesspools has made it the only sewer through the whole district which it runs.

Although at this time three-quarters of Camberwell was still garden, common and pasture,[6] the general lack of sewerage was a matter of public concern. This was predictably acute in time of epidemic: in 1850,

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1. Camberwell Vestry Mins., 24th October, 1900.
2. Med. Off. Ann. Rep., Newington, 1857, p. 27.
3. Camberwell Vestry Mins., 9th April, 1856.
4. Med. Off. Ann. Rep., Newington, 1857, p. 29.
5. Camberwell Vestry Mins., 14th September, 1859.
6. ibid., 24th October, 1900.

258 ratepayers had petitioned for a public vestry to consider

> ... the present most inefficient and most injurious management of the public Sewers in this Parish.[1]

Although the jealous vestry of Newington estimated that the Kent and Surrey Sewers Commissioners had spent £41,291 7s 2d. on the sewering of Camberwell between 1843 and 1853 (at the implied expense of some four and a half thousand pounds to the former),[2] Camberwell itself complained in 1850 that between 1847 and 1850 £6,000 had been raised by the Commissioners annually in the parish, and only £500 had been spent on permanent improvements.[3]

In 1850, the total length of open ditch or sewer receiving house drainage in Camberwell exceeded 12 miles, while 11½ miles of street (not including the agricultural area of Dulwich, which had no drainage whatever yet paid the same rate) had no proper means of house drainage, and in many instances had no drainage at all, because they did not lie within 200 yards of an existing sewer.[4] Apart from these inconveniences, the practices of the Commissioners' servants left much to be desired. Between 1848 and 1850, the Camberwell Board of Guardians, which was acting as the local board of health, received numerous complaints on this count. The deposit from the open sewers, for instance, was drained and spread along the banks of the sewer, regardless of the inhabitants; cesspools and privies were emptied and drained into sewers

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1. Camberwell Vestry Mins., 13th June, 1850.
2. Newington Vestry Ann. Rep., 1858-60, p. 6.
3. Camberwell Vestry Mins., 13th June, 1850; Report of the Surveyor.
4. ibid.

both open and closed, so that the latter became "daily more noxious and hurtful";[1] in attempts to flush the sewers, manholes were left open, and the smell was so great that shops often had to be closed until the operation was over. The Board of Guardians found themselves helpless to compel a remedy: they had no official connexion with the Court of Sewers, and the latter therefore refused to recognise them. The Guardians continued to forward complaints to the Court, either directly or through the General Board of Health, but they voiced their disillusionment in no uncertain fashion, being,[2]

> ... apprehensive that the voice of the parish is but little likely through them to produce an impression upon so unwieldy a body as the present Commission, and that while the sanitary condition of the parish has been reported from time to time during the last ten or twelve years, the prospect of remedial measures through the Court of Sewers is still very distant.

The new civil vestry which came into being in 1856 began work on the sewering of the parish immediately, in spite of the restrictions on progress imposed by the Main Drainage dispute. In 1856, Camberwell contained 25 miles of sewer for 32 miles of streets, 11,500 houses and a population of 60,000. These 25 miles consisted of 10½ miles of open sewer, 3½ of pipe sewer, 8½ of high level sewer and 3 of low level sewer.[3] The Vestry Surveyor, J.C. Reynolds, estimated, under Bazalgette's first drainage plan, that a total of 23 miles of brick sewer and 9 miles of pipe sewer were needed to adequately provision the parish, at an approximate cost of £77,232.[4] The great part of

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1. Camberwell Vestry Mins., 13th June, 1850; Report of the Surveyor; Report of the Guardians.
2. ibid.
3. ibid., 16th January, 1856.
4. ibid., 9th July, 1856, Report on the Proposed Drainage of the Parish.

this work could not, however, be begun, or in any way completed, until the "vexed question" of the main drainage scheme was settled.[1] Such improvements as were possible were put in train, notably the arching over of the open sewers, a labour which did not "provide materially improved drainage" but which was "proposed to be executed principally with a view to sanitary precaution".[2] In the first three years of the Vestry's existence most of the open sewers had been dealt with,[3] although the Earl Sewer, which because of its general importance for South London was the responsibility of the MBW, remained open and an increasing nuisance.[4] In 1857, some three thousand pounds was spent on new sewers for permanent drainage in localities requiring immediate relief in Park Road, Peckham, Downes Street, Bexley Street and Alpha Street, and on new sewers which could be permanently and efficiently constructed without interference to any subsequent main drainage works in James Street, Park Street, Southampton Street, Wells Street and Hill Street.[5]

The brisk efficiency of the Vestry in respect of sewers must have made the negligence of the MBW even more bitter for those whose drainage plans and neighbourhood lay within its competence. There were complaints from those who lived in the vicinity of the Effra that it was now the common recipient of sewage from Norwood, Tulse Hill, Dulwich and Herne Hill, and was "altogether open" from its source right down to the Brixton Road.[6] There was the complaint about the Earl Sewer, and

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1. Camberwell Surveyor's Ann. Rep., 1857; Vestry Ann. Rep., Newington, 1858, p. 7-8.
2. Camberwell Vestry Mins., 11th November, 1857.
3. Camberwell Surveyor's Ann. Rep., 1857-58, p. 4.
4. See above, p. 34.
5. Camberwell Vestry Mins., 11th November, 1857.
6. ibid., 4th August, 1858.

numerous protests at the delays which the disagreements among the higher authorities caused.[1] The Vestry itself seems to have been concerned at the delay. In an attempt to remedy the "inconvenience of incomplete drainage", the Surveyor obtained permission from the MBW to erect a pumping station at the Deptford outlet. This, it was calculated, would have the effect of raising the natural level of the district, and would give a "large amount of relief" to "the present pent-up Sewerage"; it might also give immunity from the floodings which occurred so frequently in the area, jeopardising alike the value of the house property erected on it and the health of the inhabitants.[2]

The principal local and Metropolitan drainage works had been largely completed by the 1870s, in spite of the early delays, but this did not mean that London's drainage problems were over. On the one hand the construction of sewers and drains by the authorities did not in itself ensure the connexion of house drains with the new sewers, or indeed the efficiency of such arrangements; on the other, a steadily increasing population imposed a greater burden on the capacity of the system, and drew attention to such structural weaknesses as inevitable technological progress made apparent in the original design. Drainage works remained a standing item on the books of all three vestries right up to the end of the period, while the MBW and its successor the LCC were also troubled with problems in their wider concern of Metropolitan sewerage. Apart from the controversy over the discharge of untreated sewage into the Thames, a practice roundly

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1. Camberwell Vestry Mins., 25th March, 1857; 10 February, 1858.

2. Camberwell Surveyor's Ann. Rep., 1858-59, p. 4.

condemned by the Royal Commision of 1884-5,[1] it had become evident only some 15 years after the main drainage scheme had been completed that in certain respects its capacity was no longer adequate.

One of the principal aims behind the design of the main drainage scheme for South London had been to relieve the area of the flooding to which it was susceptible. Large portions of the southern parishes were very low-lying relative to the river. Many places in northern Camberwell were six feet under the Trinity High Water Mark,[2] while the general level of St. George's was about the same as the High Water Mark. In some parts, such as Flint Street and Green Street, it lay slightly lower; about the Bricklayer's Arms the level was 4-5 feet below; the High Street and the "Borough alleys and courts" were 4-5 feet above.[3] Under the unimproved drainage system, the low-lying areas were always flooded in heavy rain, and at times when storms coincided with high tides, and the tidal flaps next to the Thames were closed, hill-water poured down into the lower levels flooding basements and cellars. The result of this regular flooding was to keep the sub-soil of the district saturated, so that it afforded little more than surface drainage: when cesspools were sunk for temporary drainage, the water level of the district proved so near the surface, that their contents rose so high as to make constant emptying necessary.[4]

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1. R.C. on Metropolitan Sewage Discharge, First Report, PP., 1884, xli, 41,61.
2. Camberwell Vestry Mins., 9th July, 1856, Report on Proposed Drainage.
3. Med. Off. Half-Yearly Rep., St. George, July, 1856, p. 11
4. Camberwell Vestry Mins., 9th July, 1856, Report on Proposed Drainage.

The construction of the Southern High Level Sewer was intended to prevent flooding, by intercepting the drainage from the high ground. This sewer was begun in 1859 and finished in 1863. Work on the Low Level Sewer began in the latter year, and appears to have been finished by 1868, when the MBW began improving the secondary main line sewers in Camberwell.[1] By the early 1880s, however, it was apparent that the problem of flooding had not been solved, but was still occurring during storms. In 1881, Newington's General Purposes Committee recommended that tidal valves be fixed on parish sewers to prevent water backing up from the main sewers; tidal valves fixed to the sewer of the Westmoreland Road Infirmary in 1880 had answered all their surveyor's expectations in preventing the flooding of their basement.[2] The problem was too great to be solved by the application of tidal valves: in 1884 the Royal Commission noted that storm discharges into the Thames were increasing,[3] and in the later 1880s repeated floodings were caused by heavy rain in Camberwell.

The problem of floods remained until the early twentieth century, when it became necessary to extend the capacity of the intercepting and outfall sewers and to put through an extensive programme of additional storm relief sewers.[4] This work was performed between 1903 and 1910, the result of repeated pressure from the Metropolitan vestries on the LCC to do something to prevent storm flooding.[5] In 1888 Camberwell's

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1. Camberwell Surveyor's Ann. Rep., 1867-68, p. 12.
2. Newington Vestry Mins., 30th November, 1881.
3. PP., 1884, xli, p. 42.
4. A.F. Green, op. cit., pp. 152-153.
5. Newington Public Health and Sanitary Comm. Mins., 20th April, 1899.

Sewers and Sanitary Committee noted that the question of flooding was getting "very serious".[1] The parish experienced serious flooding on three occasions in June and July 1888, and again in June 1889 and July 1890.[2] In Newington major floodings occurred - as they occurred in the South London area - in June 1888, September 1895, June 1896, December 1897 and December 1898.[3]

The damage and distress caused by these repeated floodings were considerable, although as Newington observed, such complaints as were made by the local people all came from newcomers to the district:[4]

> ... the older residents, recognising the futility of complaint, suffer in silence.

In Camberwell the pressure of water was so great on 30th July, 1888, when 3.17 inches of rain fell between 3 and 9 p.m., that the Rye Common Sewer burst, and its contents poured down the steep surrounding roads. Although, in Camberwell at least, the roads cleared rapidly, and drainage acted efficiently as soon as the storms had passed, the problem was serious, and called for the "most hidden research and calculation".[5] George Millson worried lest the periodic floodings were an important factor in propagating diphtheria and other diseases by saturating the subsoil. Storms not only occurred when the sewers were full, but[6]

> ... there is a pressure of a column of sewage many feet in height on our house drains and connections, and in the case of joints not being watertight the subsoil is

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1. Camberwell Vestry Ann. Rep., 1887-88, p. 77.
2. Camberwell Vestry Ann. Rep., 1890-91, p. 96.
3. Newington Public Health and Sanitary Comm. Mins., 20th April, 1899.
4. ibid.
5. Camberwell Surveyor's Ann. Rep., 1890-91, p. 96.
6. Med. Off. Ann. Rep., Newington, 1898, p. 144.

> fouled by sewage. The effect of this is that, after a storm, many of the houses in our parish are in such a foul smelling state as to render them unfit for habitation.

The argument over the cause of the floodings, and ultimately over the responsibility of action, caused some tension between the vestries and the LCC. Although the Royal Commission of 1884-5 had seen quite clearly that flooding and the fouling of the river were likely to increase with the increase of population,[1] other explanations were generally canvassed. Camberwell's surveyor suggested that rainfall and moisture conditions in Britain had changed so much during the previous 30-40 years as to have undermined the previously presumed necessities for both the main and subsidiary sewers and outlets of the Metropolis, and called on the LCC to improve matters. The Council responded rather crossly, pointing out that the main drainage of the Metropolis was "never intended to provide for extraordinary rainfall", but that it was considering the matter.[2] There was some debate as whether the trouble lay with the main sewers of the Council, not being large enough to carry off storm water speedily, or with some hindrance at the sewer outlets to reduce flow. Newington came to the conclusion that the want of a free outlet for the local sewers was the cause of the floodings of December 1898. The LCC claimed that only a few houses in the Camberwell Road and one each in Newington Butts and the Walworth Road had been affected, and that this proved that there was some defect in the local house drains, since other houses at the same level had not

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1. PP., 1884, xli, p. 67.
2. Camberwell Surveyor's Ann. Rep., 1890-91, p. 103-104.

been affected. Furthermore, a number of basements had been constructed at a depth which the Vestry should never have permitted. However, in constructing this defence, the Council ignored the fact that the flood had been general both in Newington and throughout South London, from Battersea to Bermondsey, both of which had also complained to the Council.[1] The ultimate solution of the problem by the construction of the storm relief sewers and the increased capacity of the outfall sewers seems sufficient proof of the vestries' case.

Natural disasters apart, it began to become evident during the last years of the century that sections of the sewer system at least would not stand up to prolonged wear and tear. In 1897, a blocked drain and flooded premises at 36 Nunhead Green, led to the discovery of a break in the Nunhead Green Sewer. With the aid of pumps working night and day, this took nearly two weeks to repair. Camberwell's Surveyor stated the immediate cause of the trouble to be that the connexion and bend of the sewer put in by the MBW was not strong enough to stand pressure at the depth at which it had been placed.[2]

> I understand it was not the custom when these sewers were connected for them to be bedded in concrete or to have connected joints.

This type of obsolete engineering had been responsible for several incidents of a similar kind. Although repair work on the subsidiary main was performed by the Vestry, the real responsibility lay with the LCC, and any far-reaching improvements would fall to them rather than to the Vestry. The limit of Camberwell's responsibility was reached in

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1. Newington Public Health and Sanitary Comm. Mins., 20th April, 1899.
2. Camberwell Sewers and Sanitary Comm. Mins., 28th September, 1897.

informing the Council of the cause of the break and suggesting an examination of the Council's sewers to see whether any other junctions were in a similar dangerous condition.[1]

The question of sewerage in London had, however, been broadly settled since 1870. In Camberwell the sewer rates, which stood at eleven pence in the pound in 1867, fell away until in 1900 they stood at a mere halfpenny in the pound.[2] To ensure that adequate house drainage, that other vital aspect of the drainage question, existed throughout the parishes, proved ultimately more difficult. It was a task which continued to occupy the sanitary departments as long as the vestries existed. For many years the legal provisions concerning house drainage did not facilitate the official task. Under the Metropolis Local Management Act, the vestries were empowered to compel modernisation or institution of house drainage where existing arrangements were such as to cause a nuisance. They might also act on application from individuals in respect of private property. In both cases the expense was borne by the owner of the property. Where new buildings were to be erected, it was obligatory on the builder to submit a plan of the proposed drainage system to the Vestry for approval. There was, however, nothing to prevent the builder from changing the plan once it had been approved, and as time went on, it became obvious that scandalous neglect of drainage works was widespread, and that in most cases the plans submitted did not accord with those finally adopted.[3] It was not until 1889 that new bye-laws were approved which insisted on official inspection and approval before the drains were covered up.

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1. Camberwell Sewers and Sanitary Cmm. Mins., 28th September, 1897.
2. Camberwell Vestry Mins., 24th October, 1900.
3. Med. Off. Ann. Rep., Camberwell, 1888-89, p. 107-8.

From the early years of their responsibility, the local sanitary departments were constantly battling against the sanitary arrangements of the houses under their care. The initial concern was to abolish the cesspool system, which most sanitarians viewed as the ultimate evil:[1]

> ... of all the abominations which disgrace the dwellings of the poor the imperfect, rarely-emptied, and overflowing cesspools are by far the worst.

Cesspools polluted both soil and water, and emitted deadly emanations which poisoned both the atmosphere and the interior of houses.[2] Their eradication proved a long and arduous task. St. George's, by 1869, could record that they were now the exception, and only to be found in some of the better class houses which had escaped the supervision of the local authority.[3] In Camberwell, where every house almost without exception was provided with cesspool and privy,[4] some 3,883 cesspools were abolished between 1858 and 1872, 458 between 1872 and 1889, and 504 in the 1890s. The provision of water closets followed at about the same pace and pattern. Over the same period some 70,000 drains were trapped and cleaned, and 29,000 yards drained and paved, the number of works performed per decade increasing steadily.

The activity of the sanitary authorities probably became more intense with experience and with the development of improved methods. New types of closet, better arrangements for flushing them, better methods of dealing with the removal of slops, dirty water and rain water,

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1. Med. Off. Ann. Rep., Camberwell, 1857-58, p. 34.
2. ibid; Med. Off.Third Quarterly Rep., St. George, 1859, p. 2.
3. Med. Off. Ann. Rep., St. George, 1868-69, p. 35.
4. Med. Off. Ann. Rep., Camberwell, 1888-89, p. 106.

and better forms of traps and arranging underground drains were achieved during the period.[1] Thirty years after his appointment, Bristowe recorded with satisfaction that,[2]

> ... now, not only are the correct principles and the practical details of house drainage well understood, but also the public generally alive to the need of having their house drainage in perfect order.

How far down the social scale this awareness and application of sanitary improvements extended is unproved: barely five years earlier Bristowe had noted that the new methods of drainage and water supply required delicate and costly arrangements to permit their efficiency, and that,[3]

> ... their delicacy and nicety of detail make them difficult of adaption to the poorest property, while the cost in many cases renders the adaption of the most efficient apparatus an impossibility.

The enforcement of the principle of separate drainage systems for sewage and waste-water also caused the sanitary departments a great deal of trouble. Combined drainage had originated with the introduction of the water-closet in the first decade of the century, and by 1847, had become compulsory.[4] Increasing sanitary fastidiousness found this procedure unsatisfactory, however, and in the early 1880s, Bristowe accounted the cutting off of rain-water, sink and other waste-water pipes from the drains one of his department's chief duties.[5] The main

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1. Med. Off. Ann. Rep., Camberwell, 1888-89, p. 106.
2. ibid.
3. Med. Off. Ann. Rep., Camberwell, 1883-84, Report on Housing, p. 159.
4. A.F. Green, op. cit., p. 148.
5. Med. Off. Ann. Rep., Camberwell, 1885-86, p. 75.

reason for this activity was to ensure that sewer gas - considered not merely unpleasant but also lethal by contemporaries[1] - did not escape into the interior of houses. It was particularly among houses recently built that there seemed to be a great disregard by builders of the elementary principles of sanitary construction. Waste-water pipes were not only directly connected with drains and sewers, but few or no actual precautions, such as the ventilation of drains from the roof, had been taken against the introduction of sewer gas into houses.[2] Until 1888 the vestries were hampered in their campaign by the fact that no bye-law existed to give them official responsibility for domestic drainage systems, although by 1887 Camberwell was insisting systematically as plans were brought in or as problems arose that the waste pipes be "absolutely" disconnected from the sewer.[3]

New drainage regulations in 1889 brought the condition and construction of house drains officially under the care of the local authorities. Camberwell claimed to be one of the very few Metropolitan parishes at the time to take its drainage system seriously in hand, and to be the only one where the duty was devolved on the Sanitary Department whose officers were those best fitted for that duty.[4] The regulations specified the disconnection of waste-water pipes and sewage lines, but also that all drains and soil-pipes were to be kept as far as possible outside the house; that underground drains were to be made of "sound glazed stone-ware", with well-fitting joints, and made water-tight with Portland cement or other approved material; and that the main drains

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1. Lancet, 9th February, 1895, p. 356.
2. Med. Off. Ann. Rep., Camberwell, 1885-85, p. 75.
3. Med. Off. Ann. Rep., Camberwell, 1887-88, p. 90-91.
4. Med. Off. Ann. Rep., Camberwell, 1889-90, p. 118.

were not to be less than six inches in diameter, were to have no sharp curves, and to be laid evenly with a regular gradient from the sewer upon a bed of concrete or other suitable foundation. The regulations proved, as expected, not easy to enforce. From June, 1889 to March, 1890, the inspectors were largely occupied by the drainage of new houses, and by the reconstruction of existing house drains. During that time they supervised 452 cases of new or totally reconstructed drainage, and 703 cases of partial reconstruction. It proved an arduous duty:[1]

> ... the duties here spoken of have proved, as expected, very difficult and very exacting: for they have demanded, first of all, the careful consideration of plans of drainage: second, frequent visits of inspectors to works in progress; third, frequent testing of drains; and lastly, not infrequent conflicts of opinion between the Vestry officials on the one hand, and landlords, architects, builders, workmen, or tenants, on the other ....

One example of this type of conflict comes from Newington. The nuisance under discussion was the offensive smell which at times distressed the tenants of Messrs. Pullen's block dwellings in Crampton Street. Mr. Pullen himself held that[2]

> ... the nuisance complained of at the premises was due to the requirements of the Vestry with regard to waste pipes having been carried out.

In his experience waste pipes should be trapped and connected directly with the soil-pipes instead of being discharged over trapped gullies. The architect and medical officer of the LCC, which was called in to arbitrate, were both of the opinion that the nuisance was due to one of

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1. Med. Off. Ann. Rep., Camberwell, 1889-90, p. 118-119.

2. Sewer Papers, St. Mary Newington, 2/ Box 15, Southwark Collection; Clerk of the Council to Vestry Clerk, Newington, 16th December, 1895.

the tenants putting offensive matter down the waste-pipe, and that this was encouraged by the faulty arrangement of the drains. The MOH concluded, however, that there was nothing in the premises which indicated any need to connect the sink wastes with the soil-pipes directly, and that he was of the opinion that such a connection should not be permitted.[1] Pullen, defeated on this issue, was yet not going to submit to the dictates of the Vestry:[2]

> The waste-pipes discharging over an open gully having proved such a thorough nuisance in Crampton Street Blocks we now propose to cut off the waste with an intercepting trap and ventilate them separately with a Mica valve.

It is interesting also to note, from Pullen's plans for their new blocks of dwellings in Amelia Street, that the system of placing soil-pipes outside houses insisted on by Camberwell in 1889, and by the Public Health Act, 1891, was not a success. Pullen's new plans showed the soil-pipes inside "as formerly consented to", although in view of the fact that they were contravening the law the firm evidently found it necessary to provide evidence in their own justification:[3]

> ... and amongst the reasons for so doing is that in all cases where the soil pipes have been placed outside, they have been a dreadful failure; your Medical Officer and Chief Sanitary Officer can tell you of the frightful condition of Messrs. Sutton and Dudley's last winter where the soil pipes were placed outside.

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1. Sewer Papers; Report of the Medical Officer to the Council, 5th December, 1895.

2. ibid., J.G. Pullen and Son, to Newington Public Health and Sanitary Committee, 30th December, 1895.

3. ibid.

At the LCC buildings in Blackwall all the closets had been stopped up by frost and the entire sanitary system blocked so that fires had to be lit all about a closet on the basement floor that it might be cleared for the use of the inhabitants. At Hartnell's buildings in Robin Hood Lane, Poplar, hundreds of families had been deprived of their closets for weeks during the frosts, and[1]

> ... one case occurred at the Corner House in Robin Hood Lane where the soil pipes and drains all being frozen, when the thaw came the whole contents of the soil pipes and upper closets came up through the bottom closet basins, and the people rising out of their beds to ascertain the cause of the bad smells, actually stepped into the solid filth.

In spite of this moving evidence, and although the Institute of Civil Engineers had their soil pipes inside their new building at Great George Street, Westminster,[2] the County Council refused to sanction any departure from the requirements of its bye-laws, as formulated in accordance with the Public Health Act, 1891.[3]

The history of the London local authorities' attempts to improve the sanitary environment of London's citizens in the later nineteenth century reveals the extent to which any kind of improvement was an experimental progress. Hampered in so many respects by lack of knowledge, developing technology, legal complexities and prejudice among the general public, the sanitary departments came only slowly to exercise any real control over sanitary conditions in their localities, even at the most fundamental levels. In the Farewell Address delivered by

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1. Sewer Papers; J.G. Pullen and Son to Newington Public Health and Sewers Committee, 30th December, 1895.

2. ibid.

3. Sewer Papers; Clerk of the Council to Newington Vestry Clerk, 30th January, 1896.

the Chairman of Camberwell Vestry in 1900, just before the vestries were absorbed into the new boroughs, it was admitted that cesspools had been numerous in the parish even until recently.[1] The "progressive" Chairman of Newington Vestry, in a pre-election speech, quoted a local newspaper to show how sanitary progress was still hampered by prejudice even after half a century of publicity and endeavour:[2]

> ... our rates have increased by leaps and bounds under the progressist regime of reckless expenditure and faddism.

Yet, as the Vestry Chairman pointed out, although the Newington rates stood at 6/8 in the pound as opposed to an average of 6/2 for the Metropolis, there was good reason for this:[3]

> Higher than the average of all parishes, of course as it is higher in the matter of sickness and of mortality and lower in rateable value. Nothing else can be expected while our excessively overcrowded area is almost exclusively occupied by the poor and the industrial classes.

If the central rate of 4/-, which was the same for every parish, was deducted, the Newington parish rate was exceeded by 30 parishes in the Metropolis and equalled by 4.[4] It seems probable, however, judging by the figures for South London (see Tables 13,14),that there were reasons other than poverty and overcrowding which gave some parishes high rates.

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1. Camberwell Vestry Mins., 24th October, 1900.

2. Newington Vestry Mins., 26th May, 1897, quoted from the South London Mail, 15th May, 1897.

3. Newington Vestry Mins., 26th May, 1897.

4. ibid.

Although a great deal still remained to be achieved by the time the vestries were absorbed into the new London boroughs, a very considerable amount of vital work had been performed. The vigilance of the vestries' medical officers had provided better water supplies, and some control over industrial nuisances and obvious environmental pollution. Main drainage and local sewerage had been supplied and maintained, the former by the central authority, the latter by the local. "Beyond calculation" were the hundreds of thousands of pounds which the vestries had compelled owners of private property to expend in perfecting their household drains.[1] The effect of these environmental improvements on the general health of the population is difficult to assess; as the practitioners of preventive medicine had themselves come to recognise, other factors were of even greater importance than dirt in the spread of disease. The decline of typhoid more than any other factor bears witness to substantial improvements in water quality and efficiency of sewage disposal, while the continued steady presence of dysentery indicates how much more effort, of both education and prevention, was required before the improvement of domestic mores would come to complement the environmental achievement.

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1. Camberwell Vestry Mins., 24th October, 1900.

CHAPTER V

HOUSING AND THE HOME

I - The Epidemic Streets.

The association between poor housing, ill-health and insanitary habits was one which haunted the nineteenth-century public health and housing movements, and which produced more heart-searching and more literature than any other social theme of the period. The growth of public concern over the housing of the working classes, and the struggles of the housing reformers to achieve effective legislation on this subject, have been examined by several recent historians,[1] and it is not intended here to duplicate their work. The London Medical Officers of Health were, however, among the first to become involved in the housing question in any professional capacity, and were concerned not simply with the human and moral aspects of overcrowding, but with the more complex and difficult relationship between housing, mortality, morbidity and the incidence of disease. The evaluation of this relationship and consequently the establishment of housing priorities, was for many years clouded by the medical officers' incomplete knowledge of the local ecology of infectious disease. Until the passing of the Infectious Diseases Notifications Act of 1889, the only definite information which the local health departments possessed came from the mortality statistics - in several respects a doubtful health indicator when viewed in isolation.

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1. J.N. Tarn, Five Per Cent Philanthropy, Cambridge (1973); Enid Gauldie, Cruel Habitations, Allen (1974); A.S. Wohl, The Eternal Slum, Arnold (1977

In the years before registration, indeed before the bacteriological discoveries of the 1880s, the preventive authorities were to a large extent groping in the dark for some kind of a systematic approach to the housing question. The influential miasmic theory of disease dominated the public approach for many years, and continued to exercise a mis-guiding hand long after the medical profession generally had accepted the germ theory and the importance of contagion. Although the connexion between poor housing and disease was recognised, the details of the relationship remained obscure where miasmatism prevailed, and while knowledge of local disease incidence was irregular. William Rendle's discussion of insanitary areasin St. George's early in the period shows how easily confusion arose. His complaint was that

> ... the localities supposed to be improved, to which number-less visits have been paid, and about which a great deal of trouble has been taken, are turning up again and again, with new defects, as well as the old ones unremedied; epidemics soon find them out .....[1]

The particular case of which Rendle was complaining was Amelia Street, where the cesspools had been replaced by pans, but which had subsequently experienced an epidemic of malignant scarlet fever, from which several deaths had occurred. This Rendle attributed to the shoddy nature of the repairs, which did not prevent the escape of vapours from the nightsoil; scarlet fever spreadsby droplet infection, or by contaminated milk or food, butthis did not become clear until later in the century.

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1. Med. Off. Rep., St. George's Third Quarter, 1858, p. 1.

The problems associated with housing classified themselves under three heads: the fabric and position of the house; the drain and sewerage provisions; and the health of the inhabitants. The demand for houses in the central areas of London, which was the origin of the properties, also had an adverse effect on the quality of new housing. Bateson found the carelessness shown in building astonishing.

> No care is taken about the nature of the subsoil, the position of ventilation, and the means of cleanliness. They (new houses) are run up anywhere, and almost anyhow, and too often become the prolific source of disease.[1]

The current Building Acts were a great hindrance to the improvement of the parish, since they in no way curtailed the instinct of the builder to save as much ground, materials and expense as possible.[2] The same problem existed in Newington, where there was some concern in the Vestry as to why new houses should contain disease. Iliff's reply was, quite simply, that new houses were not always as satisfactory as old ones, from a sanitary point of view. Some of their inhabitants were not the most cleanly characters, and generally in the new houses sanitary defects were much greater than in the old ones.[3]

The very definition of what was insanitary also caused problems. The serene confidence of the Honourable Maude Stanley that, although the houses in her charge were in very bad condition, they were not insanitary "because there is no illness about them",[4] was not shared by others. There

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1. Med. Off. Ann. Rep., St. George, 1860-61, p. 18.
2. ibid., 1861-62, p. 11.
3. S.L.P., 15th March, 1879.
4. RCHWC, q. 2955.

was uproar in Camberwell Vestry when the Thornhill Committee on Improvement attacked Mr. Potter's houses in Canal Row as "unequalled in stench and filth",[1] and Bristowe's response on this occasion (in 1867) was very similar to his reaction to the Bitter Cry of Outcast London in 1883. The Canal Row houses were not as nice houses as he would like to see, but they had water supply, water closets, and were properly drained.[2]

> People not in the habit of going into poor property would think them dirty, though the inspectors and himself would not consider them so, though far from being as he would like to see them.

The exaggerated emotional reaction of the general public when the housing conditions of the poor were brought to their attention, was in fact an intermittent source of irritation to the preventive authorities. Given that it was the "submerged tenth" of London's population, and its life-style which provided the popular reaction against improvement efforts, the waves of public interest in the problem simply confused the issue even further, and hampered the medical officers in the careful process of sanitary improvement. In this respect, the publicity which the Bitter Cry gave to the sanitary problems of the metropolis was unwelcome. Bristowe's reaction was to produce a pamphlet explaining the difficulties of the vestries' task - in fact of the medical officers' task - where housing improvement was concerned. This document was bound into his annual report, a fact which did not inhibit the sharp resentment of public interest which he displayed in his first paragraph:[3]

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1. S.L.P., 2nd February, 1867.
2. ibid.
3. Med. Off. Ann. Rep., Camberwell, 1883-84; Report on the Sanitary Acts in their Relation to the Houses of the Very Poor, p. 155.

> The subject of the housing of the very poor has again been brought prominently before the public. Distinguished members of both houses of parliament, who have probably little or no real acquaintance with it, have been parading their views of the nature and extent of the existing evil, and as to how this evil may best be dealt with; with the object (if one may deduce it from the character of their utterances) rather of bidding for popularity than of dealing with it in a practical way. Clergymen, who are probably more shocked at the immorality prevailing amongst the very poor and at their little knowledge or appreciation of Christianity than at their actual sanitary condition, have written highly-coloured accounts of the wretchedness of the hovels they inhabit. And public meetings have been held at which all but those who are best acquainted with the domestic condition of the very poor have expressed their feelings, and have passed hasty resolutions, some of which, at any rate, if embodied in Acts of Parliament, would probably aggravate the evils they were intended to cure.

The irritation at too strong an uninformed "lay" interest in the problems of preventive medicine was not peculiar to Bristowe. Iliff's attitude was much the same when he spoke of the wild and impracticable theories of those who knew nothing of the real difficulties, and who fancied that the sanitary authorities had done nothing for years and years.[1] The fact was that the problems were so great and so complex that the process of improvement could not be anything but slow. He greeted the subsidence of interest with relief, expressing the belief that the public were again settling down to a common-sense view of the matter, to the conviction that sanitary measures must be steady and continuous. But he did not leave the subject without a rider:[2]

> I would not say one word to discourage those who seek to do good, I willingly accept their help, only too thankful when a good practical result follows, but I do say that the Utopian ideas entertained by some do positive harm; they raise hopes impossible to be fulfilled ... and they omit all reference to the obstacles, as formidable as numerous, and some insuperable, which arise from the circumstances of the locality, from the habits of individuals .....

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1. Med. Off. Ann. Rep., Newington, 1883-84, p. 124.
2. ibid.

During the 25 years or so in which the medical officers had been at work previous to the great public awakening of the 1880s, they had learnt by hard experience what, in terms of housing improvement, was possible in the conditions of Victorian London. It was this expertise of judgement as to the legal and social possibilities of a given situation which the impressionable concern of the "casual philanthropic visitor" threatened to undermine. Further, the aims and methods of the philanthropic housing reformers ran, at times, directly contrary to the desired standards of the preventive authorities. Octavia Hill, for instance, considered it ridiculous to carry water and drains "all over the place" in a working class dwelling. Although in most blocks or working mens' dwellings these were provided to each tenement, this was not in the least necessary: far more economical that they should be available at a common point on each floor.[1] Her opinion was shared by the kingpin of the Peabody Trustees, Sir Curtis Lampson.[2] The possiblity of tenants reverting to the much deplored habit of keeping uncovered buckets of water standing in their rooms because of the chore of carrying it to and from the common pipe, does not seem to have been considered, although the laying on of water to each tenement was a simple guarantee of uncontaminated supplies. In all, there was a fundamental difference of approach between the professional interest of the medical officers in controlling and modifying the sources of disease, and that of the philanthropic reformers whose aims were largely focused on improving the manners and morals of the labouring classes as economically as possible.

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1. RCHWC, q. 8852.

2. ibid., q. 11,686.

The local history of sanitary improvement reveals both the enormous amount of work done by the sanitary officers, their intimate knowledge of the problems of many poor areas within their jurisdiction, and the way in which their sources of information limited their cognisance of trouble spots. Most of the medical officers questioned by the Royal Commission on the Housing of the Working Classes revealed at least one blank in their knowledge of the poorest or most diseased areas of their parish. This can largely be explained by the fact that up until 1889 the mortality statistics and the Poor Law medical services constituted the chief sources of information on disease incidence. The former gave little clue as to case incidence, and none at all if the cases did not result in any deaths, while animosity towards Poor Law institutions probably restricted the information available from this source, which in any case could not provide data for many social groups outside Poor Law jurisdiction. From 1889, however, it became possible, by means of the disease maps which most medical officers kept for their areas,[1] not only to keep a track of the incidence, movements, and relative mortality rates of diseases such as diphtheria, scarlet fever, smallpox and typhoid, but also to gain a picture of the disease vulnerability of individual streets over a period of years. This type of information provided invaluable guidance to areas which because of their high disease incidence were in need of preventive attention, and, in alliance with increasing knowledge of the mechanics of infection, were valuable in establishing the improvement priorities in particular areas.

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1. These were kept in all three parishes: those for Camberwell, and for St. George with one exception, have been lost. Copies of the Newington maps except that for 1897, were bound into the Medical Offficer' annual report.

The best example of the way in which the 1889 Act was used for the purposes of detection comes from Newington. Newington was a parish which experienced the transition from moderate prosperity to relative poverty in the second half of the century. In 1851 the parish had a population of 64,876 and 10,458 inhabited houses on an area of 632 acres, a density of 6.2 persons per house, 103 per acre. By 1871, these densities were 7.1 and 140 respectively; by 1891, 8.6 and 183. In 1856, the parish had been largely rural, but the value of the respectable private houses in the area was already declining because large numbers of houses of an inferior character had been erected too close to them.[1] Only a decade later the Vestry put it on record that it must now be considered a town parish.[2] In the early 1870s, building was taking place on the Walworth Common Estate (48 acres) in the south-east of the parish, and on Lorrimore Common to the south-west (16 acres of land and 3 of water). Although these areas are shown on Booth's poverty map of 1889 as being respectable areas of good ordinary earnings,[3] this did not prevent them from containing disease, nor from contributing to the density level of the parish: clerks and artisans frequently took in lodgers.[4] By the early 1880s the population density of the parish was 172 persons per acre, and Iliff was expressing his disbelief that mortality in the area (about 22 per thousand) would ever be reduced: "100,000 packed into 632 acres, with the probability of another 5,000 at least ... before many years have passed ...". The situation was aggravated because[5]

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1. Newington Vestry Mins., 16th January 1856.
2. Vestry Ann. Rep., Newington, 1866-68, p. 8.
3. Booth, Life and Labour, 1891, Vol. II, Appendix, Map 2, South-eastern section, G-H, 9-10; see Map 5.
4. Med. Off. Ann. Rep., Camberwell, 1883-84; Report to the Sewers and Sanitary Committee on Houses Let in Lodgings, p. 111.
5. Med. Off. Ann. Rep., Newington, 1883-84, p. 123.

> the numerous lofty buildings which are arising hither and thither for the accommodation of the working classes tend in no slight degree to check the free circulation of the air in the surrounding tenements, and certainly do not assist in promoting health or comfort.

Newington was from an early date selected by builders and philanthropists for the development of working class housing. Among the earliest developers to start work in the area were the firm of Sutton and Dudley, of Telford Park, Streatham Hill, who also took in land in Camberwell and Wandsworth. By the 1880s the firm held four estates in Newington, comprising about 100 six-roomed houses on the Newington Estate at Newington Butts, the 36 blocks of the Palatinate in the New Kent Road, and a mixture of blocks and houses on the 14 acre Surrey Gardens Estate behind the Vestry depot to the west of the Walworth Road.[1] These developments were largely of working class housing, although the Palatinate buildings were initially intended for middle-class occupation, and were supposed to form "an entirely distinct, select, and healthy locality".[2]

The Surrey Gardens Estate was the largest of the Sutton and Dudley speculations, and by 1896 consisted of 390 tenement houses of eight to nine rooms, arranged for three or four families, and 19 large blocks of separate and self-contained dwellings.[3] In 1896, the attention of the Medical Officer, George Millson, was drawn to the high incidence of diphtheria on the estate, and to the fact that, although the mean death-rate for the estate was less than the average for either the ward or the parish, the general zymotic case-rate for the period 1892-96

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1. RCHWC, evidence of John Dudley, qq., 13024-13050.
2. S.L.P., 15th January, 1876.
3. Public Health and Sewers Comm., Newington, 14th December, 1896.

was much higher.[1] The incidence of diphtheria was also greater than on five other comparable estates in the parish (see Table 16). The population of the estate amounted to some 5,753 persons, and a population of this size evidently constituted an even more considerable source of infection than its child component constituted a population at risk. A detailed investigation of housing conditions on the estate followed, with a number of interesting results.

The most important factor was perhaps that no overcrowding could be found, and there was no suspicion that "night-crowding" might none the-less exist.[2] The population of the estate was a mixed one, some comfortable, others poor, with a middle class group (shop-keepers?) in Manor Place, and a distinct poverty colony in Tarver Road, near the northern boundary of the estate. The condition of the property seems to have been reasonable: neither the relevant material nor the general parish records remark it as an insanitary area, although Booth notes that the area was rapidly deteriorating.[3] This observation tallies with Millson's remark that the building of the estate had begun in 1878, and that the construction of the houses, which covered the main portion of the estate was of "the defective jerry-built kind so common to that period".[4] The three blocks which had been built with the parent estate were of the same faulty construction, with soil-pipes of improper material inside the houses, defective sinks, and unventilated drain and closet traps, but the 16 new sets, built only a few years previously, were of first

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1. Report of the MOH on the Surrey Gardens Estate in 1895, Southwark Collection, Documents on sewers, 2/ Box 10, Dated 11th December, 1896.
2. ibid., "night-crowding", the residence at night, of persons employed elsewhere during the day, whose existence might thereby be concealed from the inspectors.
3. Booth, op. cit., Vol. II, Appendix, p. 49, and Map 2, south-eastern section, G9 and G10.
4. Report on Surrey Gardens Estate.

rate construction, and their drainage and sanitary appliances were in accordance with all the bye-laws and regulations. Apart from the condition of the buildings, the estate was not particularly healthy: lying only 11 feet above sea level, the area was often flooded. As recently as June 1896, flood water on the Surrey Gardens Estate had reached a depth of 5 feet 3 inches.[1]

The importance of the diphtheria epidemic on the estate lies in the way in which the working of the 1889 Notification Act brought both the epidemic and the condition of the estate into prominence. Although the strain of the disease present in 1895 was of a most malignant kind, with a 37% death-rate which would probably have drawn the MOH's attention in any case, the notification records showed the disease to have been present on the estate in unusual proportions in the two previous years, even though the deaths registered had been few.[2] Previous to notification it would have been possible for the preventive authority to remain in virtual ignorance of the extent of the epidemic beyond the deaths registered. Knowledge of the extent of the epidemic, particularly as compared to the incidence of the disease on similar estates (Map 51), stimulated the thorough investigation of the ecology of the disease in the area. The very general popular belief[3] that diphtheria was caused by sewer-gas was no doubt the origin of the Public Health Committee's order to the MOH and the Surveyor for an extensive investigation of the drains and sewers on the estate. This established

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1. Med. Off. Rep. on Surrey Gardens Estate.
2. ibid.
3. Med. Off. Ann. Rep., Camberwell, 1893-94, p. 499.
4. Public Health and Sanitary Committee Mins., Newington, 14th December, 189(

that, while three-quarters of the houses had grave drainage defects, the sewers under Tarver Road and Pasley Road were far from water-tight, and had polluted a wide area of the surrounding subsoil with sewage.[1]

The response of the Public Health Committee to the Medical Officer's report reflects something of the conservatism of public attitudes, and of the slow impression which the new bacteriology made on the consciousness of the non-medical administration. In his report, Millson had made a careful statement of his opinion as to the cause of the epidemic in the locality, and of the disease in general. He did not believe that overcrowding and drainage defects were concerned in the spread of the complaint, but that the water-logged condition of the subsoil of the district, and the dampness of the basements (due rather to the low-lying nature of the area), brought about a low state of vitality in children which rendered them more liable to infection. The disease itself was contagious: transmitted from person to person:[2]

> Indeed in this epidemic ... it is singular to see so many of those attacked belonging to the same school, and known to have been playmates .....

The Public Health Committee was resolute in ignoring the implications of the MOH's sociological observations, and even his careful statement of the natural topographical dangers inherent in the position of the estate. Their statement of the case is so arranged as to encourage the assumption that the defective sewers were responsible for the dampness of the subsoil and the basements. The recommendations which concluded their report were entirely concerned with the reconstruction of the

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1. Publ. Health and San. Comm., Mins., Newington, 14th December, 1896

2. Med. Off. Rep. on Surrey Gardens Estate.

sewers under the estate and the parish in general, producing the impression that the ideas of the medical officer were in fact slightly eccentric. As the faulty sewers were responsible for the disease,[1]

> ... the Vestry must put their own house into order before calling upon the Owners to remedy other minor defects, the carrying out of which cannot materially remedy the condition of things on this Estate, or remove the risk of some even more serious epidemic disease breaking out on the Estate than that of diphtheria.

Millson's point that it was the social customs of the estate's inhabitants even more than their surroundings that was a condition of the epidemic produced no practical response from the Committee: for the next two years all references to the estate are entirely concerned with sewerage.[2]

In spite of Charles Booth's observation that most of the poverty in his district 113 a[3] was to be found in "some closely-built tenement houses" on the site of the old Surrey Gardens,[4] Millson's evidence on the 1895 diphtheria epidemic suggests that this poverty was of a respectable kind. Beside the evidence considered above, infant mortality and the major causes of death on the estate were examined. Infant mortality is a sensitive indicator of the general quality of living conditions. In 1895, the infant mortality rate on the estate was 140 per 1,000 live births: for the parish in general the rate was 201, and for London as a whole it was 165. This would seem to suggest that the houses were relatively

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1. Public Health and San. Comm. Mins., 14th December, 1896.
2. ibid., 18th October, 1897, 21st March, 1898.
3. Map 51.
4. Booth, op. cit., Vo. II, Appendix, p. 49.

clean, and that the women on the estate were of a class to become careful mothers. It is, of course, dangerous to generalise from one set of figures only, but the differences between the figures for the three areas are large enough to suggest that the figure for the estate may be taken as representative. The other figures recorded for the estate are those of deaths from certain causes, as indicated below:[1]

Deaths on the Surrey Gardens Estate, 1892-96.

	1892	1893	1894	1895	1896 (48 weeks)
Measles	9	1	2	11	2
Phthisis	13	19	15	16	15
Pneumonia and Bronchitis	35	33	22	32	8
Diphtheria	2	4	1	14	3
Total, all causes	117	131	98	152	90

Deaths from measles at this period came about invariably from complications produced by neglect; the disease was not notifiable, and there are no indications of the relative proportions of deaths to cases. Phthisis, pneumonia and bronchitis, on the other hand, were major killers. In Newington there were, in 1895 and 1896, 304 deaths in each year from tuberculosis, and 685 and 449 deaths from the chest diseases. Again, these deaths did not necessarily reflect insanitary conditions. Given

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1. Med. Off. Rep., on the Surrey Gardens Estate.

the household pattern of tuberculosis infection on the one hand, the undoubted dampness of working class housing at this period, and the necessity to work in all weathers, the prevalence of these conditions was not surprising, as Millson informed the Vestry:[1]

> The struggle for existence is very severe in the parish, and it is no figure of speech to say that the majority of the people in the parish, when they die, do so literally in harness.

The statistics made available through the Notifications Act can thus be used to illumine the factors contributing to the health condition of the Surrey Gardens Estate. The houses on the estate were not, it seems dirty, although 330 of them had drainage defects of some description.[2] They were, however, badly built, and closely packed: the chances are that they were draughty, damp,[3] and without sufficient light and ventilation. These conditions would in themselves be enough to produce the anaemia which Millson remarked in the children[4] and to lower their vitality and resistence. Endemic pneumonia and bronchitis would also be produced in this way, as would a high incidence of complications in measles. Although there was no actual overcrowding, the presence of three or four families per house (each in a set of two or three rooms) extended the number of susceptibles , once tuberculosis was actively present in the house. The presence of a poor but respectable and caring population is argued by the low infant mortality in these conditions, and by the

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1. Vestry Ann. Rep., Newington, 1895-96, p. 70.
2. Public Health and San. Comm. Mins., Newington, 14th December, 1896.
3. for damp in working class houses see SCALDI, q. 1968; Bowmaker, p. 66-67.
4. Med. Off. Rep. on Surrey Gardens.

evidence of the medical officer that the average death-rate was in fact lower than that for the parish as a whole. The heightened incidence of diphtheria on the estate - also indeed the high incidence of scarlet fever (except in 1895 consistently higher than diphtheria in these years)[1] - can with some degree of certainty be attributed to the fact that a large proportion of the children attended the same school, and played among themselves, and with peers attending other schools, in the streets when school was out.

A second, though less detailed, examination of an estate microcosm exists from Newington, for the Clandon Street/Wooler Street Estate in 1899. This estate lay to the east of the Walworth Road (see Map 51) and is marked on Booth's map[2] as containing a poor and a mixed population. This indicates a predominance of poverty, and Booth records that there were many cabmen, costers and labourers in this area. It is possible that the estate had deteriorated further in the decade between the issue of Booth's map and Millson's inquiry. The latter describes the house on the estate as being in a generally insanitary and dilapidated condition: the LCC were to be asked to consider the 7½ acre site as suitable for the erection of artisans' dwelling under section 3 of the 1890 Housing Act.[3] The property consisted chiefly of the small tenement class of houses,[4] - apparently four-roomed and containing on average 9-12 persons per house.[5] All the leases on the property were due to expire in three years time, but until then there was a population of 2,197 persons with a death-rate of 24 per thousand to be considered.[6] The improvement of

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1. Map 5.
2. Booth, op. cit., Vol, II. Appendix, Map 2, south-eastern section, H9-10.
3. Pub. Health and San. Comm. Mins., Newington, 11th December, 1899.
4. ibid.
5. ibid., 2nd April, 1900.
6. ibid., 11th December, 1899.

conditions on the estate was attempted through the application of the Lodging Houses Acts. The medical officer's notification records were inscribed in the Public Health Committee minutes, and from these it is possible to collate a picture of infectious disease on the estate in 1898-1900 (Table 17).

The infectious disease experience of the estate in fact shows a remarkable improvement in the year 1900, when at least 45 houses were registered as houses let in lodgings.[1] Whether or not it was the disease incidence on the estate which first attracted the attention of the authorities cannot be guessed. The incidence of diphtheria and scarlet fever was, however, extremely high if the figures for the Wooler Street Estate are compared with those for the Surrey Gardens Estate in 1892-96 (Table 14), in view of the fact that the population of the former was less than half that of the latter. The houses on the Wooler Street Estate were often overcrowded; that they were insanitary, and did contain what was probably a significantly poorer population were probably both important factors in the increased incidence of infectious disease. The constant visiting between different families and different houses aggravated the effects of overcrowding by multiplying the opportunities for infection. The very existence of illness in such a community was often the occasion for a social gathering.[2] The child factor may also have been important, partly because of playing habits, but also because St. Peter's Board Schools were located in Shaftesbury Street, in a central position on the estate. Once the preventive authorities had an eye on the estate, however, and the houses were being visited with

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1. Pub. Health and San. Comm. Mins., Newington, 2nd April, 1900; 26th June, 1900.

2. Med. Off. Ann. Rep., St. George, 1896, p. 31-32.

regularity so as to secure registration and to enforce regulations, the recognition and restriction of infectious cases probably followed with greater effectiveness as a corollary.

By way of further comparison, one other disease table is available, this time from Camberwell, from the notorious Hollington Street Estate.[1] The houses in this area, just west of the Camberwell Road, had been a consistent concern of the public health department since the early 1870s.[2] In 1874, the Surveyor reported that, in view of the "alarming epidemic so present in the immediate localities" of Hollington Street and Sultan Street, he had deemed it expedient to employ four men to cleanse them and to remove the dirt.[3] Despite all efforts, conditions did not improve. Booth condemned the area as one of the "most accursed patches of poverty and of vice",[4] and it continued a trouble spot until the new borough council purchased the estate and began to reconstruct the houses from 1900.[5] The Vestry Minutes bear witness to continuous efforts at improvement in the late 1880s and throughout the 1890s, long before the local philanthropists, alerted by their reading of Booth, leapt into the fray in 1895. In that year 14 signatories, four of them "clergy" (one was a lady member of a religious order), five members of Camberwell Vestry, petitioned for a new road to continue Sultan Street into Toulon Street, and thence into Westhall Road and the Camberwell Road. In thus opening a closed community to the outer world, they hoped to

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1. see H.J. Dyos, Victorian Suburb, (1961), pp. 109-113.
2. Camberwell Vestry Minutes, 9th November, 1870; 3rd March, 1871; 8th November, 1871; 17th January, 1872; etc.
3. Sewers and Sanitary Comm. Mins., Camberwell, 9th January, 1872.
4. Booth, op. cit.
5. A.S. Wohl, The Eternal Slum, (1977), p. 277-78.

bring improvement to an area "shut in with vice and wretchedness", a "source of the deepest pain to the clergy and others brought into contact with the poor people dwelling in this neglected area".[1]

As a result of this letter, a sub-committee of the Vestry was formed to inquire into the matter. A visit to the estate was put in train, the result of which "was, in the mind of every member of the Sub-Committee, appalling". The condition of Beckett Street made a particular impact on the good gentlemen, perhaps because there were so many barrows and other vehicles in the "exceedingly narrow" thoroughfare that passage was difficult, and cleansing seen to be impossible.[2] This visit was the beginning of a prolonged and concerted struggle for improvement. Francis Stevens did not entirely approve of this development, as can be gauged from the tone of his reports: to put through a new road would only increase overcrowding in the surrounding streets by raising rents in Sultan Street itself.[3] To forbid the keeping of donkeys - which were kept in the back yards, but brought through the houses into the street - would destroy livelihoods:[4]

> it is better that they should keep animals and earn a living than that the animals should be forbidden on sanitary grounds, and the people be thrown into want and distress.

Nevertheless, the Vestry's concern resulted in the recording of more information on the Hollington Street area than might otherwise have been available.

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1. Camberwell Vestry Mins., 24th February, 1897 (letter dated 21st November, 1895).

2. ibid.

3. ibid., 27th April, 1896; Med. Off. Ann. Rep., Camberwell, 1897-98, p. 12-13.

4. Med. Off. Ann. Rep., Camberwell, 1897-98, p. 13.

The disease schedule which exists for the estate is for 1895 only, but is of some use even so for the purposes of comparison. The medical officer estimated the population of the eight streets on the estate to be 4,532 persons in 1896, although he considered this probably an underestimate.[1] The number of deaths on the estate was 103 in 1895; in 1896 there were 12 deaths in Beckett Street alone.[2] Of these, eight were significantly from bronchitis, another an infant death from convulsions. Stevens did not consider the death-rate to be remarkably high, nor one that called loudly for demolition; although at a time when the average, annual mortality of the parish was about 18 per thousand, his feelings on the subject of the employment and displacement of the poor concerned must have been considerable to gloss over a death-rate of nearer 24 per thousand. The infectious disease statistics were allowed to stand without comment.[3]

Statistics of Notifiable Infectious Disease for the Area, 1895.

	Diphtheria	Scarlet Fever	Typhoid	Smallpox	Erysipelas	Total
Beckett Street	3	6	-	6	2	17
Crown Street	1	-	-	-	1	2
Sultan Street	2	5	-	-	2	9
Hollington Street	3	3	2	4	1	13
Toulon Street	-	-	-	7	1	8
Pitman Street	-	-	-	-	3	3
Thompson's Avenue	3	1	-	-	2	6
Gange Street	-	1	1	-	-	2
Totals	12	16	3	17	12	60

1. Med. Off. Ann. Rep., Camberwell, 1897-98, p. 14.
2. ibid.
3. ibid.

The number of children on the estate was probably, judging by the Sultan Street evidence,[1] appreciably higher than the average for the families of skilled and unskilled labourers in Camberwell at this time; there was also a high level of crowding. The philanthropists, rather vaguely, claimed five or six families to a house;[2] modern research shows that in Sultan Street in 1881, over half the population of 1,038 persons was to be found 13-18 per house, while a further 14% were 19 per house.[3] The dense crowding of this extremely poor population was probably an important factor contributing to the high number of infectious cases. Yet in spite of the fact that the people in this area were evidently of the kind to resent outside interference, it is interesting to note, from 44 Hollington Street, a child in hospital with typhoid fever.[4] Inroads were possible into the closed structure of the community. Nevertheless, the inspector who was delegated to investigate overcrowding on the estate, and who spent 21 nights in Hollington, Sultan and Toulon Streets, measuring rooms and making inquiries, was moved to remark in his report that "this work is not only irksome but very risky, especially visiting alone as I can speak from experience".[5]

In spite of the outrage which the condition of the Hollington Street Estate occasioned among the clergy, the philanthropists, and the members of Newington Vestry, who in this context may be counted as "casual philanthropic visitors", a comparison between the case statistics of infectious disease on this and on the Surrey Gardens Estate seems to show

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1. H.J. Dyos, "The Slums of Victorian London", Victorian Studies, XI, September, 1967, p. 32.
2. Camberwell Vestry Mins., 24th February, 1897.
3. Dyos, op. cit., p. 31.
4. Sewers and Sanitary Comm. Mins., Camberwell, 16th February, 1897.
5. ibid., 6th July, 1897.

that neither insanitary conditions, nor overcrowding were of particular relevance to the disease incidence. It may be that Stevens' attitude against major interference in the ecology of Hollington Street was based upon the observation that disease levels were not in fact significantly higher there than elsewhere in the parish. Although the Surrey Gardens population was higher by more than a thousand persons, on balance - and if the Wooler Street figures for 1898 are also taken into account - it does not seem that the black spot of Hollington Street was any unusual nest of infectious disease. Distorting factors were of course present: both scarlet fever and diphtheria were epidemic in London in these years, while the smallpox outbreak on the Hollington Street Estate was apparently a localised one, which was contained without effort by the Camberwell authorities.[1] The Newington disease maps do, however, permit a closer assessment of disease incidence on the Surrey Gardens Estate in relation to the rest of the parish than is possible in Camberwell. From these maps it is clear that, although the Surrey Gardens did carry a greater concentration of infectious cases generally than the rest of the western part of the parish, they did not appear to carry any greater density of cases than the central-eastern and north-eastern areas. The southern areas of the parish were altogether freer from infection, except for the Workhouse. The southern areas are in fact those which carry the greatest predominance of pink (fairly comfortable, good ordinary earnings), on Booth's poverty map of 1889, (Map 5).

The solitary surviving disease map from St. George's[2] also permits some telling observations. For instance, this map shows very clearly that the block dwellings in the parish, including the Peabody Buildings,

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1. Med. Off. Ann. Rep., Camberwell, 1896-97, pp. 8-9.

2. Southwark Collection, Map 218.

Quinn's Buildings Duke Street, Queen's Buildings Collinson Street, Douglas Buildings Mint Street, and Clifton Buildings, Mint Street, together with the Mason Street Board Schools, were foci of scarlet fever. The Workhouse and the neighbourhood of the Surrey Theatre, close by the Peabody Buildings, were so for smallpox. In view of the contemporary debate on the disease vulnerability of block dwellings this map is of some interest. In evidence before the Royal Commission of 1884 the medical officers and the philanthropic investors differed noticably on the subject of whether or not block dwellings were a contributing factor to epidemic disease. Sir Sidney Waterlow claimed not to have had a high death-rate in any of his blocks, and added the rider that in 20 years' experience his company had never had contagious diseases spread.[1] Sir Curtis Lampson held up for approval a quinquennial death-rate of 18.8 in all the Peabody Buildings, as against a rate of 21.69 for London in the same period.[2]

The medical officers examined seemed altogether less convinced of the greater protection against infectious disease provided by block dwellings. David Davies, the highly articulate MOH for Bristol, was perhaps the least reticent on this point when he insisted that[3]

> If you put up any large number of houses with anything approaching to the communism of families you incur danger.

It is this point which the evidence of the disease schedules and maps, and even the documentary evidence of the parish records seem to bear out. As far as the incidence of infectious disease was concerned, it

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1. St. George, Vestry Mins., 10th February, 1863.
2. South London Press, 5th August, 1871.
3. Med. Off. Ann. Rep., St. George, 1870-71, p. 21.

was the social habits of the population concerned which were of importance. The "communism of families", whether encouraged by close association in block dwellings, or established by long usage as a way of living, was a fundamental condition for the spread of contagious disease in the nineteenth-century city. The experience of St. George's in this respect is illuminating. The parish was among the first to see the advantages of Mr. Peabody's donation, and as early as February 1863 had sent a deputation to the Trustees to represent their case.[1] Buildings were duly erected on the site of the old Magdalen Hospital, and were opened on August 1st, 1871.[2] Bateson, who had speculated on the development in some of his best purple prose - would the blocks be like Duke Street, Mint Street, Friar Street, and Lansdowne Place, where disease, crime and immorality ran riot, or would they "stand out like some tall beacon, to warn and to guide?"[3] - was initially disappointed.

The source of his disappointment lay in the death-rate of the buildings, which in their first nine months of existence stood at 23½ per thousand. The reason for this was not perhaps far to seek, given the devastating effects of damp upon the constitutions of the Victorian working classes. The buildings had been occupied too soon after they had been finished, and when Bateson visited them months later, many of the ground floors were still very damp.[4] With time, conditions improved, and by 1874 the death-rate for the Buildings stood at a more satisfactory 18 per thousand. Bateson was not, however, fully convinced of the educational value of model dwellings:[5]

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1. St. George Vestry Mins., 10th February, 1863.
2. South London Press, 5th August, 1871.
3. Med. Off. Ann. Rep., St. George, 1870-71, p. 21.
4. ibid., 1871-72, p. 19.
5. ibid.

> Still in these cases there needs a due watchfulness and care over the occupants, to prevent them falling into apathetic and slovenly habits, and so turning their habitations into "little nurseries of disease". What they cannot do for themselves must be done for them, and what they can do for themselves ought to be enforced.

One instance of what happened in model dwellings when they were inadequately supervised came to light - or half-light, for the details were recorded only in the Sanitary Committee Minutes, - in 1883. At the end of October 1883, an outbreak of scarlet fever in the Peabody Buildings was brought to the medical officer's attention,[1] and during his subsequent investigations, Waterworth uncovered a case of immorality; four teenage brothers and sisters sleeping in the same room.[2] The attention of the Trustees was indignantly called to the matter,[3] before the Vestry lapsed into its accustomed lethargy. The epidemic was, meanwhile, not controlled without difficulty: there were six deaths, and ten cases were removed to hospital.[4]

The need for the close supervision of model dwellings, as well as of ordinary tenement and lodging houses, was constantly reiterated by the medical officers of St. George's. Model dwellings in themselves were no solution to the problem of the submerged tenth, of the very poor; at times it did not seem as if they were the solution to the housing of the respectable poor either. Bateson visited a recently erected block in 1866, which had only been occupied for six months and was then standing empty. It was greatly damaged and exceedingly dirty, yet the three room

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1. San. Comm. Mins., St. George, 30th October, 1883.
2. ibid., 20th November, 1883.
3. St. George Vestry Mins., 27th November, 1883.
4. Med. Off. Ann. Rep., St. George, 1883-84, p. 13.

flats had been let at 7/6 a week, a rent which must have ensured a superior class of people.[1] When in the early 1880s a considerable amount of building land was about to become available in the parish due to the closing of the Queen's Bench Prison, and the closure by the Metropolitan Board of Works of a great many houses in Green Street, Friar Street, and the Mint, Waterworth expressed the hope that,[2]

> ... it will not be long before these areas are completely demolished, and decent houses erected in their place, but not Industrial dwellings.

In the 1890s, at least one group of model dwellings was giving the Sanitary department constant trouble: Edward, Lawrence and Wilfrid Houses, erected by a speculative builder in Potier Place. The Medical Officer of the time, the highly professional Frederick Waldo, stigmatised these buildings as being "representative of 'model dwellings'", that is they were "often inhabited by uneducated and unruly poor, for the most part badly supervised". They were a constant source of anxiety to the sanitary department, but their condition was hardly bad enough to warrant a closing order.[3]

The attitude of St. George's medical officers towards model dwellings was apparently not unusual among those familiar with poor areas and their housing problems. The South London Press, a paper alert to current social and medical questions, was by the 1890s categorical in its disapproval of[4]

> ... huge piles of cheaper rabbit-hutches, in which human beings breed like rabbits, with little more intellectual interest in the life around them.

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1. Med. Off. Ann. Rep., St. George, 1866-67, p. 23.
2. Med. Off. Ann. Rep., St. George, 1880-81, p. 11.
3. Med. Off. Ann. Rep., St. George, 1897, pp. 22-27.
4. S.L.P., 4th June, 1892.

Discipline, in the sense of personal training, which most of the poor needed more than money, was entirely absent from industrial dwellings. In this respect the new buildings which the Guinness Trust had put up in Brandon Street, Walworth, were a distinct improvement.[1] Rents for 1-3 rooms were from 1/6 to 5s a week; the walls were a warm pink, there were wash-houses on every floor, a common hot water tap (the Peabody Buildings ran to cold water only), sheds for costers' barrows and perambulators, a common-room and a crêche. Such devices the paper had thought "still slept in the brain of a social dreamer". The most impressive indication of the positive attitude with which the poor came into these buildings was disclosed in the statement,[2]

> I know of no place where there are so many door-mats.

Ultimately, the question was not simply one of providing an adequate number of cubic feet of air, and a judiciously economic supply of drains and cold water: the potential for homeliness had to be great enough to kindle housepride in the tenants, and to stimulate that certain formality in social relations, that sense of privacy, which is the hallmark of middle class culture.

The relationship between housing and disease which the preventive authorities were attempting to evaluate in this period was far more complex than had been envisaged in the early days of sanitary reform. The importance of a wholesome house fabric, which seemed of over-riding moment, the central solution to the disease question, during the ascendancy of the miasmic theory, gradually came into perspective. Drains,

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1. S.L.P., 17th September, 1892.
2. ibid.

water supplies, ventilation, light, sound walls and damp courses, retained their fundamental importance among the priorities of good housing, but these did not in themselves cause disease; disease could not be generated de novo by an unsatisfactory fabric,[1] although this might significantly affect the course and eventual outcome of the illness. The bacteriological discoveries of the 1880s were the major stimulus to this realisation, and revealed a further dimension to the problem of disease control which had been suspected by some, but which had now received confirmation. The proven existence of specific organisms of disease lent an added weight to contagionist measures such as were used against smallpox, and the extension of such methods to other infectious diseases became easier. The Infectious Diseases Notification Act symbolises the recognition of the importance of these discoveries, and the admission of the importance of human relationships in the spread of disease. In all, developments in bacteriology permitted a greater precision of analysis in respect of the housing problem. As the initial spread of disease came to be seen as a problem distinct from the improvement of sanitary conditions, so the question of overcrowding was thrown into relief, and beyond that, the importance of social custom to the transmission of disease within particular social groups.

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1. Chronic bronchitis, the "British disease" of today, is an exception, being caused by atmospheric irritants and temperature change.

II - Domestic Management.

The problem of domestic management, of the hygiene, nutrition, and general care of the family, was closely related to that of housing, but was also bound up more specifically with educational questions. The evaluation of the importance of the household ecology of the family in disease control came relatively late. Although the thorny question of the pig and the stye was an early subject of controversy within the sanitary movement, the concern of the preventive authorities with this domestic dimension was until the 1890s largely restricted to attempts to put right the purely physical and environmental shortcomings of the home. The sanctity of domestic privacy was no doubt an important factor here, but medical officers' conception of their duties was also involved. The injunction of the Metropolis Local Management Act was that the medical officers were to[1]

> ascertain the Existence of Diseases, more especially Epidemics, increasing the Rate of Mortality ... and to point out the most efficacious Mode of checking or preventing the Spread of such Diseases .....

Taken in conjunction with the obvious environmental insanitary conditions and the prevailing miasmatic theory, this concentrated attention on outward and visible - or otherwise noticable - causes of disease. It was only towards the end of the period that improvement in general sanitary conditions and preventive techniques and the extension of the knowledge of disease causation permitted a clearer appreciation of the extent to which factors such as nutrition played a part in disease vulnerability.

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1. 18 and 19 Vict. c. 120, cxxxii.

The problem of educating the public in sanitary practices was an early concern of preventive medicine: the distinction between enforcing sanitary improvement and winning its acceptance by the intended beneficiaries had rapidly become clear. Moreover, as improvements gained ground among the higher social classes, so the insanitary condition of the poor, particularly of the "submerged tenth", became by contrast more shocking. Bristowe's 1884 harangue against impressionable social reformers was supplemented by the observation that, as regarded domestic improvement,[1]

> ... this has been mainly in the houses of the better and middle classes, and in those occupied by small tradespeople, clerks and artisans.

Although the rookeries and the houses of the very poor had benefitted considerably, they had not been improved as much as could be wished, or "so much as was doubtless expected." The living habits of these classes were the chief among the many reasons for this situation.[2] House-to-house visitation revealed over and over again startling contrasts between adjoining houses of the same kind, owned by the same landlords: the one filthy, dilapidated, with all kinds of structural damage ; the other kept clean and neat, with all its sanitary provisions in reasonable condition. The primary element in the sanitary condition of the houses of the poor was the conduct of the poor themselves; the second that of the landlords or agents; the third that of the sanitary authorities.[3]

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1. Med. Off. Ann. Rep., Camberwell, 1883-84, Report on Housing, p. 159.
2. ibid.
3. ibid., p. 160.

Bristowe's views were echoed by Medical Officers elsewhere. Waterworth also emphasised that where the housing of the poor was concerned, neither the vestries not the landlords were entirely to blame, because bad conditions were often caused by the neglect of the tenant. Paintwork was never cleaned, and stairs were often a mass of mud; the educating of the people to keep themselves and their houses clean was the first requirement for houses in a good sanitary condition.[1] A decade earlier, Henry Bateson had welcomed the 1870 Education Act as the first step towards breaking the vicious environmental circle that constantly reproduced in each generation the destructive habits of the very poor. Two factors influenced human development, the temperament transmitted at birth, and the place and surroundings of early life. The members of the "dangerous class"[2] were brutalised by the behaviour of their parents, and sunk beyond hope by homes "neglected, dirty and full of stale, stinking air which stunts the intellect and deteriorates the body."[3] The influence of teachers and the atmosphere of school would, it was hoped, provide a corrective to the influence of the home, but Bateson admitted that it would nevertheless be a long time before this class became honest, orderly, helpful fellow citizens.[4]

The immediate problems of sanitary education, and the focus provided for these by the domestic habits of the very poor, constituted the chief

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1. Med. Off. Ann. Rep., St. George, 1883-84, p. 14.
2. ibid., 1874-75, p. 21.
3. ibid., p. 19-20.
4. ibid., p. 22.

educational concern of preventive medicine for most of the later nineteenth century. It was not until the 1890s, when the environmental fog began to clear somewhat, and when the experience of the London School Board instructors in trying to teach undernourished and lethargic children without a great degree of success was becoming known, that medical officers began to develop a closer interest in the domestic economy of the working classes and the poor. The importance of the more intimate aspects of family management in general health had been recognised for many years, notably for instance in the field of infant health; the novelty lies in the recognition that this was a permissible area of preventive concern. The comprehensive modern sanitary training given to prospective medical officers by the diploma courses in public health [1] was in part responsible for this development of the idea of public health responsibility; the strait-jacket of miasmatism had at length been breached. However, the experiences of the schools and the discoveries of the social investigators, of whom Charles Booth was the most influential, also played a part, and helped to establish a link between the work of the professional paediatricians and that of the preventive and educational authorities.

The nutritional question was perhaps the most important to emerge in the domestic context. Where the deficiency of light and air, and the effect of general sanitary conditions had long been a major concern of the health reformers, by the 1890s it was increasingly apparent that diet had an important part to play in the health of the individual. The theory of urban degeneration was a well established canon of middle-class thought

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1. R.M. Macleod, in F.M. Poynter, ed. Science and Society in the 1860s, 1968, p. 223.

at this period,[1] although the causes of degeneration were still a subject for debate. The West Country doctor, John Hogg, in 1837 attributed the poor constitutions of the Londoners to the life-styles of the various classes - thus although poverty and sanitary conditions brought ill-health to the labouring classes, so also did the aristocracy achieve a "shattered condition" by their "servile obedience to the most capricious of all tyrannical and arbitrary monarchs - Fashion".[2] James Cantlie, in 1885, attributed physical degeneration principally to lack of ozone in the atmosphere,[3] while the Registrar of the Deansgate area of Manchester pointed to overcrowding as a significant cause.[4] Although the importance of correct diet had been recognised by the medical profession in relation to child welfare since at least the mid-century, and although the adulteration of foods and hence their quality had come under preventive surveillance with the Adulteration Act of 1872, the significance of long term dietary habits to general health was largely unremarked.

Outside the preventive organisation there were however, early pointers to the important place of diet in general health. Thomas Barker, at the mid-century, emphasised that regimen and diet in infancy laid the base for health and vigour in later life. Indeed, so closely were the mind and body united, that even the moral character of the individual was affected by errors in the diet or the general management of infancy

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1. G. Jones, Outcast London (1971), pp. 127-129.
2. J. Hogg, London as It Is (1837), pp. 38-39.
3. J. Cantlie, Degeneration Amongst Londoners (1885), pp. 8-18.
4. PP., 1867, xvii, p. 59.

and childhood.[1] Private individuals also made efforts at informing a wider audience. In 1870, Mr. J. Hassel was to be found lecturing on the subject of "Food" at George Street, Camberwell. The reason and purpose of eating were explained as were the types of food necessary for making bones, flesh and fat, and the warmth vital to life, and various foods were recommended for their nutritional value, notably salads, haricot beans, herrings, rats and snails. However, attendance at the lecture was very poor, and the local paper observed with regret that the lower classes were only attracted by sensation, music, and fun, and not by information.[2] The problem was not, however, simply one of information, as came to be observed. As late as 1910, it was remarked that vastly improved food quality control was useless to influence the errors of nutrition constantly reflected in the features of the population at every age.[3] Education in nutritional values was one thing, the breaking down of patterns of buying and of domestic consumption a very different matter.

The reformation of domestic consumption patterns was ultimately dependent upon more intricate economic sanctions. Although the period 1840-1900 saw a rise in real wages of some 30%, this increased purchasing power was directed towards increased consumption of meat and bread.[4] An increase in purchasing power was not itself sufficient to stimulate a significant change in purchasing patterns, in favour of foods of greater

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1. T.H. Barker, Diet of Infancy and Childhood, (1850) p. 3.

2. S.P.L., 30th April, 1870.

3. A. Ravenhill and C.J. Schiff, Household Administration, (1910) pp. 226-7.

4. J. Burnett, in T.C. Barker, ed., Our Changing Fare, (1966) pp. 71-72.

nutritional value but possessed of less bulk or savour. The rising consumption of jam, chocolate and sweets in this period parallels the consumption of fried fish and hot pies as cheap and interesting supplements to the basic bulk diet of bread and as much meat as possible. The dietary conservatism which resulted in nutritionally inadequate eating habits among the 18th century French poor, even where hunger was not in question,[1] probably also influenced the purchasing patterns of the English working classes in the nineteenth century.

The actual pattern of food consumption within the home must also be taken into account. In working class homes generally, it seems that the needs of the man of the house, the breadwinner, were the first to be satisfied, and that in a great many, if not most, cases this was so at the expense of the other members of the family. Edward Smith remarked that the wives and children of the labouring classes were almost universally ill-fed,[2] while Charles Booth could single out a poor neighbourhood by the appearance of the women and children.[3] W.H. Libby ,who ran the Scholars' Free Meal Fund in Southwark at the end of the century, added the further consideration, that the mother in a working family cooked for the father, not for the children, and that therefore not only was the quantity of food for the latter frequently inadequate, but the type of food also wrong.[4] The Southwark area was in fact notable for the inadequate feeding and the low nutritional provision of its child population.

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1. Olwyn Hufton, The Poor in 18th Century France (1976), p. 45.
2. E. Smith, The Dietary Question (1864), p. 24.
3. Booth, op. cit., Vol. II, p. 83.
4. IDCPD, PP., 1904, xxxii, q. 7891.

Booth singled it out, with Hackney and Finsbury, as one of the three areas of London where most children hardly ever knew the comfort of a wholesome and satisfying meal at home.[1] Bread, with a scrape of jam, dripping, poor quality butter or margarine, and stale tea were generally acknowledged to be the staple diet of children in poor areas, and the dietaries for Lambeth working families published by the Fabian Women's Group in 1913 bear witness to the general paucity of food supplies and the dominance of the father's needs in the family.[2]

The preventive authorities were brought to investigate the internal family economy, and to take closer account of the feeding patterns of families largely because of the continuing high infant mortality rates in the last decade of the century. Two factors in particular seemed to be involved in causing these preventable deaths, at least in Southwark and Camberwell; infant diarrhoea, and "wasting" - the last a common process among Lambeth children,[3] and among the children of the labouring classes in South London generally.[4] Both these fatal ailments were largely a product of domestic circumstances. The ravages of diarrhoea, which reached their peak during the summer months, and fell off markedly with the colder weather, were a reflection of low standards of hygiene, although some simple facts of nineteenth-century urban-life, such as the inevitable presence of horses and the resultant enormous summer fly population, were a substantial contributing factor. The chief precaution urged upon those in charge of young children was the practice of constantly boiling all milk: the

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1. Booth, op. cit., Vol. 3, p. 207.

2. M. Pember-Reeves, Round About A Pound A Week (1913), Chapter 9.

3. ibid., p. 119.

4. Med. Off. Ann. Rep., St. George, 1892, p. 21.

researches of the MOH for Liverpool (c. 1890) having revealed that all fatal cases occurred among hand-fed children, while breast-fed infants usually escaped in spite of the fact that they may have been living under more apparently insanitary conditions.[1] By this period more specific "filth" causes were not in question. Francis Stevens observed that the only way in which house construction might play a part in the greater infant mortality of the poorer districts was the fact that a greater number of poorer houses did not have the best means of keeping food in good condition, in hot weather, and if they had, these means might "possibly not be used".[2]

High levels of infant mortality were not confined to the poorer sections of society, although it was these which primarily concerned the preventive authorities. "Wasting" - in fact probably rickets - was by no means uncommon among the children of perfectly healthy, well-to-do parents in excellent sanitary surroundings.[3] Well into the present century criticism of management in this respect is current. As one observer commented:[4]

> the extraordinary ignorance of the elementary needs of a tender infant is not confined to one section of society; it is found in Belgravia as well as in Bermondsey ..... inexcusable ignorance of the right forms in which food should be supplied to young children.

Sixty years earlier, Thomas Barker had remarked with some degree of outrage that[5]

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1. Med. Off. Ann. Rep., Camberwell, 1895-96, p. 197.
2. ibid.
3. W.B. Cheadle, Artificial Feeding and Food Disorders (1889), p. 145.
4. Ravenhill and Schiff, op. cit., p. 247-248.
5. T.H. Barker, op. cit., p. 1.

> No other department in the management of Infants can be named in which such glaring deviations from the dictates of nature are perpetrated as in DIET. It is by no means uncommon to observe the early infant wasting away and dying solely through mismanagement here ....

Although the percentage of infant deaths due to rickets and other deficiency diseases such as scurvy (also common among the middle and upper classes[1]) is impossible to ascertain, there seems little doubt that it was considerable. George Waldo was certain that chronic wasting disease due to malnutrition from improper feeding was the chief cause of the excess of infant deaths, but noted that on the death certificate these deaths were often covered by "some such vague and high-sounding term as 'Marasmus', 'Tabes', or 'Atrophy'".[2] The evidence of Dr. Nestor Tirard, the out-patients physician at the Evelina Hospital for Sick Children, corroborates this. At the Evelina they were constantly seeing cases of "wasting", which seemed often simply due to lack of proper food. From an insufficiency of knowledge of what went on in the homes, the doctors found themselves in no position to refuse death certificates, having no direct evidence to take before the coroner. A certificate of "marasmus", Tirard confessed, was often a cover for wilful neglect.[3]

The widespread inadequate feeding of infants and young children provides the background for the physical degeneration debate. The other factor producing vitamin D deficiency, insufficiency of sunlight, was also present, in the common practice among all social classes of coddling

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1. Cheadle, op. cit., p. 183, 187.
2. Med. Off. Ann. Rep., St. George, 1892, p. 21.
3. S.L.P., 24th September, 1881.

a cherished or delicate infant indoors.[1] The manifestations of the deficiency diseases were, of course, not always as extreme as those described by W.B. Cheadle,[2] and in many cases amounted to no more than the poor physical growth and development remarked on by so many observers. The extent to which nutritional deficiencies affected vulnerability to infectious disease has been a matter of recent historical debate.[3] The nineteenth century medical officers do not seem to have observed any connection between the two factors, except perhaps in an inverse relation. Sir Lauder Brunton the secretary to St. Batholomew's Hospital, although not an MOH, probably reflected general medical views when he remarked of degeneration that it was caused by more people in towns, thus more crowding; less exercise; early marriages; and unsuitable food in infancy and adolescence:[4]

> It is not unlikely that increase of sanitary science, by preserving many children who would otherwise have died, tends to lower the general average of physique while increasing the average length of life.

The question of infectious disease prevention stood apart from that of the general physique of the people which was more directly related to poverty and domestic traditions. The delicate balance between legitimate interference in the public interest, and trespass on the privacy of the individual was in play here.

The emergence of infant mortality as an undiminished, significant proportion of total mortality took preventive concern across the bridge into the reform of domestic management. A great many infant deaths were

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1. Med. Off. First Quarterly Report, St. George, 1858, p. 2.
2. W.B. Cheadle, op. cit., ch. 6.
3. See. A.B. Appleby, Ec. Hist. Rev., 1977, no. 3. pp., 508-512.
4. RCPD.,1904 xxxii, q. 2426.

preventable, and in removing the causes of these deaths, it might be hoped also to achieve a healthier adult population. Efforts at improving domestic conditions through improved habits of child care can be seen to have begun in the late 1890s. Millson published a set of "General Directions" on feeding and bringing up infants in 1898.[1] The South London Press contributed with "Hints for Young Mothers ",[2] while the new Camberwell borough council rather later issued a pamphlet on infant feeding.[3] The chief emphases of these articles were on the over-riding importance of cleanliness and correct feeding. Millson, for instance, stressed the need for fresh air and washing, adding that[4]

> Scrupulous cleanliness in all matters of child management is absolutely necessary if good health is to be maintained.

If the child was being hand-fed, milk should be boiled before used, should not be used a second time, and the feeding bottle should be sterilised after use. At the same time, attempts were being made in the schools to instill some idea of elementary human biology into the younger generation, but these were not always as well thought out or effective as the importance of the subject was held to warrant.[5] A more systematic and professional approach to the problem was needed than could probably be supplied by the ordinary school-teacher, if the suggestions put forward by Charles Booth were to be implemented;[6]

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1. Med. Off. Ann. Rep., Newington, 1898, pp. 173-176.
2. S.L.P., 13th February, 1897; 4th September, 1897.
3. Dr. Helen Serjeant, Hints for Infant Feeding, (1906).
4. Med. Off. Ann. Rep., Newington, 1898, p. 173.
5. IDCPD, PP., 1904, xxxii, qq 1757-1760; 1810-1816.
6. Booth, op. cit., vol. 3, p. 305.

> ... widespread instruction in practical domestic economy, the laws of health, and acquaintance with good literature.

Domestic economy was to be understood essentially as the management of a home, and to that end should include[1]

> ... cottage cookery, house cleaning, methods of ventilation, washing and ironing, sick nursing and etc., adapted to the requirements of household living under primitive conditions.

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1. Booth, op. cit., vol. 3, p. 305.

C O N C L U S I O N

The extension of preventive medical concern to the detail of family domestic habits in the course of the 1890s marks the final maturing of preventive consciousness in the nineteenth century. From the early concentration on the externals of a healthy life, through the realisation of channels of infection, to the conclusion that the habits of ordinary people were crucial to their welfare, the MOHs in their first fifty years of existence made a substantial contribution to the evolution of the preventive idea. In local terms their contribution was also considerable. Evidence from the three parishes examined, and from other general and specific sources, indicates the high degree of the MOHs' involvement in the improvement of local conditions and public welfare. Among the general environmental achievements of the civil vestries, the physical evidence of the sanitary departments' labours is largely invisible. Nor can the examination of statistics give a satisfactory picture of their successes. Only by some appreciation of general sanitary conditions in the mid 1850s and by an understanding of the range of problems involved in systematic health improvements is it possible to begin to appreciate the nature of the MOHs'contribution. In local terms, it was the MOHs who set in train the progression from the sanitary environment featured so graphically in Chadwick's Sanitary Report, to that which we enjoy today. Unlike their employers, the work of the MOHs received little but praise from contemporary observers, but the abuse which was heaped upon the vestries by the protagonists of centralised administration has obscured the MOHs' patient labours. The London MOHs, and after 1871 their provincial colleagues, were among the

earliest specialist administrators employed in England. They were essentially the first professional social reformers, and their perception of the nature of the social problems thrown up by urban industrial society was to be an important element in the formulation of more wide-ranging social legislation in the early twentieth century.[1]

Much of the distinctive character of the early medical officers of health probably derived from their unique position within the administrative system as men trained in an exacting and responsible profession, working for ends in which they profoundly believed within an administrative framework whose aims and assumptions often differed substantially from their own. Henry Jephson believed that the description of their work given by the MOH for Hackney in 1856, "a war of the community against the individual for the public good", had been proved true for the whole period of vestry administration.[2] Yet the success of the MOHs lay to a large extent in their distance from the "community" as represented by the administrative bureaucracies. Most retained other employment: private practice, hospital appointments, research or charitable work, which helped them to view parish affairs with detachment, and to maintain an identity other than that of vestry employee.[3] Their common sense of health as a "public good"[4] was tempered, paradoxically, by an awareness of human individuality and of individual needs which came, essentially, from their medical training, in which emphasis lay on care of the individual patient. It was this human sympathy, which most medical officers combined with an empirical approach to their work, which gave flexibility, and distinguished the health organisation so sharply from the Poor Law, and which made possible the task of education and law enforcement which the MOHs saw as their duty to perform.

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1. B. Gilbert, The Evolution of National Health Insurance in Great Britain (1966), p. 146-7.
2. Jephson, The Sanitary Evolution of London (1907), p. 96, 339.
3. see above, p. 14, 100; Table 3.
4. Camberwell Vestry Mins., 30th January, 1856: Med. Off. Half Yearly Report, St. George, July, 1856, p. 2-3.

The health organisation established by the Metropolis Local Management Act was typical, as the Poor Law Administration was not, of the new "specialist" administrations of the later nineteenth century. Where the Poor Law medical officers were subservient to their administrators, and carried little weight in the organisation as a whole, the medical officers of health were only exceptionally treated as other than professional consultants. The MOHs were, indeed, among the first non-administratively trained, professional staff to be employed in such a capacity in the public service. The seriousness of London's health problem was a major factor in determining their existence: no attempt was made to establish any kind of national preventive system until 1875, nor to achieve any coordination of preventive effort against the communicable diseases in London itself, even after 1875. In spite of the importance of local agents in disease matters, the local autonomy of the London health departments constituted a serious qualification of the effectiveness of health policy in the capital as a whole. Medical officers deplored the absence of a central sanitary administration. Edward Seaton, for instance, lamented that:[1]

> ... the masterly system of dealing with infectious disease in some of the large provincial towns is in striking contrast to the comparatively aimless method of procedure in London.

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1. Transactions of the Sanitary Institute, 1886-87, p. 129.

Until the end of the vestry period there was in London nothing to compare with the existence in every other large city of a single authority deriving power from consolidated laws and dealing with every branch of public health and sanitary administration.[1]

The formation of the LCC in 1889 to some extent supplied this deficiency, but the council was by no means a policy making or final directing body on sanitary matters: the vestry authorities retained their local autonomy and responsibility for local administration. The institution of the LCC marks a stage in the gradual triumph of central government over local individualism in the administrative framework of the capital. The absence of a central sanitary authority for London in the second half of the century is one indication of the continuing high level of resistance in English society to the extension of administrative law and its machinery. The sheer size of London, and the historical separatism of its villages, were both factors which militated againstthe establishment of a central sanitary authority with complete control over local policy and administration. Although a central health authority for London would have been invaluable in coordinating preventive effort and diminishing the danger of disease in the city, such an authority was not imminently possible in terms of political reality.

The continuing resistance to the growth of government, administration and bureaucracy was compounded by the problem of ignorance among all classes of society. The confusion of ideas on disease causation, which lingered until

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1. Dudfield, Two Sanitary Addresses (1889), p. 3.

the end of the period, together with social pressures, helped to obscure much information on disease which would have been of use to the health officers. In 1871, for instance, the MOHs were without exception in entire ignorance of the cases attended by private practitioners: they had no knowledge whatever of the incidence of the disease among the middle and upper classes.[1] In July 1875, when scarlet fever had been unusually prevalent in London, the Lancet noted with relief that the season was nearly at an end,[2]

> ... and families will be moving into the country, so that the worst may be over in London.

The mechanism of privacy which protected households from the intrusion of the MOHs, and with which government was for long reluctant to interfere, had a parallel in the public sphere: where private enterprise was concerned, sanitary regulation could not be too specific in case growth and expansion were discouraged. Building speculators, those involved in "offensive" trades (bone-boiling, glue-making) and employers in unhygienic occupations (fur-pulling, rag-picking, sack and matchbox making), must be permitted a certain amount of sanitary licence, or their activity might be extinguished.[3] Even where model sanitary conditions prevailed, trades such as bone-boiling remained unavoidably offensive.[4] The expansion of local industry during the nineteenth century thus created a host of new interests, whose successful operation depended on the looseness of existing sanitary legislation.

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1. Lancet, 25th February, 1871, p. 270.
2. ibid., 24th July, 1875, p. 141.
3. above, p. 222-224.
4. PP., 1867, xxxvii, p. 209-210.

Against this background of a national preventive network patchy until 1875; of the absence of preventive unity in London; of resistance and ignorance among the population at large; there was a fall in national mortality rates, especially among certain of the communicable diseases, notably tuberculosis, dating from the mid 1860s. Conventional wisdom tends towards a nutritional explanation for this phenomenon: nutritional improvement and rising living standards rather than public health measures, and the latter rather than improvements in medicine, are seen to have produced a decline in death rates and in the mortality from communicable diseases.[1] Since, however, the decline in crude death rates, both nationally and for London,[2] begins in the 1860s at about the period when national and local health measures were becoming established in one form or another, some attempt should be made to assess any contribution these measures may have made towards this reduction.

The work of the medical officers of health (and of the nineteenth century health organisation generally) fell into two categories, both of which were associated with contemporary ideas on disease causation. Firstly there was sanitary improvement: the provision of drains, the monitoring of water supplies, the regulation of nuisances and housing conditions. Secondly, there was disease control; measures taken specifically against communicable diseases such as the encouragement and enforcement of vaccination; isolation, disinfection and removal to hospital; the tracing and eliminating of the sources of epidemic outbreaks, where these could be shown, and of foci of infection. These measures were of differing

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1. Mckeown and Record, "The Decline of Mortality", Population Studies, 1962 p. 120; McKeown, The Modern Rise of Population, (1976), Chapter 7, p.153-5

2. McKeown and Record, op. cit., p. 100; Table 2.

importance in relation to different diseases, although it is impossible to quantify the MOHs' contribution to falling death rates and to the decline in the importance of the communicable diseases as a factor in mortality, since all mortality statistics are subject to such qualifications as render them unsuitable for the purpose of assessment.

In respect of the environmental affections, the contribution of the MOHs may be thought easy to assess. Certainly, the sanitary work of the vestry departments seems to have had a direct and beneficial effect on both the incidence of and mortality from these diseases.[1] The case of tuberculosis is more complex. It is unlikely that the work of the medical officers made any direct contribution towards the reduction in mortality, since this appears to have begun before specific improvement measures began to take effect on the urban environment, and active preventive propaganda against the disease did not begin before 1898. It is, however, impossible to assess the influence which the health inspectors personally, and the health department-issued pamphlets concerned with the prevention of other communicable diseases, may have had on the social and household habits of families who, in the context of rising real standards of living, and possibly therefore, of improving class standing, were sensitive to outside influences on their social behaviour.[2]

The contribution of the preventive medical services to the control of the major nineteenth-century epidemic diseases, smallpox and cholera, is much clearer. The disappearance of cholera in Britain after 1866 was very largely due to the vigilance of the central medical department, and of the port and riparian authorities. Although the disease was active in Europe in 1873, 1884-6 and 1892-3, the few cases which were imported into England

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1. Lancet, 5th October, 1861, p. 333; McKeown and Record, op.cit., p. 116.

2. J.E. Squire, "The Prevention of Phthisis", Trans. Epid. Soc., 1888-89, p. 48.

were rapidly detected, and effective measures taken to prevent the spread of the disease. The local medical officers were extremely doubtful of their ability to control the disease, should it at any one of these times have succeeded in gaining a foothold in the country. The medical officers were equally doubtful, by the last decade of the century, about their ability to control any major outbreak of smallpox, in view of the large proportion of the population which was known to be inadequately vaccinated. This doubt was amply vindicated by the major outbreak of variola major in London in 1901-2: nevertheless, the diminished incidence of smallpox from the 1880s is directly associated with the work of the medical officers. The provision of adequate hospital isolation facilities was an important element in achieving this. The identification of cases, and the policy of isolation, disinfection, and the tracing and vaccination of contacts was a major factor in the virtual elimination of smallpox from nineteenth century London. The 1901 epidemic illustrates how delicate was the balance of the preventive achievement; a fact of which the medical officers were very much aware.[1]

The childhood diseases remained a constant source of anxiety to the MOHs throughout the later nineteenth century. Scarlet fever, however, began to decline both nationally and locally in the 1870s. This has widely been accepted as being due to a diminution of the virulence of the disease; a minor contribution may also have been made by the recognition, from 1870, that the disease could be transmitted in milk supplies, since this meant that numerous outbreaks were traced to source and contained with greater effectiveness.[2] The mortality from diphtheria increased both

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1. see above, p. 173-174, 181.

2. L. Parkes, "Milk and Disease", Journal San. Inst., 1886-87, p. 94;
E. Hart, The Influence of Milk in Spreading Zymotic Disease (1897),p. 3.

nationally and in London in the last decade of the century, in spite of all the efforts of the MOHs. Measles mortality also remained consistently high up to 1915, after which it fell rapidly and continually. The activities of the MOHs had little apparent effect on the behaviour of measles in the 1890s, a fact which they recognised with anxiety. Mortality from whooping cough began to decline from about 1870, and it seems unlikely that the work of the MOHs had much direct relevance to this development.

The examination of the MOH's contribution towards the diminution of individual communicable diseases reveals the partial nature of their efficiency. Yet, in the context of ignorance of the specific causes of most diseases shortage of manpower, enormous responsibilities and limited funds, the success of the environmental holding operation which most of the London MOHs were engaged in against rapidly increasing building and population, indicates that their contribution to improving health and living conditions was not negligible. Moreover, the contribution of the MOHs to nineteenth century society cannot be measured simply in terms of mortality and disease control. Major contributions can be determined in other areas, in education, in the reform of medicine and public health, and in the development of medicine and preventive techniques. The educational role which the MOHs and their inspectors performed as an integral part of their sanitary duties was as important as the more tangible fruit of their labours, even though their contribution in this area is most difficult to assess. The propaganda function of the local health departments was considerable; advisory pamphlets and handbills on all aspects of domestic disease control and patient care issued forth from them in a steady stream, and were distributed from house to house.[1] Medical officers gave courses

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1. Med. Off. Ann. Rep. Camberwell, 1869-70, p. 49.

of lectures to parishioners on sanitary subjects.[1] Personal contact between the health inspectors and the public was recognised by the MOHs themselves as being of value in health education.[2]

The importance of education in all sanitary matters was unreservedly acknowledged by the Royal Commission on the Housing of Working Classes:[3]

> ... to counteract the results of habits which, uninterrupted by outside influences, have become second nature.

Outside influences were already at work, however. The efforts of the health departments was one factor, others were the activities of the philanthropists and the School Board. A delicate balance in matters of health and the means of health education in the short term resulted in some reservations among preventive officers as to the immediate benefits of state education. The former MOH for South Shields and Newcastle-on-Tyne concluded his epidemiological survey of measles in Jarrow and South Shields, the former a purely working class town, the latter with a higher proportion of people "of better social position", and fewer children in public elementary schools, with the observation:[4]

> ... that in the case of South Shields the increase in the intelligence of the people, and the increase in their appreciation of the dangers of infectious disease have sufficed to neutralise the risks in the relatively small increase in the school attendance; while the huge rise in the school attendance rate in Jarrow has far outstripped the increase in the average intelligence of the people in matters pertaining to disease.

The educational process only worked slowly, as the Lancet acknowledged when it remarked that, on a sanguine view, it would take from ten to twenty years more of the School Board's work before the mass of people

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1. Camberwell Vestry Mins., 23rd January, 1881; 14th December, 1898.
2. above, p.110; RCHWC, q. 9582.
3. RCHWC, Report, p. 20.
4. A.C. Munro, "Measles: an Epidemiological Study", Trans. Epid. Soc., 1890-91 p. 97.

were intelligent enough to take the trouble to use vaccination and the public provision for its performance as they needed to be used if the country was to be protected from major epidemics of smallpox.[1]

The medical officers did not always work amicably with their fellow labourers in the field of social reform. Conflict between MOHs and philanthropists reveals the MOHs as occasional inhibitors of reform in the strict sense. Bristowe admitted this indirectly in 1884, when defending the health organisation for not enforcing improvements which could not be justified in the existing sense of the law.[2] Particular instances extend this inference: many officers were reluctant to instigate the destruction of bad housing in view of the social repercussions; Francis Stevens would not take action over the coster donkeys which were kept in back gardens and brought through houses to the street. MOHs seem to have had few scruples in resisting reform in cases where they clearly saw that the "remedy" would in fact aggravate the evil intended to be removed. The discrimination which the MOHs displayed in their use of improvement legislation, and in their application of "improving" measures, proves them to have been professional reformers in a sense which the philanthropists and educationalists were not. Their policies were essentially empirical, shaped by observation and experience, rather than by theory or social ideal. Administrative responsibilities developed in them a systematic approach to the problems of public health which was absent from the philanthropic contribution, where individual vision played the major part,[3] and from the elementary school system which was still fulfilling only very basic social responsibilities.[4]

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1. Lancet, 3rd August, 1872, p. 158.
2. see above, p.49.
3. B. Harrison, "Victorian Philanthropy" Victorian Studies, June, 1966, pp. 366-373.
4. G. Sutherland, Elementary Education in the Nineteenth Century (1971), p. 45.

One of the chief reasons for the success of the medical officers in creating a professional yet individual public health organisation lay in the continuing interest of most in a variety of concerns associated with but diverse from their local responsibilities. A strong characteristic of most was that they continued to be primarily medical men, and in no way became mere administrators. Participation in the medical and public health work of the central medical department, continued employment in the hospitals, more rarely private practice, or, if socially interested, involvement in the Poor Law administration, all these elements feature in the careers of medical officers. Papers and memoirs remain as a testimony to the standing of such men as Burdon Sanderson and Bristowe among their contemporaries, and to their contribution to the better understanding of medicine and public health in areas not generally connected with their parish work. Bristowe's entry in the Dictionary of National Biography, for example, sings his praises as a teacher,[1] while at St. Thomas' Hospital he was remembered as possibly the greatest physician St. Thomas' had ever had.[2] Bristowe's major scientific work was Essays on the Diseases of the Nervous System (1888) - a subject far removed from his preventive responsibilities - while his investigations for the central medical board included inquiries into the health of employees in phosphorous industry;[3] into the influence of the rag trade in spreading disease;[4] into the hospitals of the United Kingdom;[5] and the outbreak of fever in a number of provincial towns.[6]

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1. D.N.B., vol. XXII, p. 294.
2. F.G. Parsons, The History of St. Thomas' Hospital (1963), vol. 3, p. 215.
3. PP., 1863, xxv, p. 162-205.
4. PP., 1866, xxxiii, p. 618-603.
5. PP., 1864, xxviii, p. 463-743.
6. PP., 1862, xxii, pp. 37-38 (Calstock); PP., 1864, xxviii, p. 783-787 (Whitehaven); PP., 1865, xxvi, pp. 518-520 (Grantham), and p. 520-521 (Debenham).

Medical training gave the MOHs a special position among the nineteenth century administrative inspectorate. Although the problems encountered in health improvement had parallels in other areas of contemporary social concern, notably in education, and in the alleviation of poverty, the medical officers were enabled by their training to achieve a greater coherence in their pursuit of improved conditions. The schools' inspectors were early stopped from developing independent approaches or involvement in policy,[1] in contrast to the medical officers, whose independence of action as individuals was never generally questioned. The problem of poverty was not tackled directly by the legislature until the twentieth century, although most nineteenth century social legislation was indirectly concerned to deal with it. Schools' inspectors and medical officers became in the course of their own work experts on aspects of poverty, and their work was complemented in many respects by that of the more notable philanthropists, particularly those, like Cannon Barnett, who were concerned with educating the working people. In a wider social context, the importance of the MOHs' experience was only to become clear, and valuable, in the early years of the twentieth century. It was their achievement in the latter part of the nineteenth century, both in health education and in environmental improvement, which paved the way for greater involvement of government in social concerns in the years after 1900.[2]

Although the recurring theme of public health reformers throughout the later nineteenth century was "much remains to be done",[3] it cannot

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1. G. Sutherland, op. cit., pp. 34-35.
2. B. Gilbert, The Evolution of National Health Insurance (1966), p. 146-147.
3. PP., 1876, xviii, p. 6.

be doubted that the achievement of the medical officers and their staff in environmental improvement were considerable, or that the performance of the civil vestries in this area was far greater than their critics, many of whom were influenced by strong pro-centralist convictions, allowed.[1] Even those most critical of the vestries' performance however, acknowledged the importance of the MOHs' work.[2] Historians have, on the whole, paid little attention to the MOHs and their achievement: the factory inspectors, for example, have had a bigger press. Anthony Wohl, who has considered their work in the light of the housing problem, has paid tribute to the MOHs' achievement in the field of disease control. Wohl is of the opinion that "almost as much as" the provision of drains and pure water, or improvement in diet and personal hygiene, their activities "dramatically" lowered mortality from diseases such as scarlet fever, whooping cough, measles, typhus, smallpox and cholera by the end of the century.[3] Wohl's interest lies in housing: the interest of this thesis is in disease itself. Wohl's statement must be qualified by its findings, particularly since he implies that it was activity in "cleansing, whitewashing and patching up" which constituted the medical officers' main contribution. Cleansing, whitewashing and patching up would not in themselves have achieved very much, but allied to a policy of isolating disease cases, following up contacts, and where possible tracing and eliminating the source of infection, they became far more effective.

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1. Dudfield, op. cit., p. 8.

2. Jephson, op. cit., p. 399.

3. A.S. Wohl, The Eternal Slum (1977), p. 116.

Further, diet apart, the conclusion of this study must be that the MOHs played a very considerable part in securing drains and improved water supplies, and that their influence was possibly crucial in raising general standards of hygiene. In so far as generalisations can be made from so limited a study as this, it may be concluded that the work of the medical officers was of vital importance in preparing a solid foundation for the success of social legislation and the rapid improvement of general standards of health in the twentieth century. If the medical officers achieved a position unique among the "specialist" administrators of the Victorian period, it was because their contribution to government was largely "scientific". Their achievement in certain areas can be measured more accurately than that of other inspectors: within the limits prescribed by the conditions of nineteenth century knowledge, they achieved an understanding of disease and its social context. Their work, both practical and academic, produced, and was strengthened by, remarkable advances in the science of medicine.

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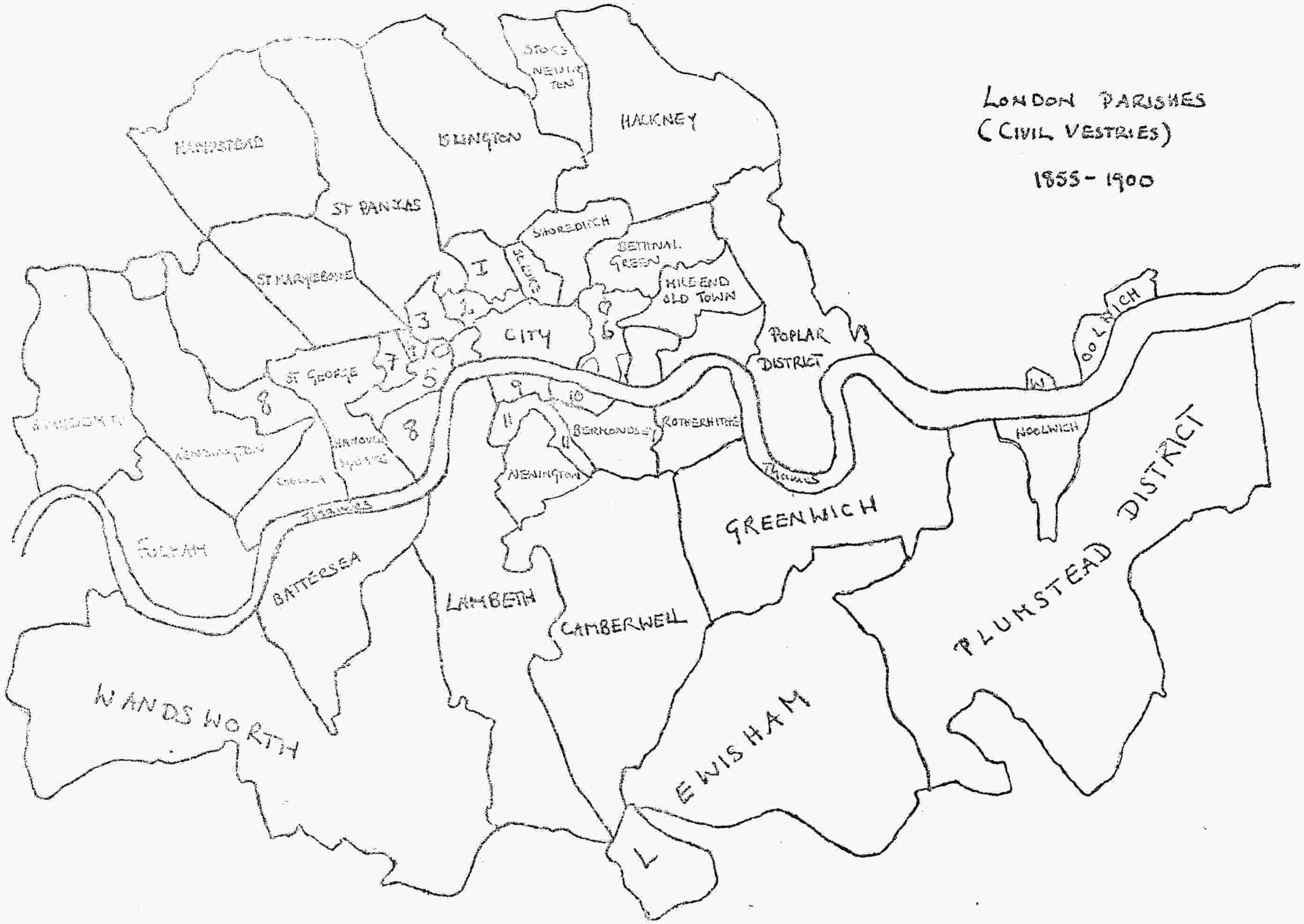
PREFACE TO MAPS, TABLES AND FIGURES

All statistics etc. used in this section come from the annual reports of the relevant medical officers of health, unless stated otherwise. The sources for Figures 17 and 18 are the annual abstract accounts of the respective parishes.

Disease graphs for St. George-the-Martyr have not been provided for reasons of economy of space. Unlike the detailed mortality figures for Camberwell and Newington, which are given by calendar years, the St. George's figures are given by financial year (i.e., from Lady-day to Lady-day) until 1891, and are therefore of doubtful value for direct comparison.

The published statistics of the Registrar-General have not been used in the construction of these tables, since they apply to the Registration Districts, which have no necessary direct geographical correspondence with the parish administrative districts: the figures for St. George-the-Martyr and Newington, for instance, are collectively represented in the figures for St. Saviour's Registration District.

LONDON PARISHES
(CIVIL VESTRIES)
1855 - 1900



① Clerkenwell
2. Holborn
3. St Giles
4. Strand
5. St. Martin-in-The Fields
6. Whitechapel
7. St James' Westminster
8. Westminster
9. St. Saviour's Southwark
10. St. Olave's Southwark
11. St. George-The-Martyr.

DISEASE MAP 1893

OF THE PARISH OF

St GEORGE-THE-MARTYR

SOUTHWARK.

1892

SCALE

½ MILE

0 500 1000 2000 3640 FEET

EXPLANATION

No. 1 Ward—Mileage 7 m. 6 fur. 27 pol. Coloured Green.
No. 2 Ward— „ 4 m. 5 fur. 23 pol. „ Red.
No. 3 Ward— „ 7 m. 1 fur. 4 pol. „ Purple.
Parish „ 19 m. 3 fur. 14 pol.

Acreage 2844 Acres.
Population (estimated) „ 59,924

Scarlet Fever	Coloured Red	Smallpox	Coloured Black
Diphtheria	„ Purple	Enteric Fever	„ Green

A. MILLAR, Vestry Clerk.

MAP 2

MAP 3

OF THE

PARISH OF ST. MARY, NEWINGTON,

1899.



MAP
OF THE PARISH OF
CAMBERWELL
1808.

CONTAINING THE PARLIAMENTARY DIVISIONS OF
NORTH CAMBERWELL, PECKHAM, AND DULWICH,
DIVIDED BY THICK RED LINES AND NAMED (EXCLUDING PENCE)

SCALE
1 Inch = 1 Mile

P.D. 1.
P.D. 2.
P.D. 3.
P.D. 4. North Div.
P.D. 5. South Div.
P.D. 6.
P.D. 7.
P.D. 8.

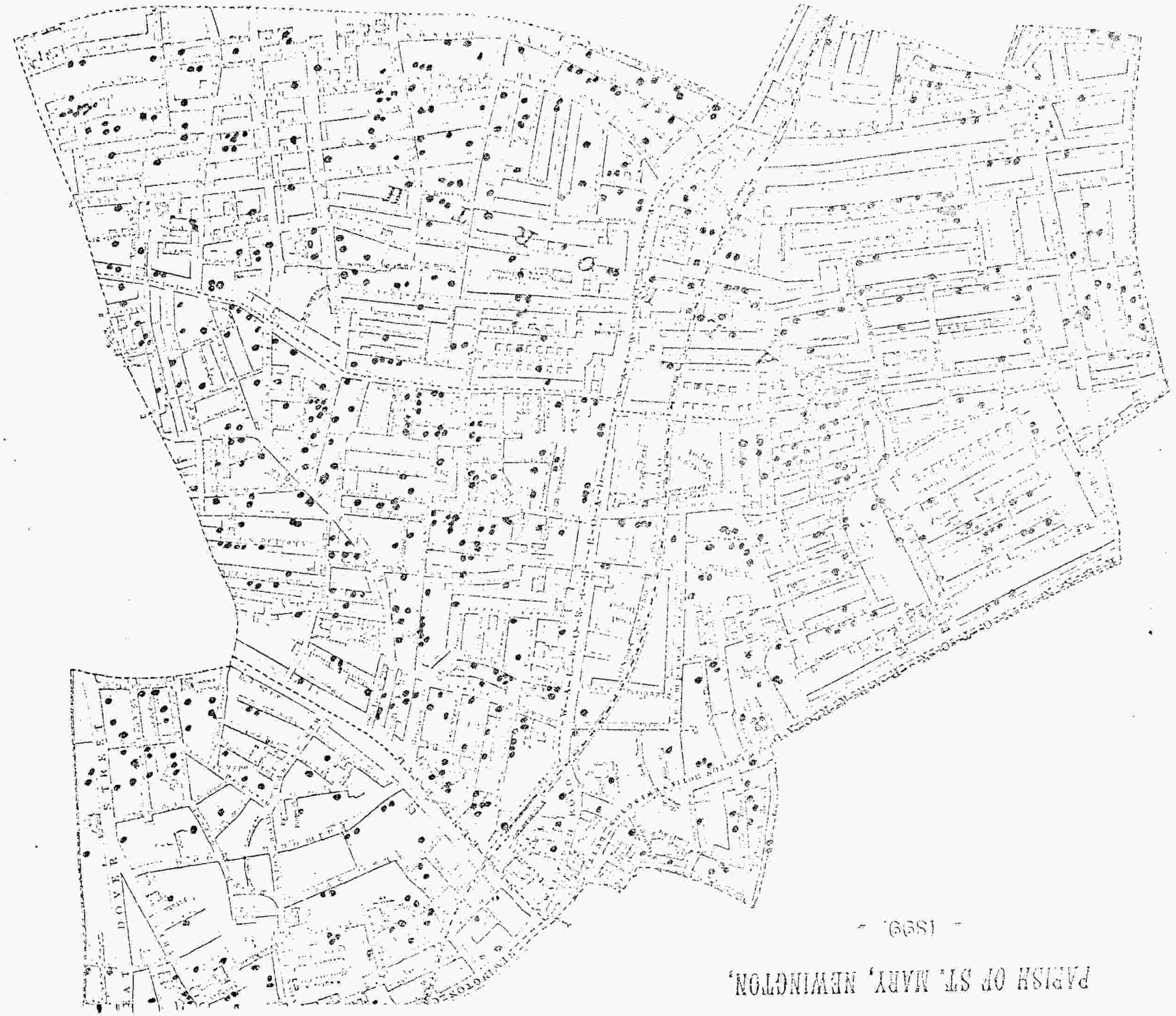
1484



POVERTY in NEWINGTON,
after CHARLES BOOTH,
1889

- LOWEST CLASS. VICIOUS SEMI-CRIMINAL
- VERY POOR. CASUAL
- POOR. 18-21s a week for moderate family
- MIXED. Comfortable and poor.
- FAIRLY COMFORTABLE. Good ordinary earnings
- WELL-TO-DO MIDDLE CLASS

MAP 6



PARISH OF ST. MARY, NEWINGTON,

- 1899. -

"FEVER" CASES in

NEWINGTON

1890 - 1899

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



"FEVER" CASES in NEWINGTON 1890

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCALE

"FEVER" CASES in NEWINGTON 1891

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCALE

"FEVER" CASES in NEWINGTON 1892

Map 9

PARISH OF ST. MARY, NEWINGTON,

- 1899. -

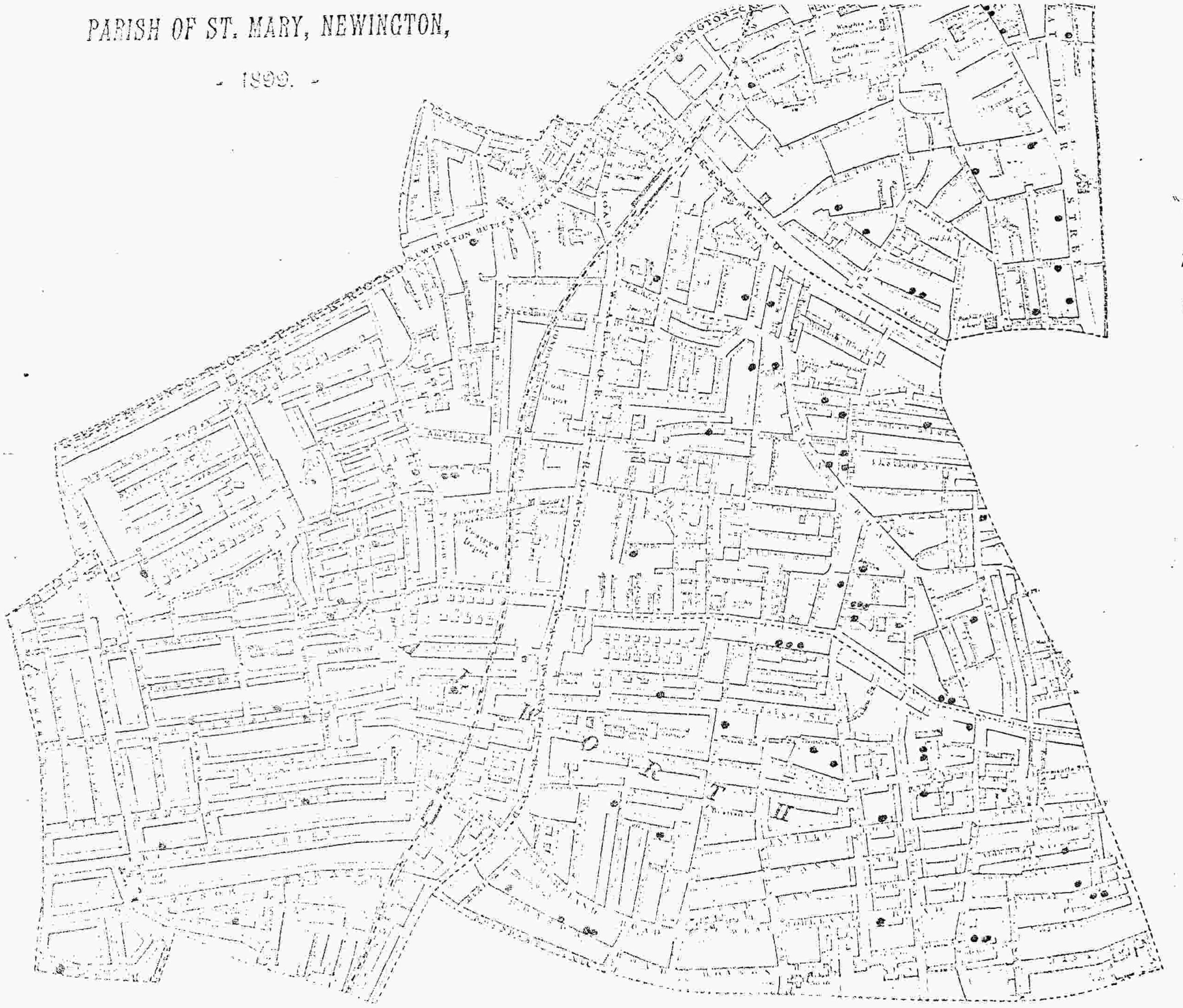


"Fever" cases in Newington 1893

Map 10

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



"FEVER" CASES in NEWINGTON 1894

MAP 11

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



"FEVER" CASES in NEWINGTON 1895

MAP 12

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCALE

"FEVER" CASES in NEWINGTON 1896

MAP 13

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



"FEVER" CASES in

NEWINGTON

1898

MAP 14

PARISH OF ST. MARY, NEWINGTON,

= 1899. =



SCALE

"FEVER" CASES IN NEWINGTON 1899

MAP 15



SOCIAL DISTRIBUTION of

DEATHS from TUBERCULOSIS, BRONCHITIS

PNEUMONIA and PLEURISY in

NEWINGTON

1896 - 1899

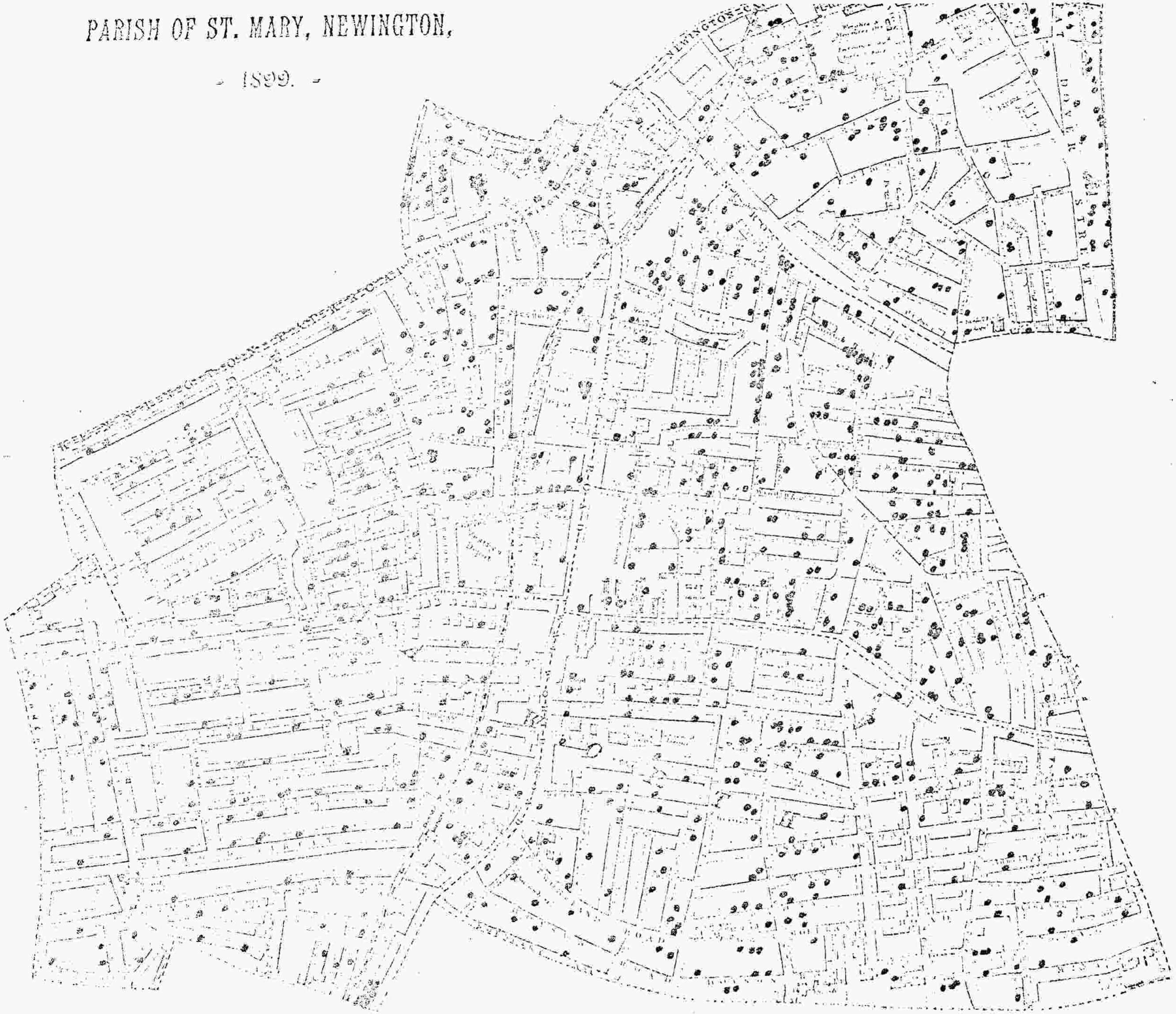
• Death from bronchitis, pneumonia or pleurisy

• Death from tuberculosis

MAP 16

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



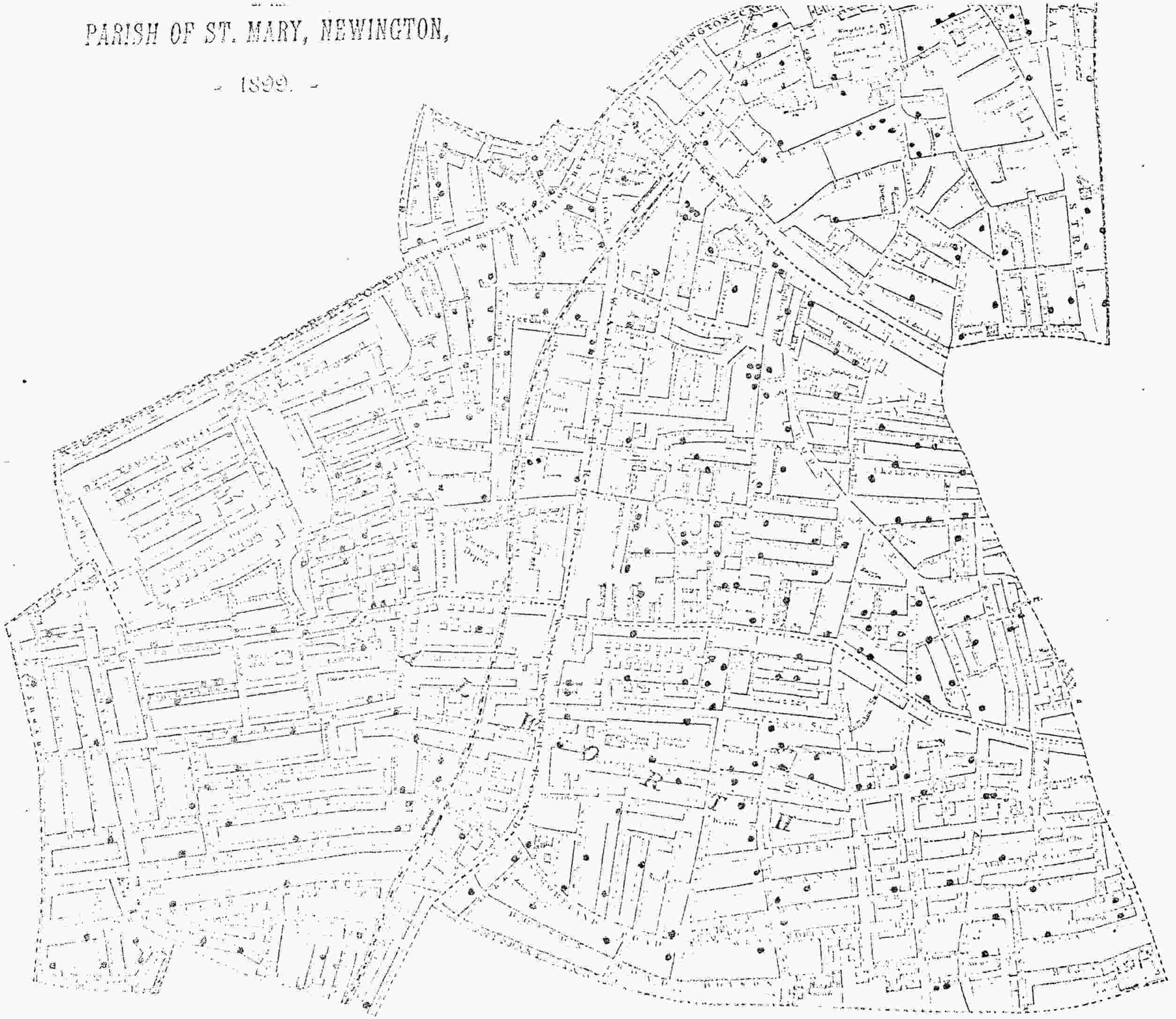
SCALE

TUBERCULOSIS DEATHS
in NEWINGTON
1896 - 1899

MAP 4

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCALE

TUBERCULOSIS DEATHS
IN NEWINGTON
1896

MAP 18

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



TUBERCULOSIS DEATHS

in NEWINGTON

1898

MAP 19

MAP 29



PARISH OF ST. MARY, NEWINGTON,

- 1899 -

TUBERCULOSIS DEATHS

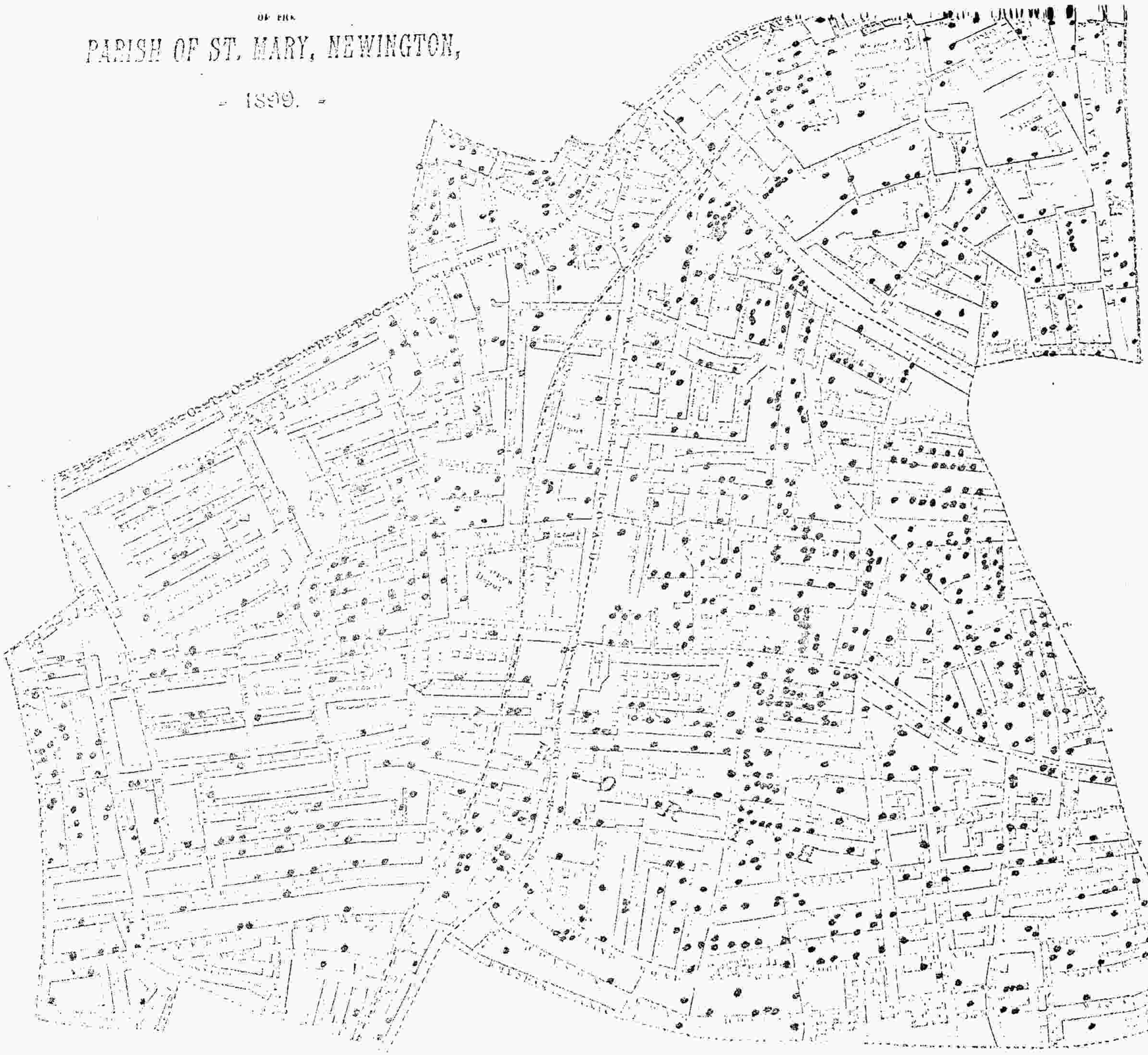
IN NEWINGTON

1899

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



DEATHS from BRONCHITIS, PNEUMONIA and PLEURISY in NEWINGTON 1896 - 1899

MAP 21

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



BRONCHITIS etc. DEATHS
in NEWINGTON
1896

MAP 28

MAP 23



PARISH OF ST. MARY, NEWINGTON.

= 1899. =

Boroughs &c. Depts.

in Newington

1898

Map 24



Broadcasting of Deaths
in Newington
1899

Parish of St. Mary, Newington,
- 1899. -



SOCIAL DISTRIBUTION of
SMALLPOX CASES in
NEWINGTON
1893-1895

H+D 25

MAP 26


PARISH OF ST. MARK, NEWINGTON,
1899.
SHAWLFOX CASES in
NEWINGTON
1893

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SMALLPOX CASES in
NEWINGTON
1894

Map 27

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1895. -



SMALLPOX CASES

IN NEWINGTON

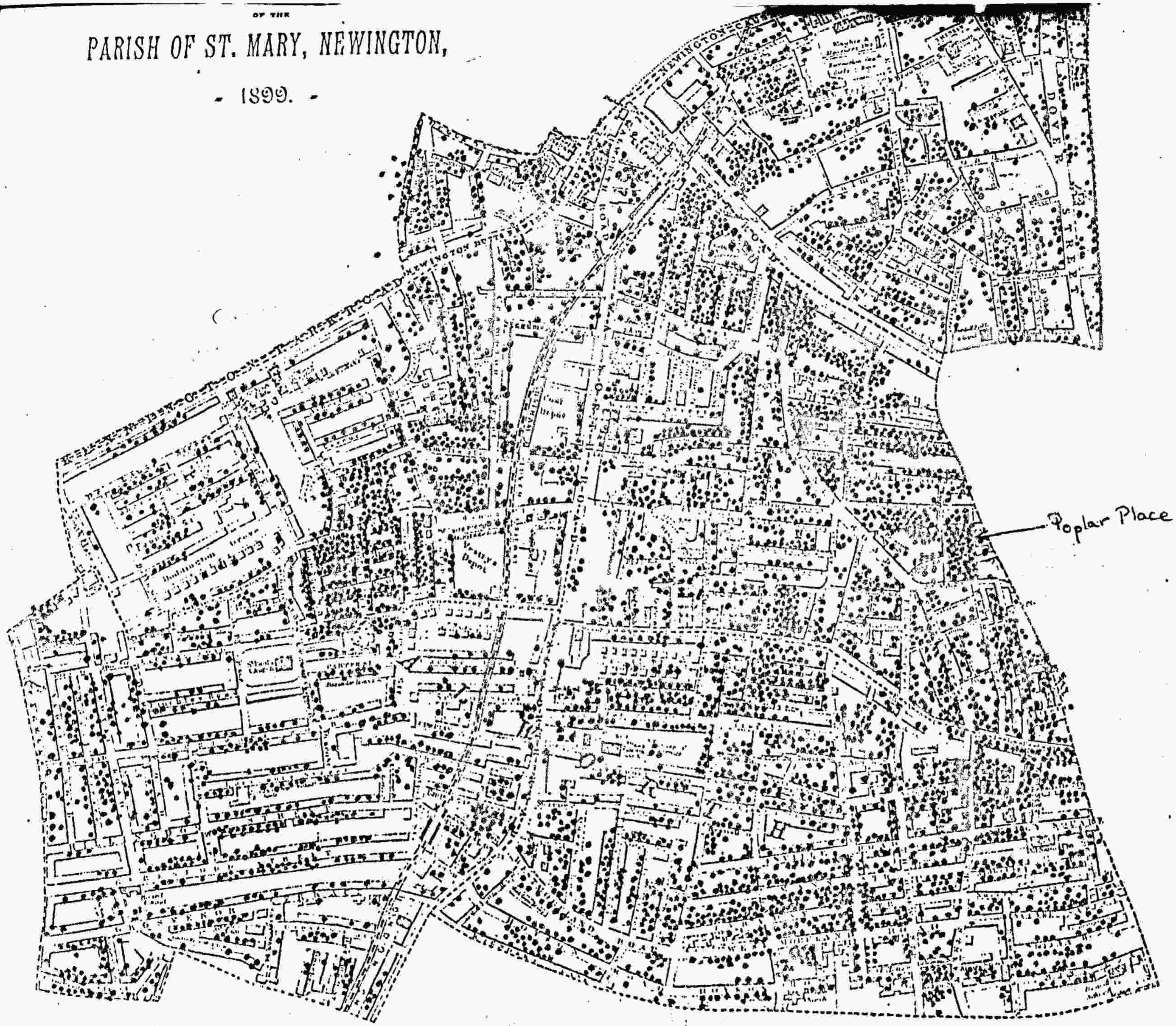
1895

MAP 28

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCARLET FEVER CASES
in NEWINGTON
1890 - 1899

MAP 29

OF THE

PARISH OF ST. MARY, NEWINGTON,

1899.



SCALE

SCARLET FEVER CASES
in NEWINGTON
1890

MAP 30

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCALE

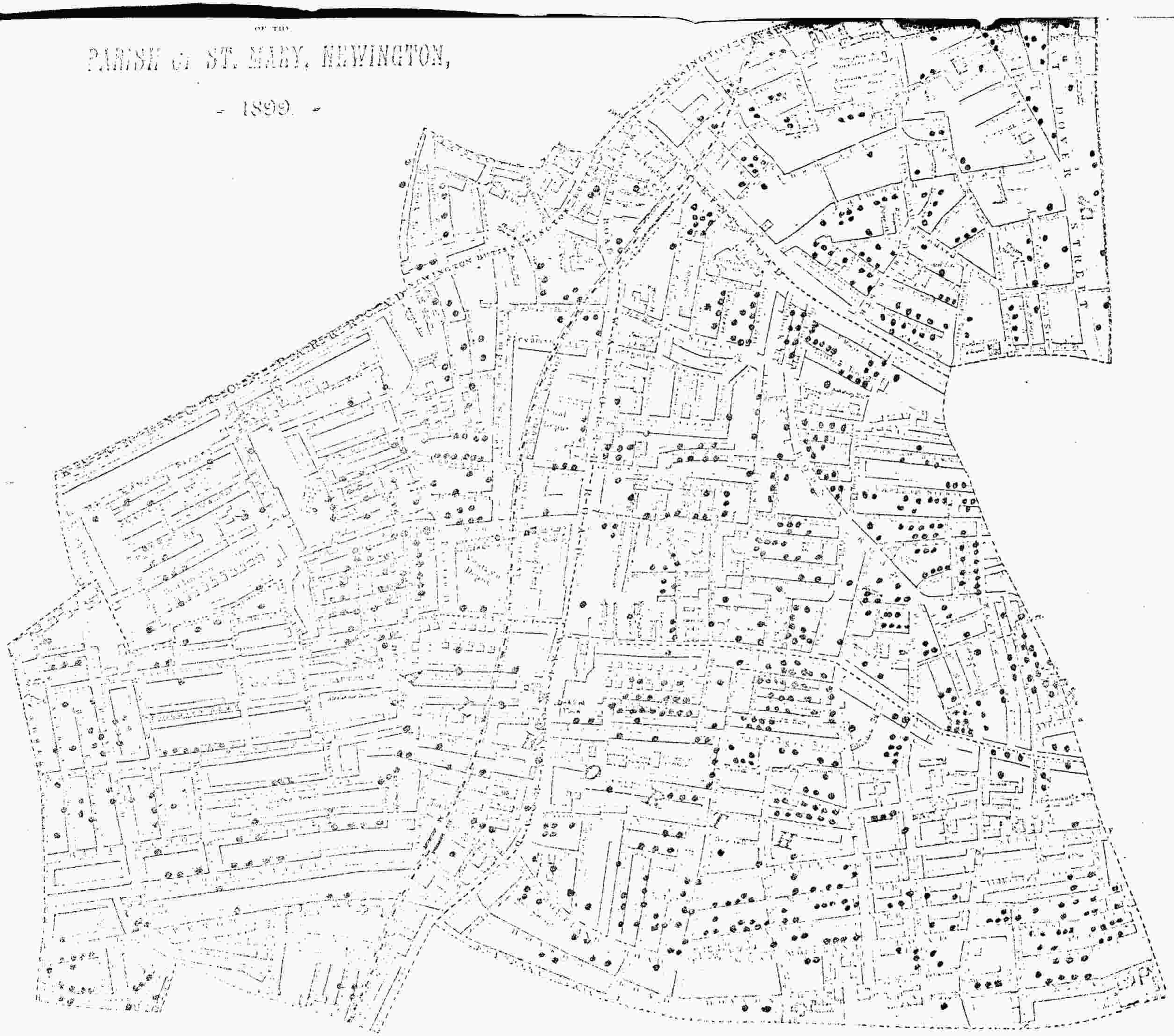
SCARLET FEVER CASES
in NEWINGTON
1891

144 81

OF THE

PARISH of ST. MARY, NEWINGTON,

- 1899. -




SCALE

SCARLET FEVER CASES

in NEWINGTON

1892.

MAP 32

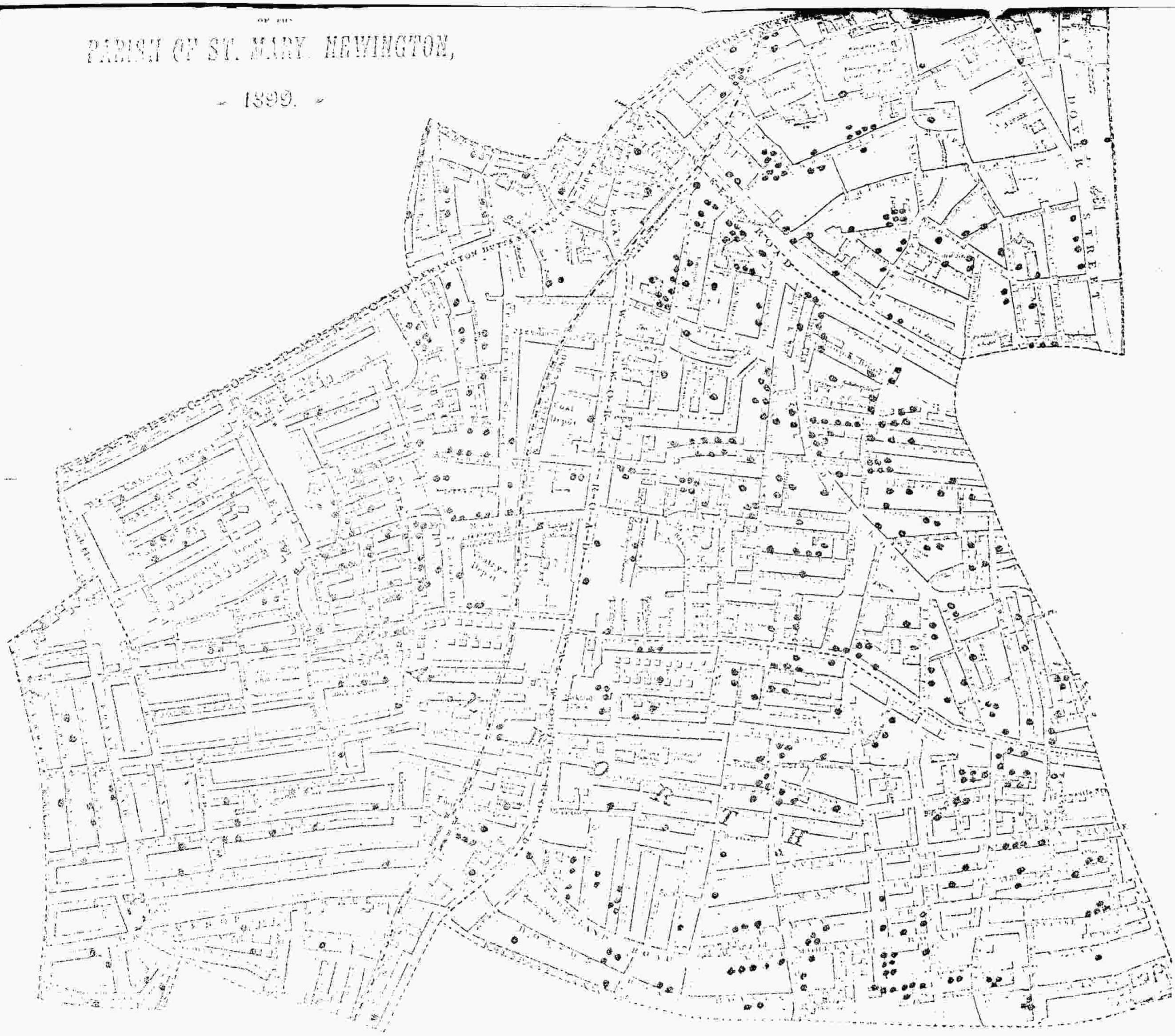


OF THE
PARISH OF ST. MARY, NEWINGTON,
1899.
SCARLET FEVER CASES
in NEWINGTON
1893
MAP 33
GREAT DOVER STREET
KENT ROAD
WALWORTH ROAD
NEWINGTON BUTTS
SCALE

OF THE

PARISH OF ST. MARY NEWINGTON,

– 1899. –



SCARLET FEVER CASES
IN NEWINGTON
1894

MAP 34

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCARLET FEVER CASES

IN NEWINGTON

1895

MAP 85

OF THE

PARISH OF ST. MARY, NEWINGTON,

1899.



SCALE

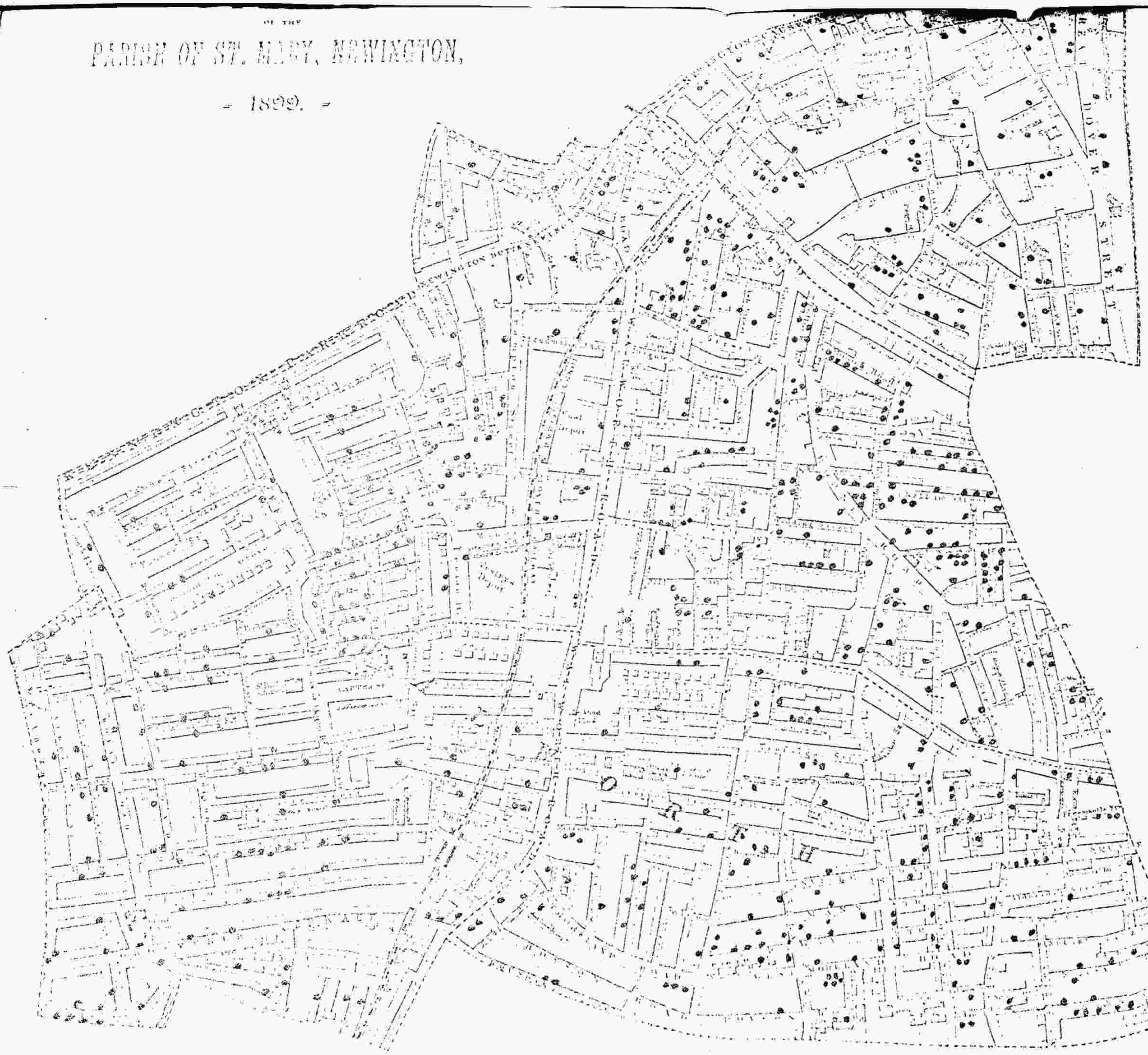
SCARLET FEVER CASES
in NEWINGTON
1896

MAP 36

OF THE

PARISH OF ST. MARY, NEWINGTON,

= 1899. =



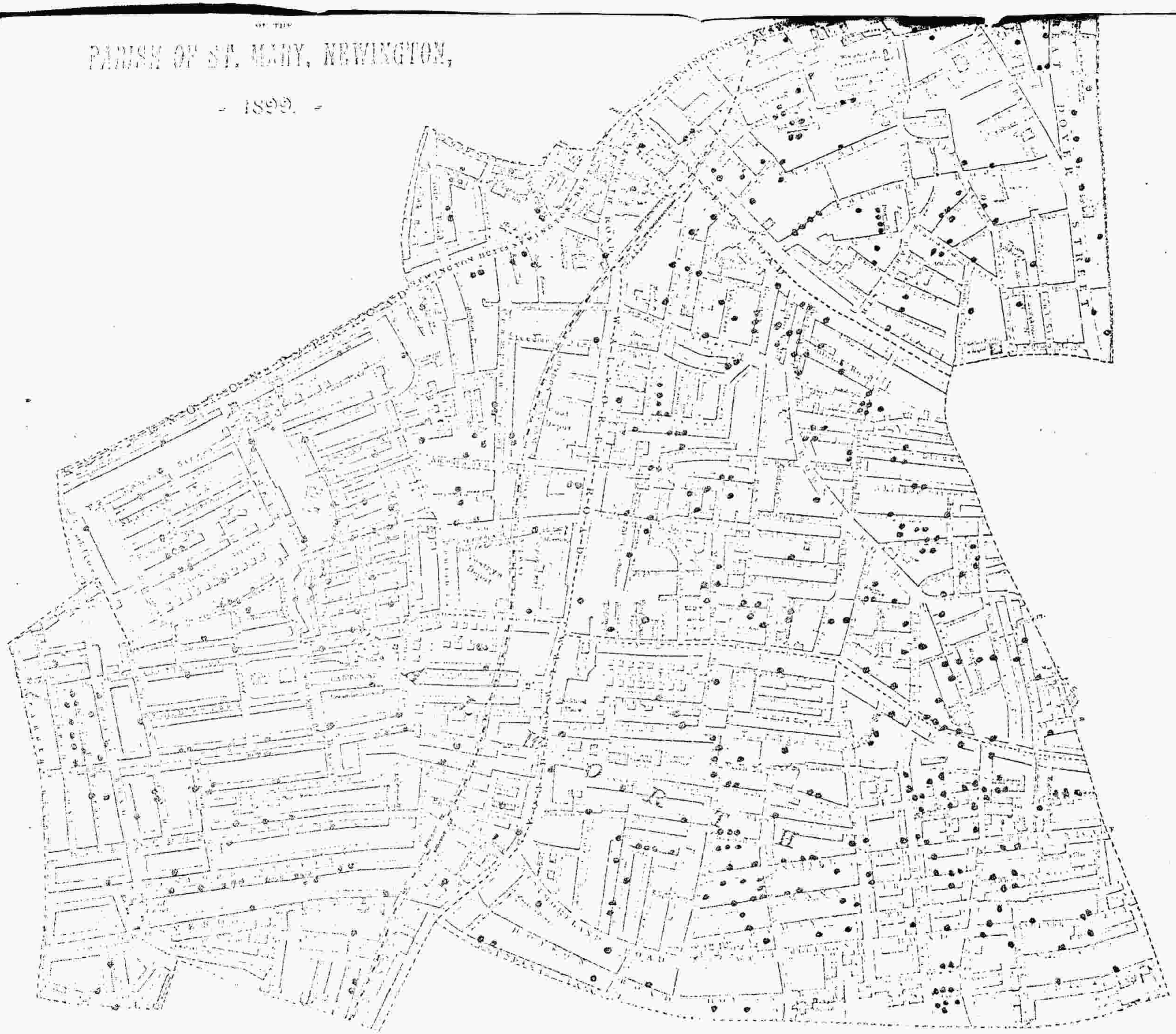
SCARLET FEVER CASES
IN NEWINGTON
1898

MAP 37

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCARLET FEVER CASES
in NEWINGTON
1899

MAP 38

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



DIPHTHERIA CASES
in NEWINGTON
1890 - 1899

MAP 39

MAP 40



PARISH OF ST. MARY, NEWINGTON.

- 1859. -

Diphtheria Cases
in Newington
1890

OF THE

PARISH OF ST. MARY, NEWINGTON,

1899.



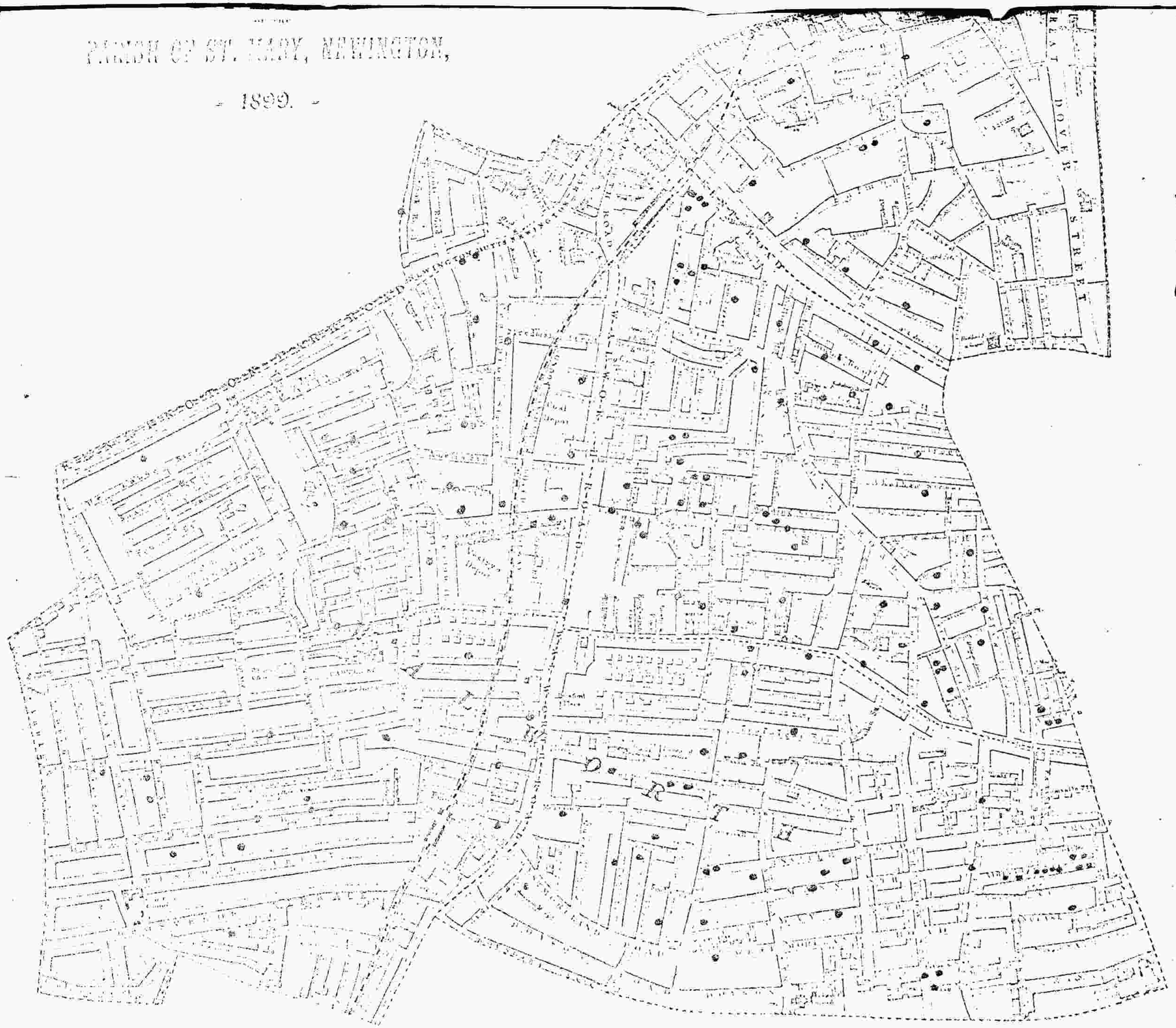
SCALE

DIPHTHERIA CASES
IN NEWINGTON
1891

MAP 41

PARISH OF ST. MARY, NEWINGTON,

- 1899. -

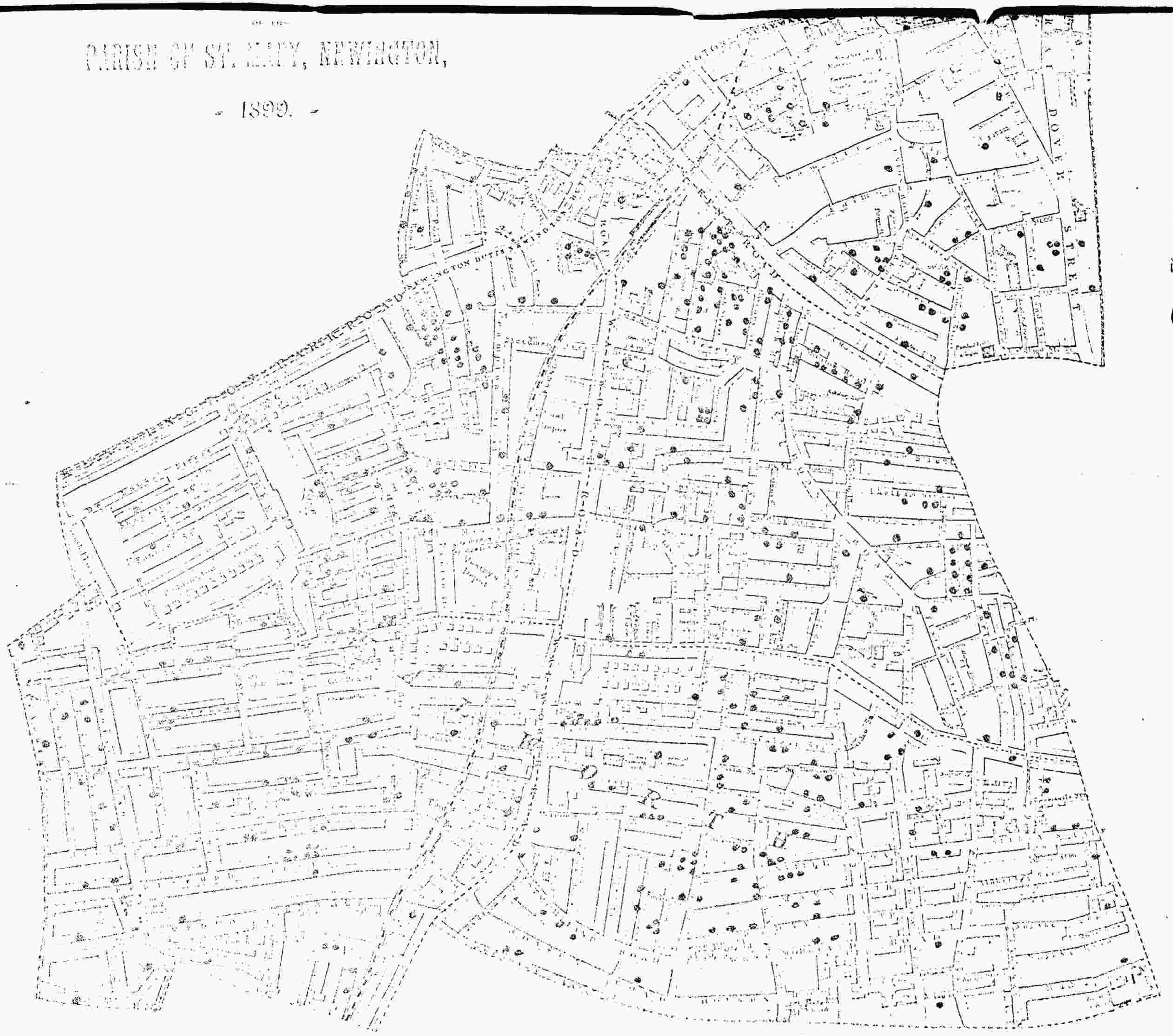


DIPHTHERIA CASES
in NEWINGTON
1892

MAP 42

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



DIPHTHERIA CASES

IN NEWINGTON

1893

PLAN 43

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



DIPHTHERIA CASES
in NEWINGTON
1894

Map

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



SCALE

DIPHTHERIA CASES

IN NEWINGTON

1895

MAP 45

PARISH OF ST. MARY, NEWINGTON,

- 1899. -

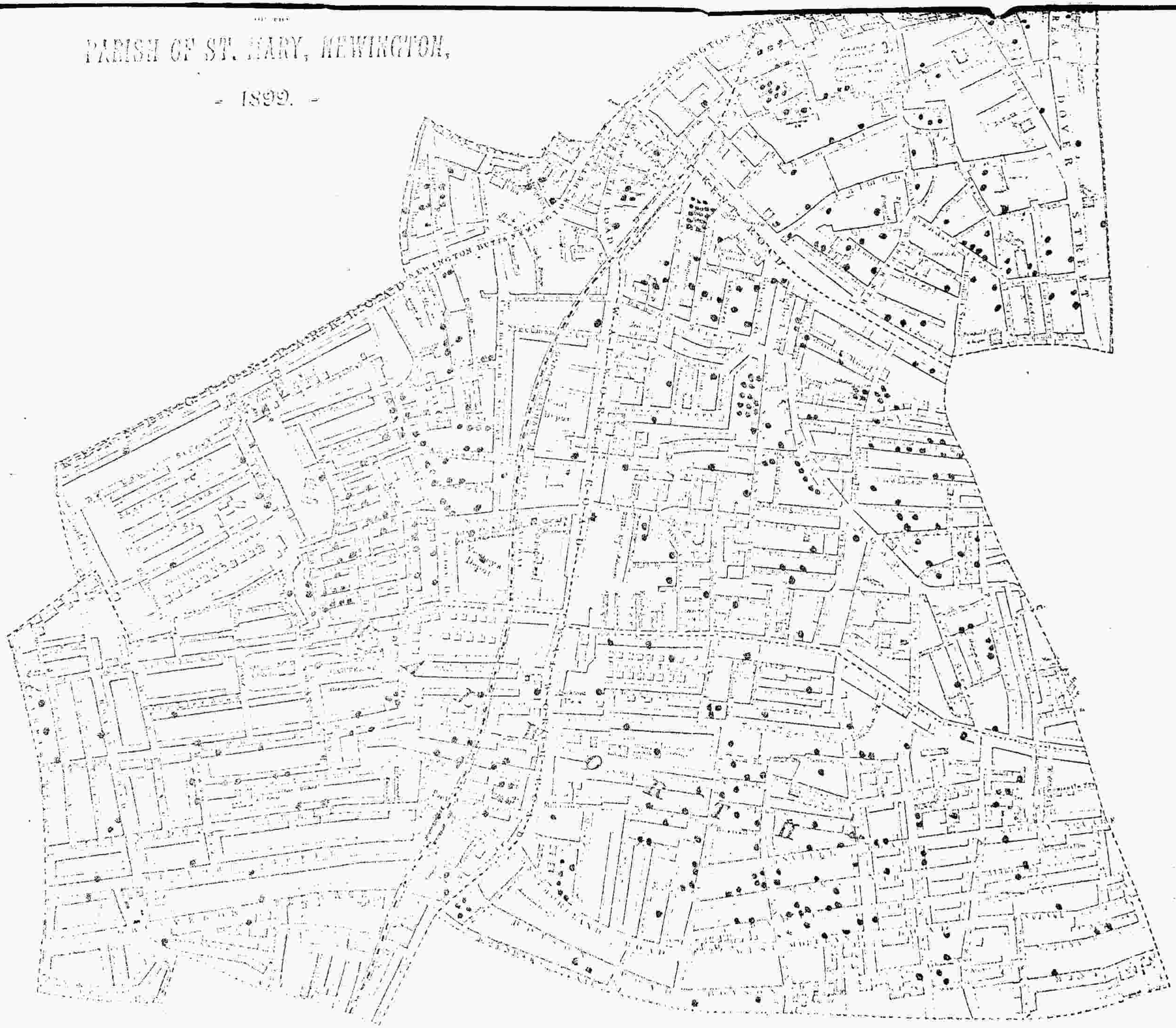


DIPHTHERIA CASES
in NEWINGTON
1896

MAP 46

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



DIPHTHERIA CASES
IN NEWINGTON
1898

SCALE

PLAN OF N. E. HALL, NEWINGTON,

- 1899. -



DIPHTHERIA CASES
in NEWINGTON
1899

MAP 48

MAP 49

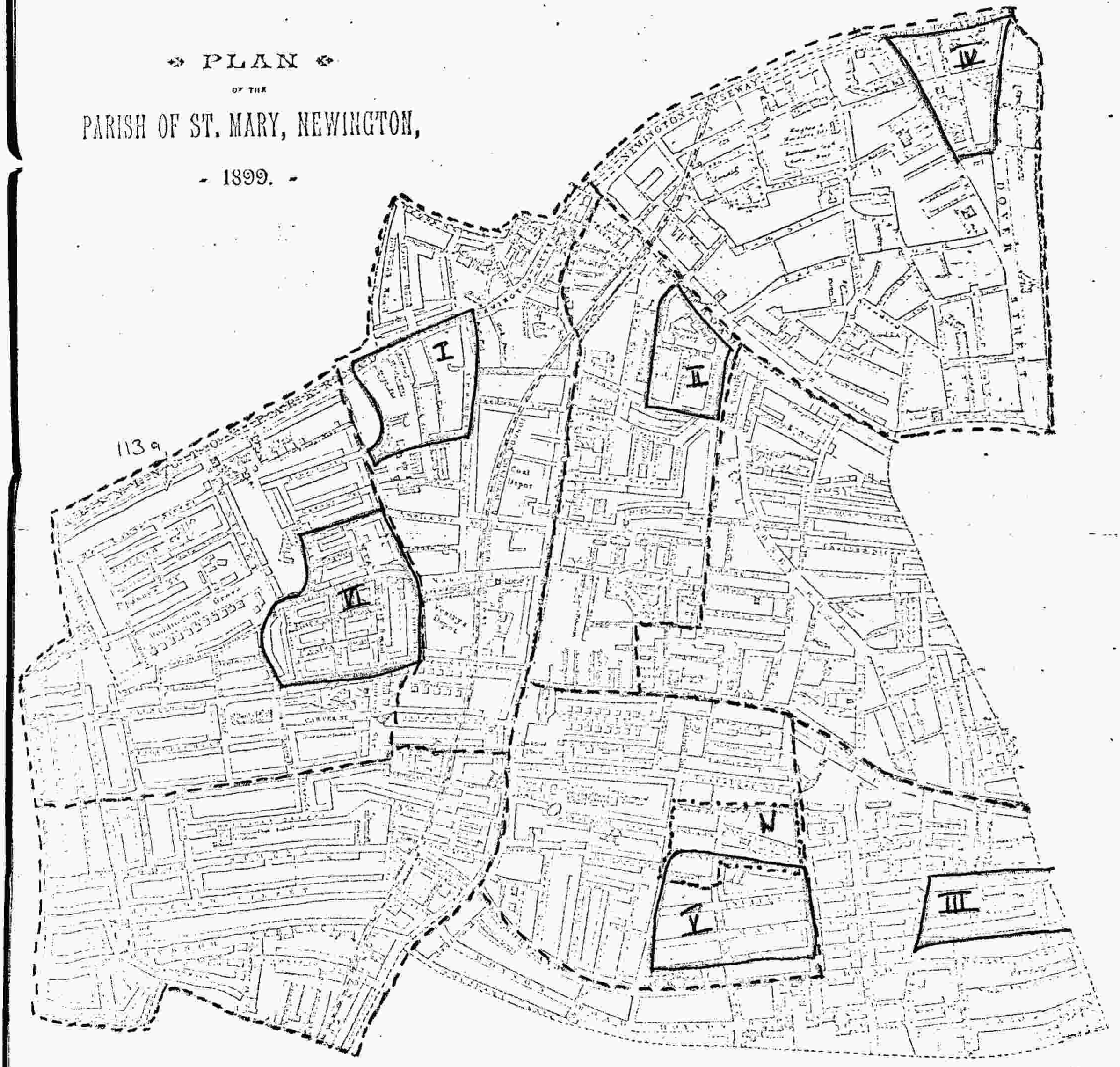
HOUSING ESTATES IN NEWINGTON

PLAN

OF THE

PARISH OF ST. MARY, NEWINGTON,

- 1899. -



113 a

— = estate boundaries

--- = Booth's area boundaries.

-·-·- = Wooler St. Estate (W.)

Table I

Vital Statistics for the three parishes: showing relative development and stagnation of population and housing, 1851-91.

Population 1851-1891

	Camberwell	St. George	Newington
1851	54,667	51,824	64,876
1861	71,448	55,510	82,219
1871	111,306	56,083	88,691
1881	186,593	58,618	107,831
1891	235,312	59,712	115,663

Inhabited Houses 1851-1891

	Camberwell	St. George	Newington
1851	9,412	7,000	10,458
1861	12,098	7,234	12,815
1871	17,772	6,903	12,545
1881	27,316	6,761	14,009
1891	33,991	6,947	13,392

Table 2

Death-rates per thousand of population per annum, comparative improvement in the three parishes, 1856-99.

	London	St. George	Newington	Camberwell
1856	25	30	22.7	20
1899	19.3	24.3		17.8

Table 3

Medical Officers of Health for the three Parishes, 1856-1900.

CAMBERWELL:

John Syer Bristowe, FRS, FRCS, 1849, LSA 1849; MB (St. Thomas'), scholarship and medal in surgery, 1850; MD 1852, 1849 physician, St. Thomas' Hospital, various posts, lecturer on medicine 1876 until retirement, 1892. MOH Camberwell 1856-95 (died).

Francis Stevens, BA Oxon 1890; MRCS and LSA 1883; DPH, RPCS, 1891. Previously tutor and demonstrator in anatomy, Sheffield School of Medicine; MOH Camberwell 1895-

ST. MARY NEWINGTON:

William Tiffin Iliff Jnr. MB 1855, MD 1856; MRCS and LSA 1845 (Guy's); formerly surgeon Royal South London Dispensary; MOH Newington, 1856-1887 (died April).

George Millson, LRCP London 1870; MCRS 1870; (St. Mary's); late medicalsuperintendent Northampton County Asylum; Assistant MO County Asylum Colney Hatch; surgeon 5th French Ambulance in Franco-Prussion War. MOH Newington 1887-

ST. GEORGE-THE-MARTYR:

William Rendle, FRCE 1873, MD 1836, LSA 1832 (Guy's and Grainger's); MOH St. George 1856-58;

Henry Bateson MD1847, MRCS 1839, LSA 1840; MOH St. George 1858-1879 (died February).

Thomas Henry Waterworth, MD Aberdeen 1860; MRCS Eng. 1850, LSA 1849 (Guy's); surgeon Surrey Dispensary; late surgeon H.M. Prison Newington; MOH St. George 1879-1891 (dismissed).

Frederick Waldo, MD, Cantab. 1884, MB 1880, MA 1878, BA 1875; MRCS 1879, DPH 1890 (Camb. St. Bart's, Dublin, Paris and Berlin); late Hon. physician Kensington Dispensary; senior res. mo., East London Hospital for Children; House physician St. Bart's and Victoria Park Hospital for diseases of the chest; intern Royal Lying-in Hospital; clinical assistant London Lock Hospital; MOH St. George 1891-

TABLE 4

Scarlet Fever Epidemic, St. George-the-Martyr, 1856-70, Deaths.

1856-57:	32	1863-64:	92
1857-58:	27	1864-65:	78
1858-59:	110	1865-66:	28
1859-60:	68	1866-67:	34
1860-61:	44	1867-68:	42
1861-62:	79	1868-69:	51
1862-63:	87	1869-70:	152

London, Scarlet Fever Deaths, 1856-1869

1856:	1795	1863:	5075
1857:	1587	1864:	3242
1858:	4118	1865:	2181
1859:	4197:	1866:	1885
1860:	2457	1867:	1438
1861:	2358	1868:	2921
1862:	3457	1869:	5803

N.B. The source for these statistics is the M.O.H.'s Annual Report for 1869-70. The London statistics given, however, are extremely dubious: those given by the Registrar-General for corresponding years are very different, often nearly double those postulated by Bateson for any given year, e.g.,

1856:	3064	1864:	5352
1857:	2735	1865:	3525
1858:	3811	1866:	3221
1859:	3811	1867:	2523
1860:	2426	1868:	4870
1861:	2944	1869:	9772
1862:	3818	1870:	9925
1863:	8125	1871:	3160

(Scarlet fever deaths for London, Registrar-General's Ann. Reps.,1856-71).

TABLE 5

Smallpox Cases in Camberwell, with reference to the Deptford Hospital Scandal.

Smallpox death rates per 10,000 population in the parish, 1876-1882.

	Parish	Camberwell	St. George	Peckham	Ward 4
1876	25.5	15.0	35.0	30.5	35.5
1877	80.0	37.0	62.5	133.0	190.5
1878	51.5	60.0	39.0	55.5	57.0
1879	46.5	18.5	20.5	92.0	124.0
1880	17.0	6.5	8.0	33.0	39.0
1881	101.0	39.0	80.0	177.0	24.60
1882 (1st Quarter)	17.7	10.0	9.8	29.5	37.14

Smallpox Cases notified to the MOH.

	Parish	Ward 4	% in Ward 4
1876	180	55	30.6
1877	838	340	40.7
1878	382	136	35.6
1879	394	173	43.9
1880	208	84	40.4
1881	1037	498	48.0
1882 1st Quarter	141	77	54.6

Source: Med. Off. Ann. Rep. Camberwell, 1881-82, p. 110.

TABLE 6. Expenditure estimates for Newington Public Health Department, for the year ending Lady Day 1897.

		£	s	d	£	s	d
Reconstruction of sewers							
Iliffe St; 130' of 12" pipe		60					
Contingencies		500			560		
12 manholes for pipe sewers					150		
2 side entrances					70		
Preparation of parish map					310		
Maintenance of public conveniences in							
Gt. Dover St:	water	55					
	gas	25					
	wages	150					
	contingencies	20			250		
Newington Butts:	water	10					
	gas	12	10				
	wages	67	10				
	contingencies	10			100		
Water for urinals					75		
Painting					100		
					525		
Cleansing and disinfecting rooms					200		
Repairs to brick sewers, construction of new gullies					150		
Wages for flushing and jobbing works					1800		
Lime, bricks, cement, gully grates, etc.					350		
Plumbing works, oil, tools, disinfectants					200		
Water for flushing pipe sewers					250		
Mortuary and Coroner's Court (wages, attendant and repairs)					160		
Incinerator and destructor, wages engineer, carman, etc.					200		
General contingencies					200		
				TOTAL	£5,125. 0. 0		

Source: Newington Vestry Minutes, 19th February, 1896.

TABLE 7. Smallpox Deaths in London and Camberwell in 1871.

	London	West	North	Central	East	South
January-April	2305	336	679	163	641	486
April-July	3246	196	1327	152	437	1134
July-October	1255	68	545	35	195	412
October-December	980	52	437	44	182	265
TOTAL	7786	652	2988	394	1455	2297

Smallpox Deaths in Camberwell and Districts, 1871

	Parish	Dulwich	Camberwell	Peckham	St. George
January-April	23	-	3	12	8
April-July	59	-	12	22	25
July-October	39	-	4	7	28
October-December	32	-	4	3	25
TOTAL	152	-	23	44	86

Source: Med. Off. Ann. Rep., Camberwell, 1871-72, p. 44

TABLE 8. Remuneration paid to the medical visitors by Camberwell Vestry for services during the cholera epidemic of 1866.

Visitor	Ward	Weekly Retainer	Charges for medicines	Gratuity for visits	TOTAL
		£ s p	£ s p	£ s p	£ s p
Mr. Chabot	3	10 10 0	9 13 0	5 9 6	25 12 6
Dr. Simpson	4	10 10 0	39 - 10	-	49 10 10
Dr. Ray	6	10 10 o	9 6	-	10 9 6
Dr. Sinclair	6	10 10 0	2 6 0	5 5 0	18 1 0
Dr. Phelps	5	10 10 0	-	-	10 10 0
Dr. Blomfield	5	10 10 0	20 - -	-	30 10 0
Dr. Pinder	6	10 10 0	23 - -	10 10 -	44 0 0
Dr. Hague	1	10 10 0	9 7 6	5 5 -	25 2 6

Source: Camberwell Vestry Minutes, 12th December, 1866.

TABLE 9. Cholera in South London, 1866.

	Est. Pop. mid 1866	Cholera deaths	Diarrhoea deaths	Total	Proportion per 10,000 pop.
St. Saviour	36,422	31	37	68	18.7
St. Olave	18,914	20	17	37	19.6
Bermondsey	64,310	33	75	108	16.8
St. George	57,498	38	39	77	13.4
Newington	92,680	26	45	71	7.7
Lambeth	174,904	113	158	271	15.5
Wandsworth	82,979	40	59	99	11.9
Camberwell	81,818	46	54	100	12.2
Rotherhithe	28,767	26	13	39	13.6
Greenwich	144,836	282	91	373	25.7
Lewisham	90,420	55	34	89	9.8

Source: Med. Off. Ann. Rep., Camberwell, 1866-67, p. 97.

TABLE 10. Notifications of Infectious Disease in Camberwell and Newington.

Notifications in Camberwell, 1889-1897

	Smallpox	Scarlet Fever	Typhoid	Puerperal Fever	Diphtheria	Erysipelas
30.10.89-25.3.90.	2	504	58	3	149	90
26.3.90-25.3.91.	2	888	152	12	256	258
26.3.91-25.3.92.	4	648	109	9	233	192
1892	17	1,571	108	15	312	282
1893	140	1,886	138	23	526	440
1894	16	946	129	15	470	336
1895	86	885	245	17	925	332
1896	13	1,245	184	16	1,474	359
1897	33	1,213	153	14	1,182	296

Notifications in Newington, 1890-1900

1890	-	451	-	-	91	-
1891	-	335	-	-	124	-
1892	-	958	59	-	148	225
1893	60	1080	65	-	441	284
1894	15	550	83	-	295	175
1895	19	414	87	-	262	143
1896	3	666	89	-	378	200
1897	-	769	79	-	318	159
1898	-	617	90	-	445	165
1899	-	509	111	-	709	201
1900	1	356	101	-	434	134

Source: Med. Off. Ann. Reps.

TABLE 11. Annual death-rate from diphtheria per million persons living, in grouped years.

England and Wales		London	
1858-60	372.3		458
1861-65	247.6		224
1866-70	126.8		133
1871-75	120.8		114
1876-80	121.8		130
1881-85	156.2		221
1886-90	169.6		298
1891-94	251.2	1891	340
		1892	462
		1893	760
		1894	625
		1895	529
		1896	606
		1897	507

Source: Newsholme, Diphtheria, p. 31-32.

TABLE 12. Sewerage Works in South London, according to the Metropolitan Board of Works returns in 1875, for the period 1855-75.

Parish	Miles of Sewer	Cost £s
Wandsworth	155	259,383
Lambeth	61 m 25 yds	206,830
Camberwell	60	120,000
Newington	22 m 3 yds	40,587 5s 2d
Bermondsey	11 m 368 yds	24,332 7s 7d
Rotherhithe	10 m 657 yds	21,618 18s 7d
St. George	3 3/4 m	6,090 14s 5d
St. Saviour	unstated	4,400

Source: South London Press, 20th March, 1875.

TABLE 13. Rates for Parish Purposes in South London, for the Year ending 31st March, 1896.

	s d in £		
Rotherhithe	4.4	Camberwell	2.7
Lee	3.6	Plumstead	2.7
Bermondsey	3.5	Newington	2.7
Horsleydown	3.1	St. Olave	2.6
St. George's	3.1	St. Thomas	2.6
Tooting	3	Greenwich	2.5
Eltham	3	Christ Church	2.4
Charlton	2.11	St. Saviour	2.1
Lewisham	2.11	Streatham	2.1
Penge	2.10	Lambeth	1.11
Wandsworth	2.10	Battersea	1.11
Clapham	2.9	St. Paul, Deptford	1.10
Putney	2.9	St. Nicholas, Deptford	1.7
Kidbrooke	2.9		
Woolwich	2.8		

Source: Newington Vestry Minutes, 26th May , 1897

TABLE 14. Parish debts for libraries, baths, etc., in 1897

	£		
Battersea	162,425	Newington	72,247
Lewisham	161,251	Greenwich	69,451
Lambeth	155,357	Deptford	62,653
Camberwell	117,951	Bermondsey	58,307
Wandsworth	115,264	Rotherhithe	47,555
Southwark	87,495		

Source: Newington Vestry Minutes, 26th May, 1897.

TABLE 15. Cases of infectious disease notified in Newington, 1892-96

	Smallpox	Scarlet Fever	Diphtheria	Typhoid	Erysipelas	Other
1892						
Parish	-	958	148	59	225	26
St. Mary Ward	-	129	24	13	34	1
S.G. Estate	-	45	6	3	10	1
1893						
Parish	-	1080	441	65	284	35
St. Mary Ward	7	155	88	11	37	3
S.G. Estate	1	39	27	3	13	-
1894						
Parish	15	550	295	83	175	30
St. Mary Ward	2	108	54	9	25	8
S.G. Estate	2	39	11	3	5	1
1895						
Parish	19	414	262	87	143	26
St. Mary Ward	4	88	95	10	31	11
S.G. Estate	-	18	37	4	4	5
1896 - 48 weeks						
Parish	5	621	342	81	185	27
St. Mary Ward	-	162	106	17	35	7
S.G. Estate	-	72	24	5	9	4

Source: Report to the Medical Officer on the Surrey Gardens Estate, 11th December, 1896, S.C. 2/Box 10.

TABLE 16. Incidence of diphtheria on selected estates in Newington.

	1892	1893	1894	1895	TOTAL
Estate 1 (Crampton Street)	1	19	5	3	28
Estate II (Lion Street)	2	23	7	7	39
Estate III (Surrey Square)	12	1	4	9	26
Estate IV (Trinity Street)	1	3	14	2	20
Estate V (Portland Street)	9	21	8	4	42
Estate VI (Surrey Gardens)	6	27	11	37	81

Source: Report of the Medical Officer on the Surrey Gardens Estate, 11th December 1896, S.C. 2/Box 10.

TABLE 17. Infectious disease cases on the Wooler Street Estate.

1898	Diphtheria	Scarlet fever	Typhoid	"Enteric"	Erysipelas	TOTAL
Clandon St.	3	-	-	-	3	6
Wooler	1	1	-	-	2	4
Burton	1	-	-	-	1	2
Brettel	-	3	-	-	-	3
Hope	-	-	-	-	-	-
Thornton	-	-	-	-	-	-
Shaftesbury	-	1	-	-	-	1
Portland	8	8	-	-	3	19
South	5	3	1	-	-	9
Ewhurst Ct.	-	-	-	-	-	-
Villa St.	6	5	-	-	3	14
Totals	24	21	1	-	12	58

1899						
Clandon St.	3	1	-	1	3	8
Wooler	-	1	-	-	1	2
Burton	-	2	-	1	1	4
Brettel	-	4	1	-	-	5
Hope	-	-	-	-	-	-
Thornton	1	-	-	1	1	3
Shaftesbury	1	2	-	-	-	3
Portland	8	4	-	1	1	14
South	1	-	-	1	1	3
Ewhurst Ct.	-	-	-	-	-	-
Villa St.	4	-	-	1	1	6
Totals	18	14	1	6	9	48

/.... continued.

TABLE 17 (cont.)

1900 (49 weeks)	Diphtheria	Scarlet fever	Typhoid	"Enteric"	Erysipelas	TOTAL
Clandon	1	-	-	1	-	2
Wooler	-	-	-	-	1	1
Burton	1	1	-	1	-	3
Brettel	-	-	-	-	-	-
Hope	-	-	-	-	1	1
Thornton	-	-	-	-	-	-
Shaftesbury	1	-	-	1	-	2
Portland	4	-	-	1	3	8
South	1	-	-	-	-	1
Ewhurst Ct.	-	-	-	-	-	-
Villa St.	2	3	-	-	-	5
Totals	10	4	-	4	5	23

Source: Newington Public Health and Sanitary Committee Minutes, 1898-1900.

Table 18

Notifications of the Principal Infectious Disease for Metropolitan London

1890-99.

	Smallpox	Scarlet Fever	Diphtheria	Typhoid	Typhus	Other Fevers
1890	61	15,438	5,732	3,112	35	244
1891	115	11,527	6,o38	3,428	26	151
1892	439	27,912	8,064	2,509	21	148
1893	2,933	37,919	13,451	3,757	24	210
1894	1,391	18,956	11,120	3,541	21	162
1985	979	19,757	11,223	3,506	14	105
1896	260	26,975	14,224	3,384	6	103
1897	105	22,876	12,811	3,113	4	65
1898	35	16,917	11,561	3,032	17	55
1899	29	18,112	13,363	4,460	14	69

Source: Annual Reports of the Medical Officer for Greenwich

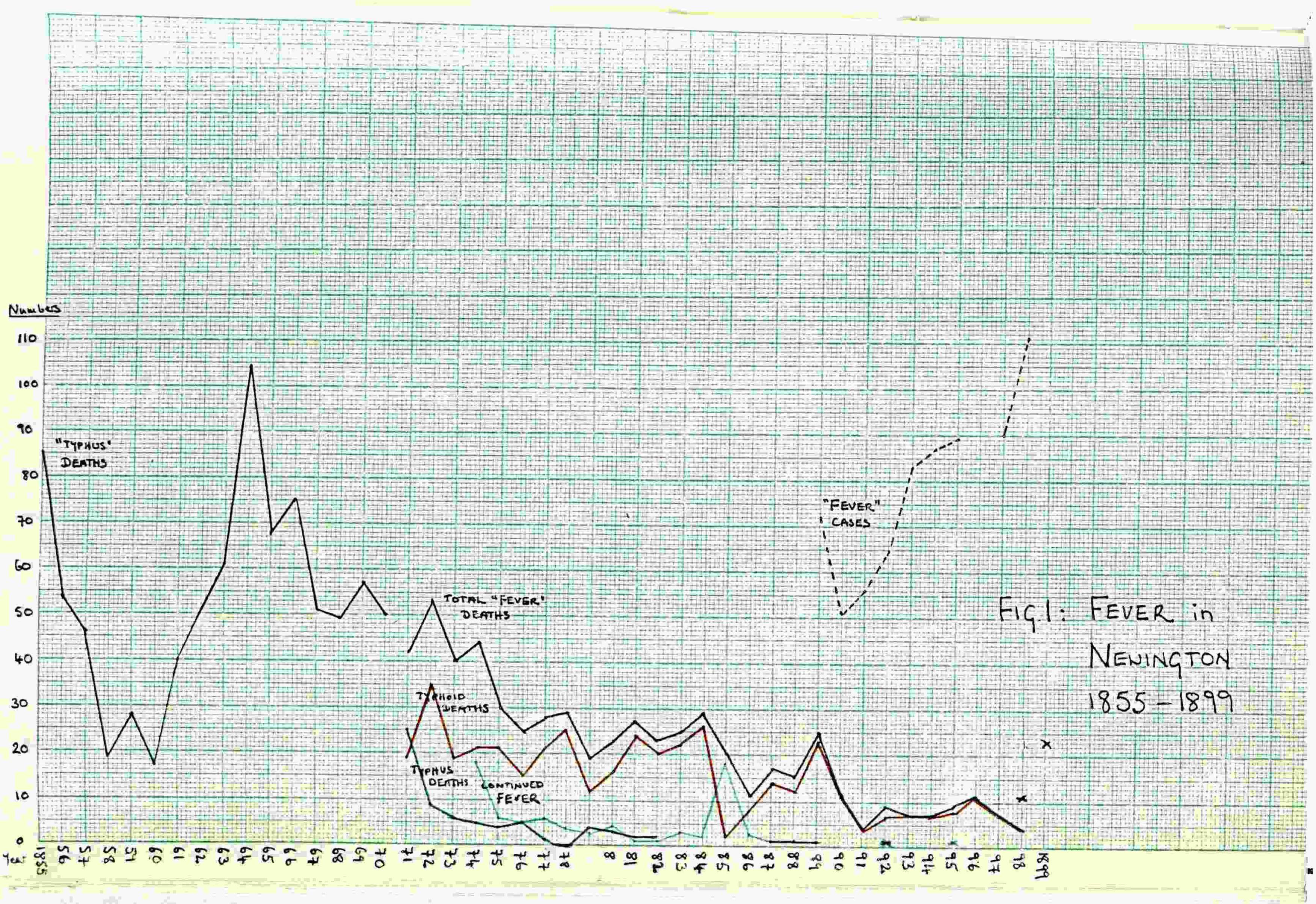


FIG.1: FEVER in NEWINGTON 1855–1899

Numbers

100

90

80

70

60

50

40

30

20

10

0

PARISH TOTAL

PECKHAM

CAMBERWELL

ST. GEORGE

DULWICH

1857 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 1899

FIG. 2: Deaths from "Fever" in the districts of Camberwell 1857 - 1899

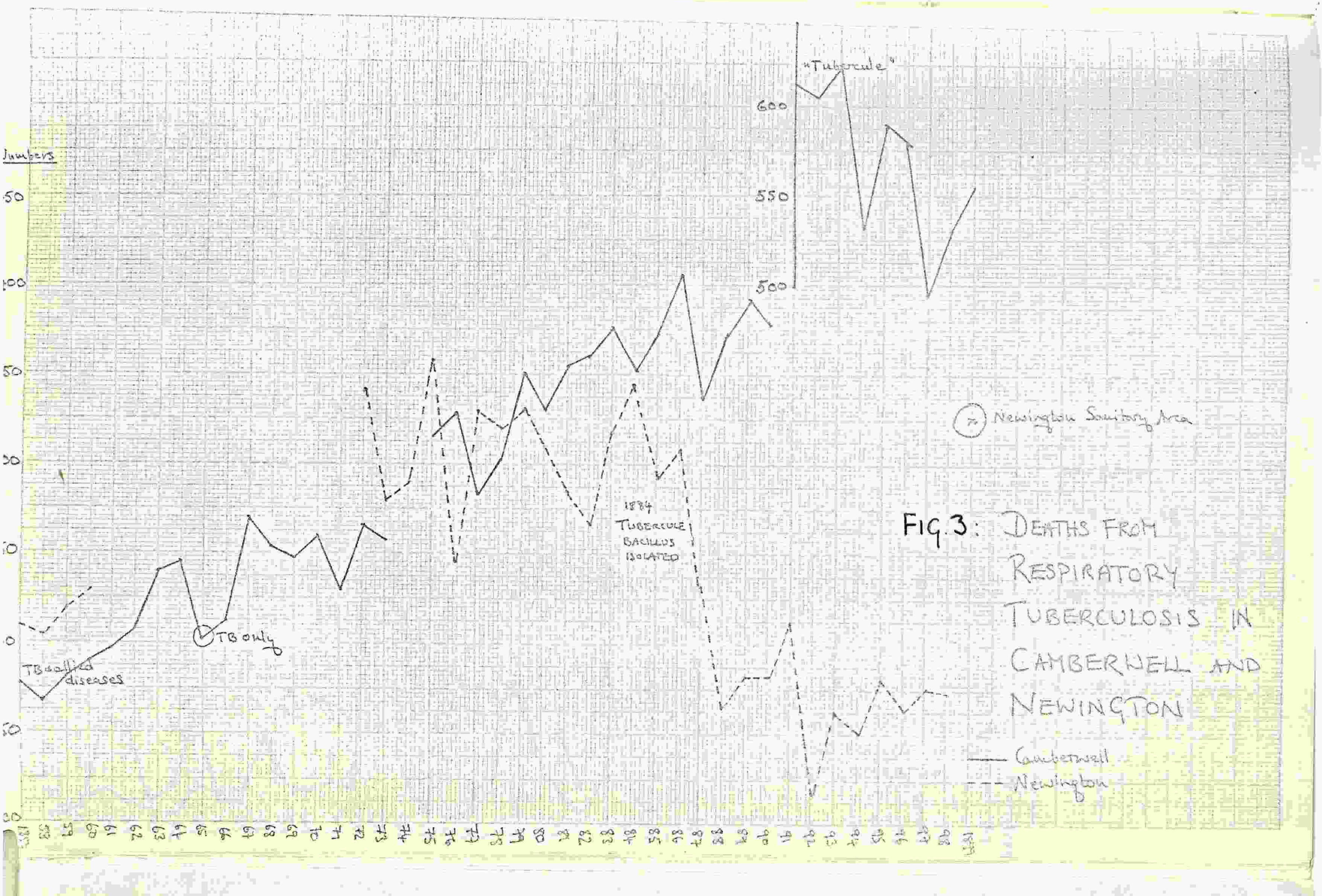


FIG. 3: DEATHS FROM RESPIRATORY TUBERCULOSIS IN CAMBERWELL AND NEWINGTON

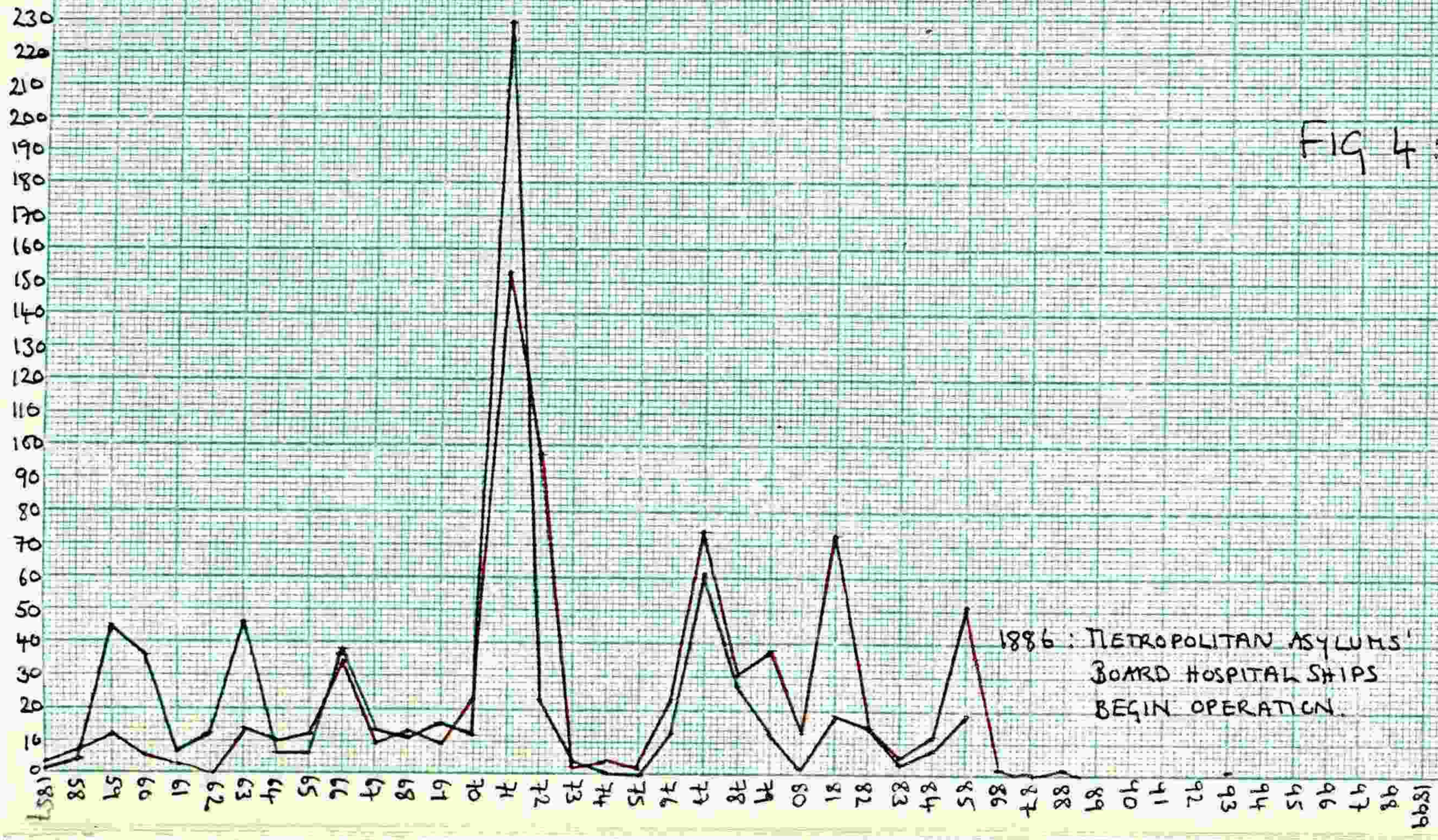


FIG 4 : SMALLPOX DEATHS in CAMBERWELL and NEWINGTON, 1857 - 1899

— Camberwell
— Newington

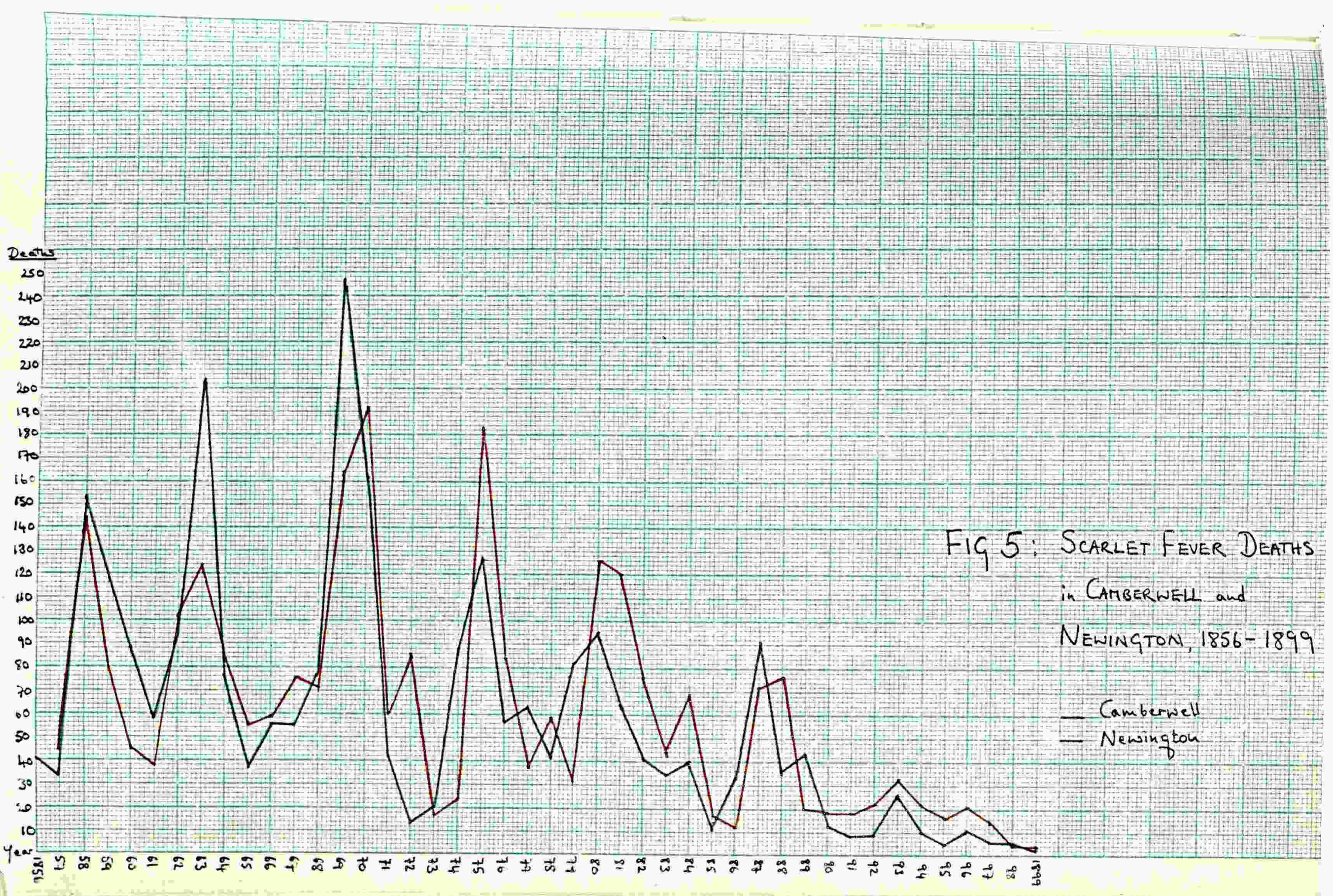


FIG 5: SCARLET FEVER DEATHS in CAMBERWELL and NEWINGTON, 1856-1899

FIG 6: PLACE of TREATMENT of SCARLET FEVER CASES in NEWINGTON 1895-1900

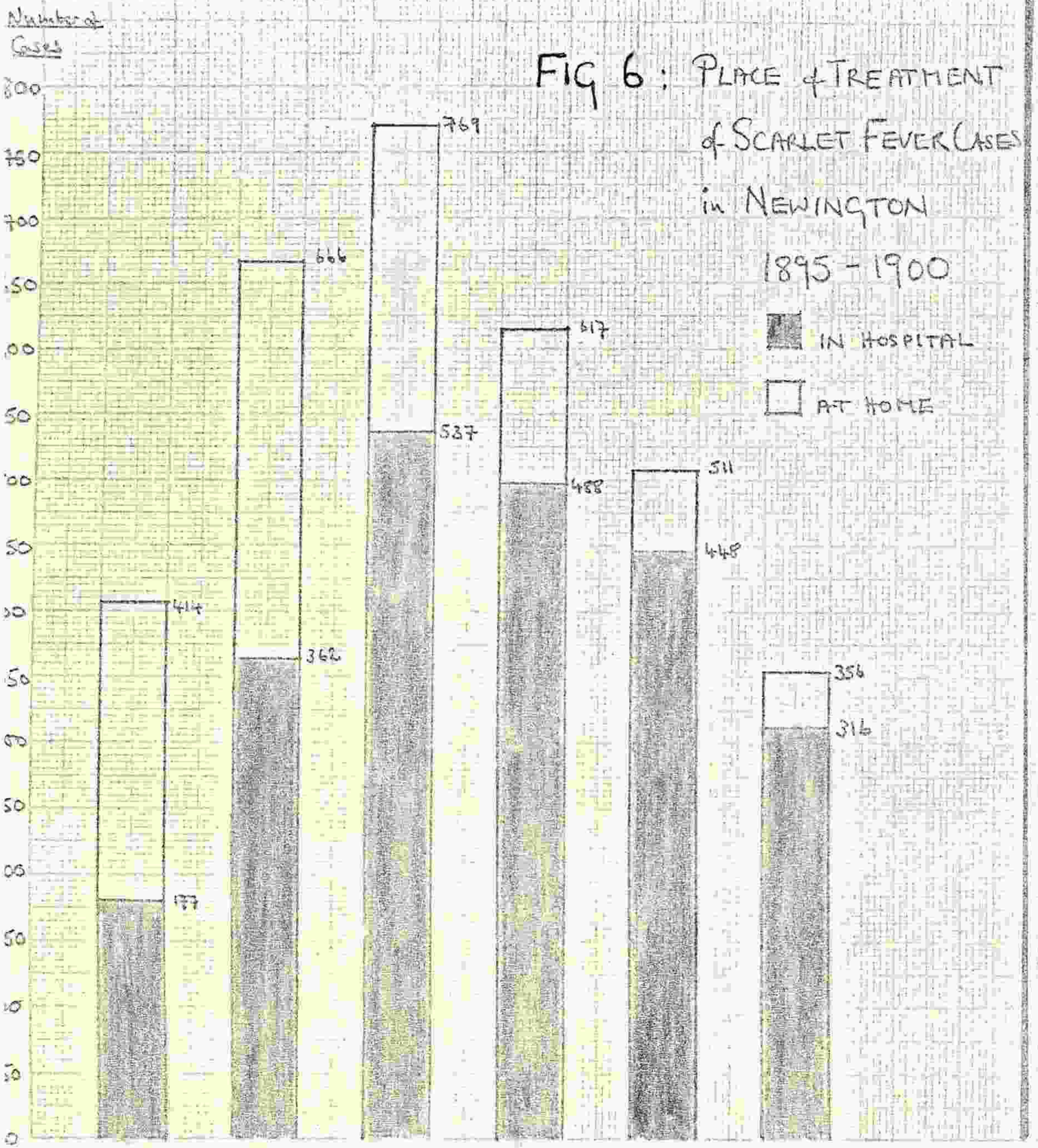
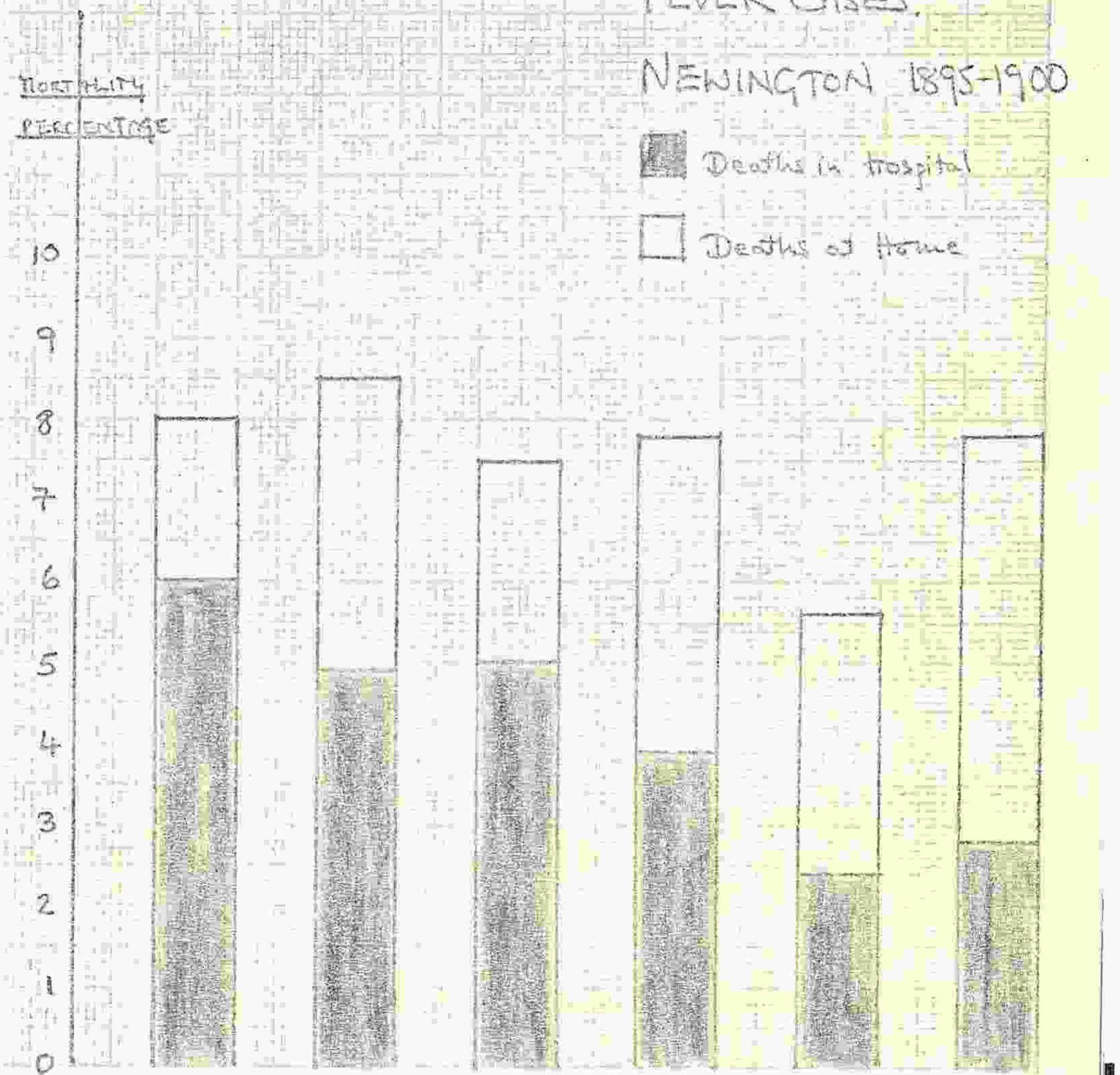


FIG 7: PERCENTAGE MORTALITY AMONG TREATED SCARLET FEVER CASES, NEWINGTON 1895-1900



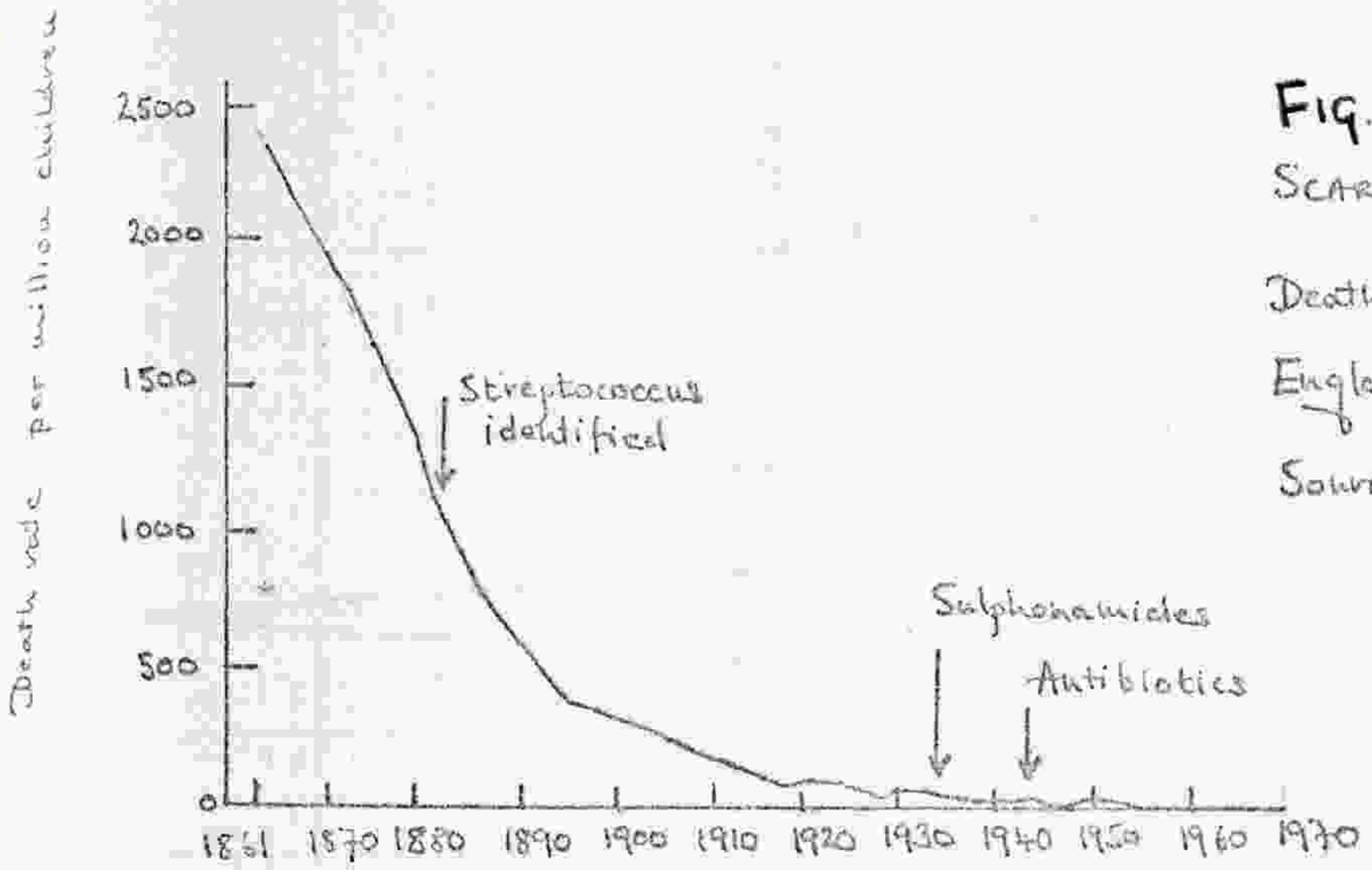


FIG. 8:

SCARLET FEVER DEATH RATES;

Death rates of children under 15 years, for England and Wales

Source: McKeown, p.97

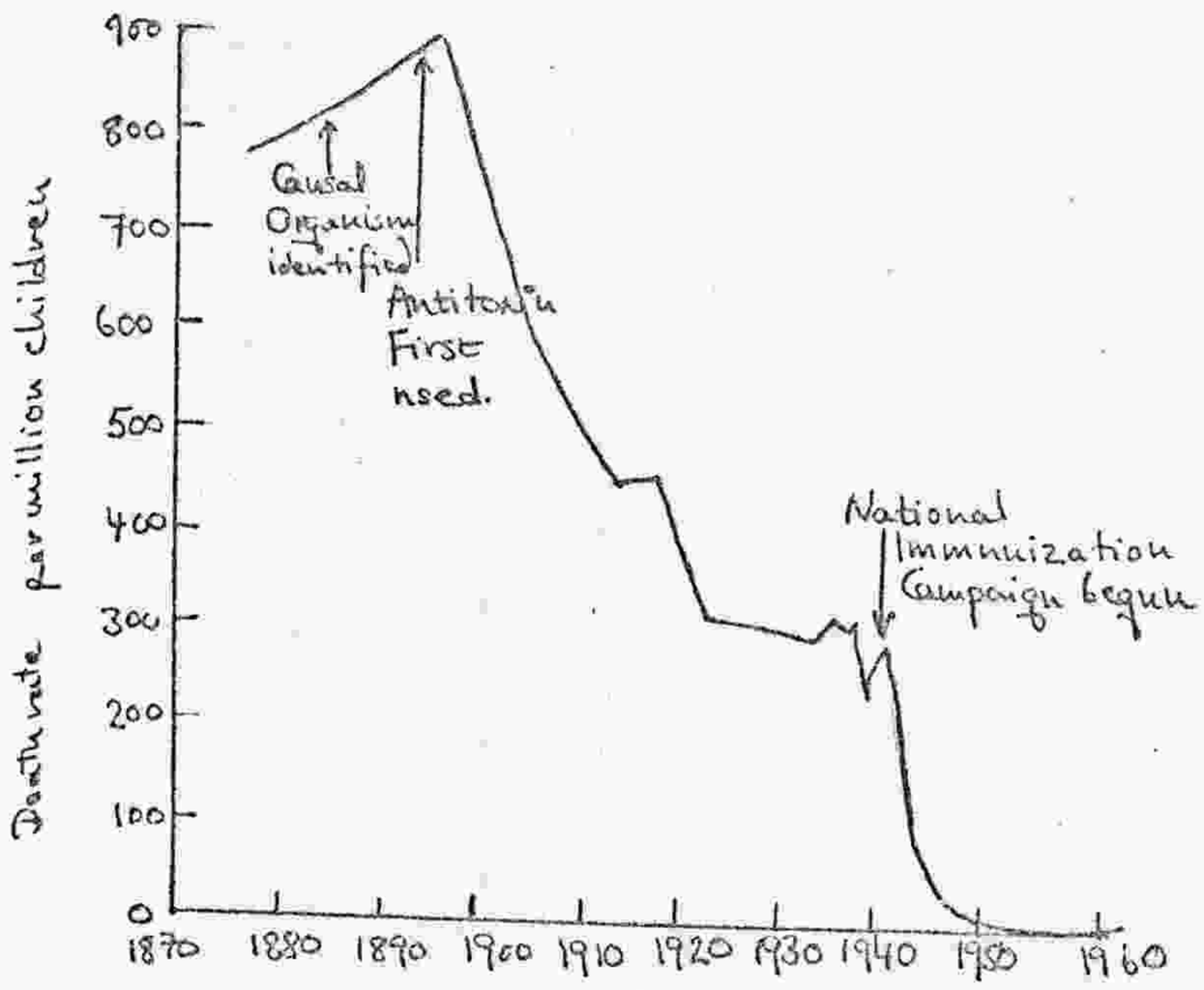


FIG. 9:

DIPHTHERIA DEATH RATES;

Death rates of children under 15 years for England and Wales.

Source: McKeown, p.98

Numbers

170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

1858 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

FIG. 10: DIPHTHERIA DEATHS in CAMBERWELL and NEWINGTON, 1858 - 1899

— Camberwell
— Newington

FIG. 11 : PLACE of TREATMENT of DIPHTHERIA CASES, NEWINGTON 1895-1900

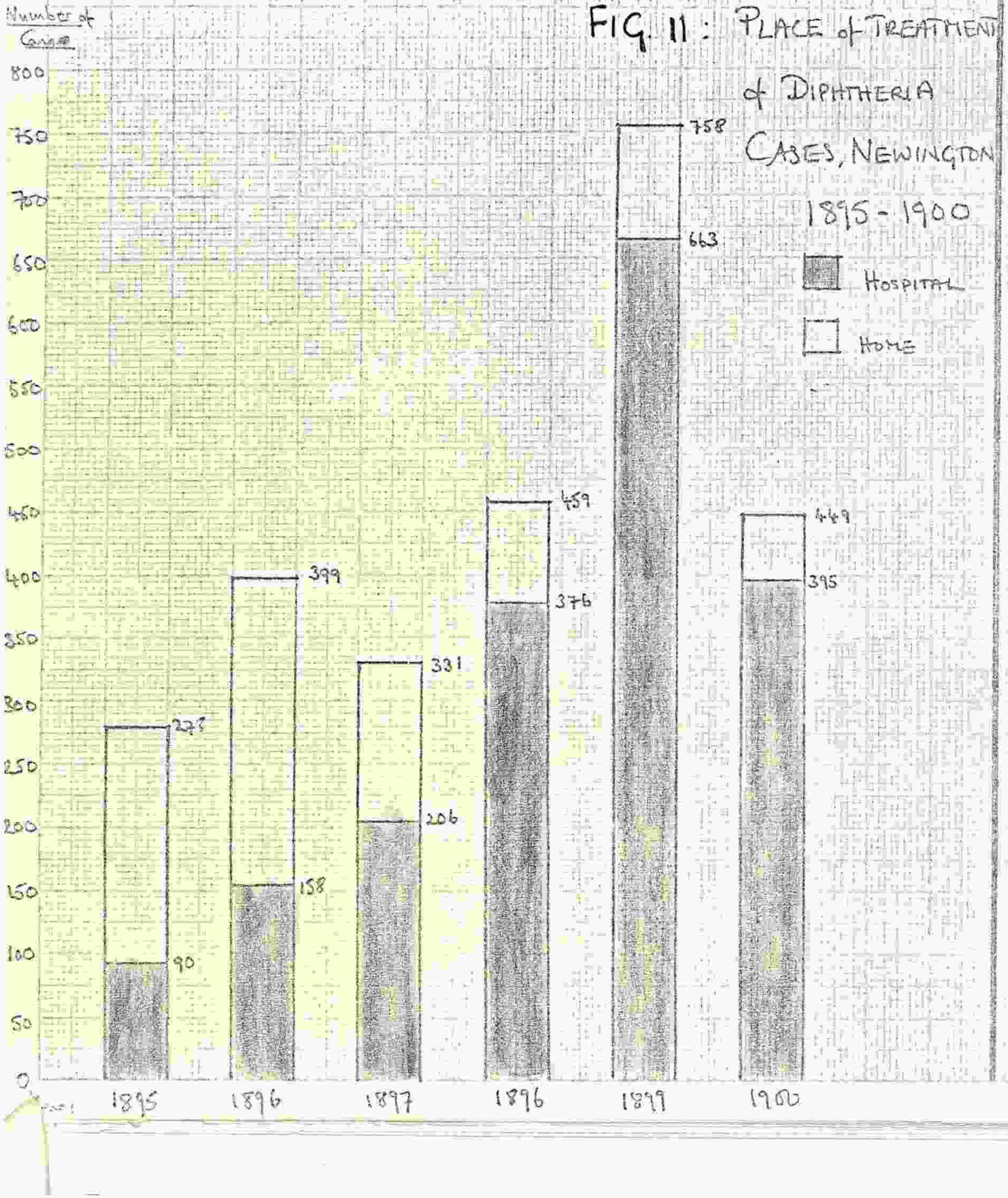
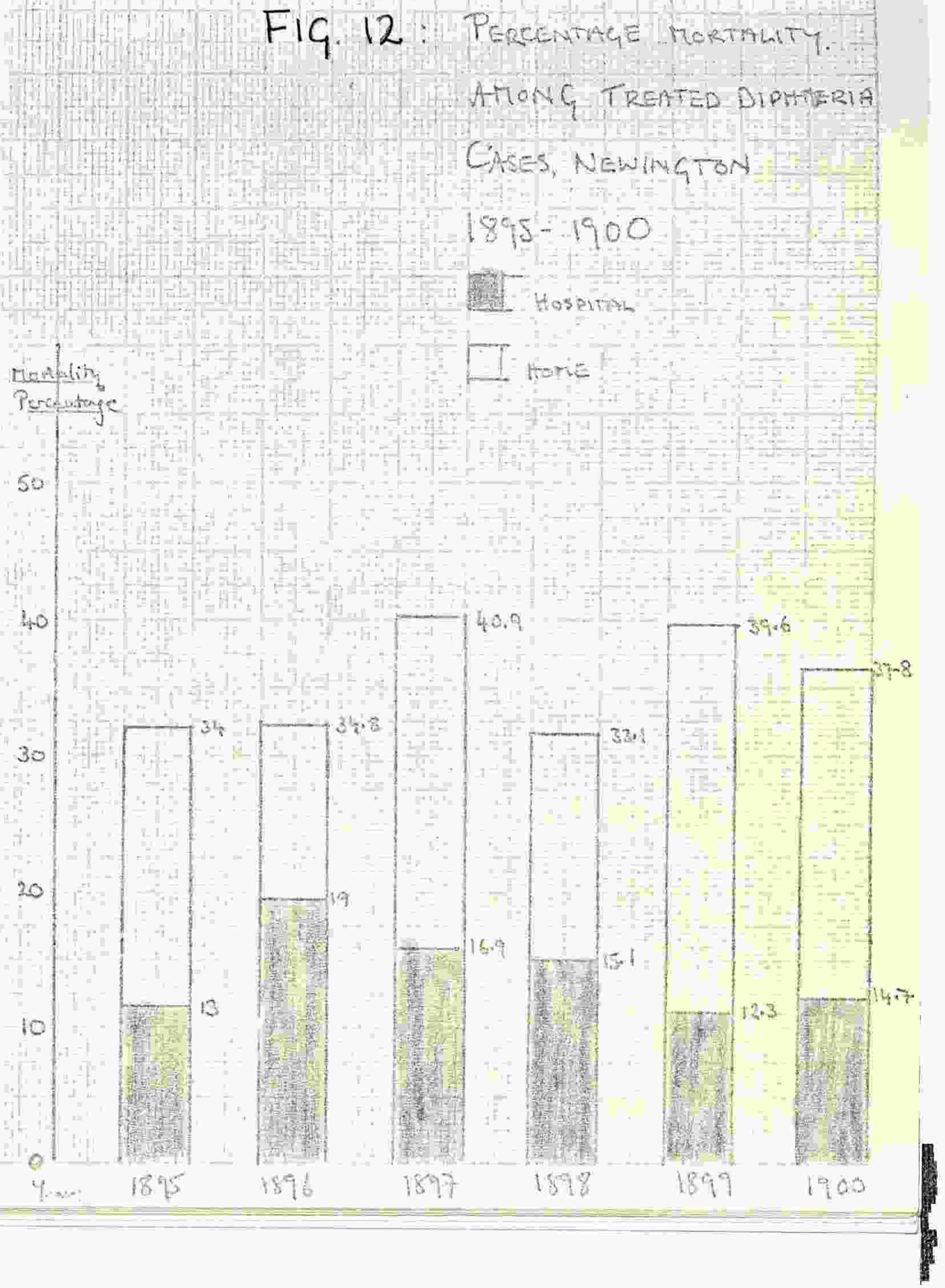


FIG. 12 : PERCENTAGE MORTALITY AMONG TREATED DIPHTHERIA CASES, NEWINGTON 1895-1900



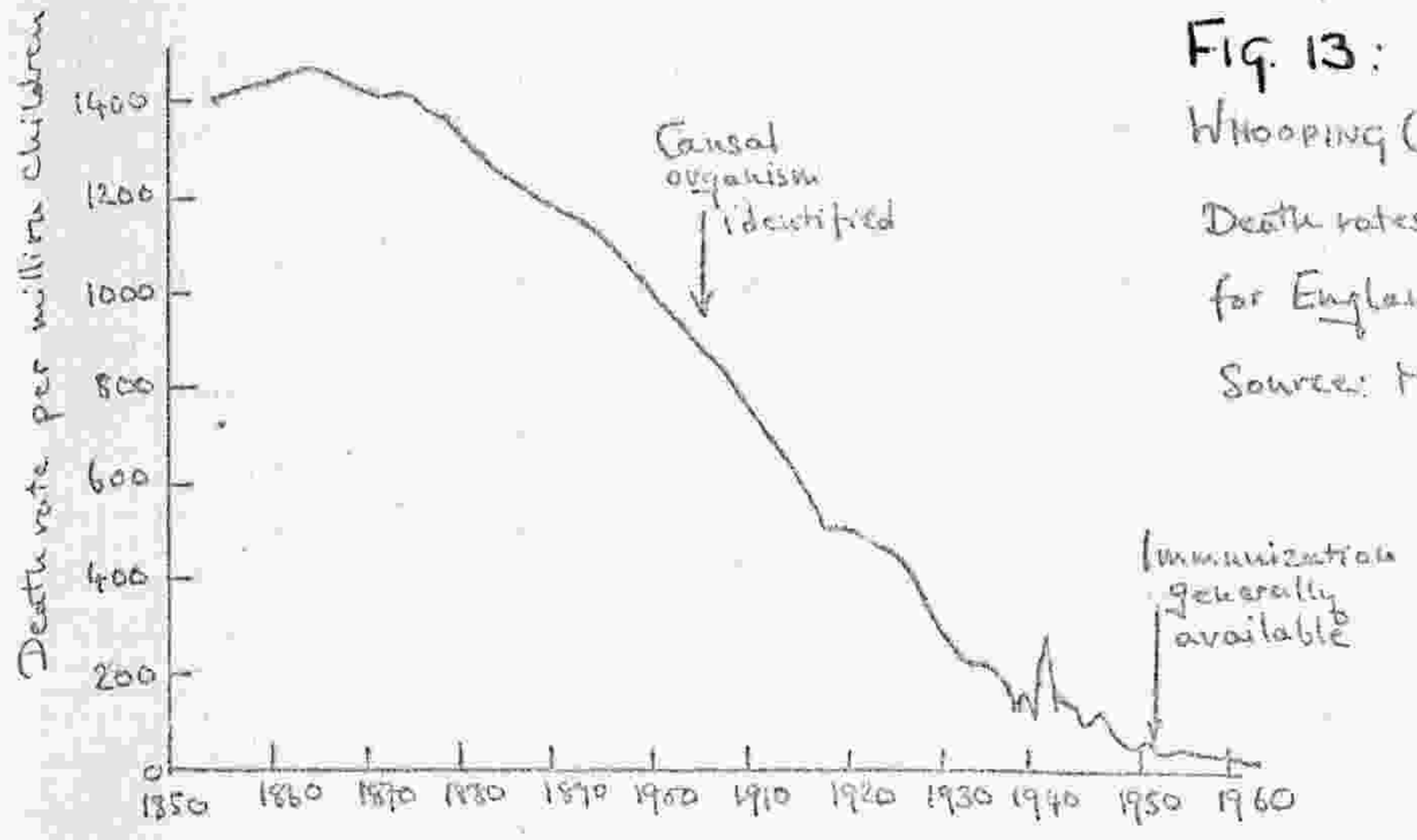


FIG. 13:
WHOOPING COUGH DEATH RATES
Death rates of children under 15 years for England and Wales
Source: McKeown, p. 96

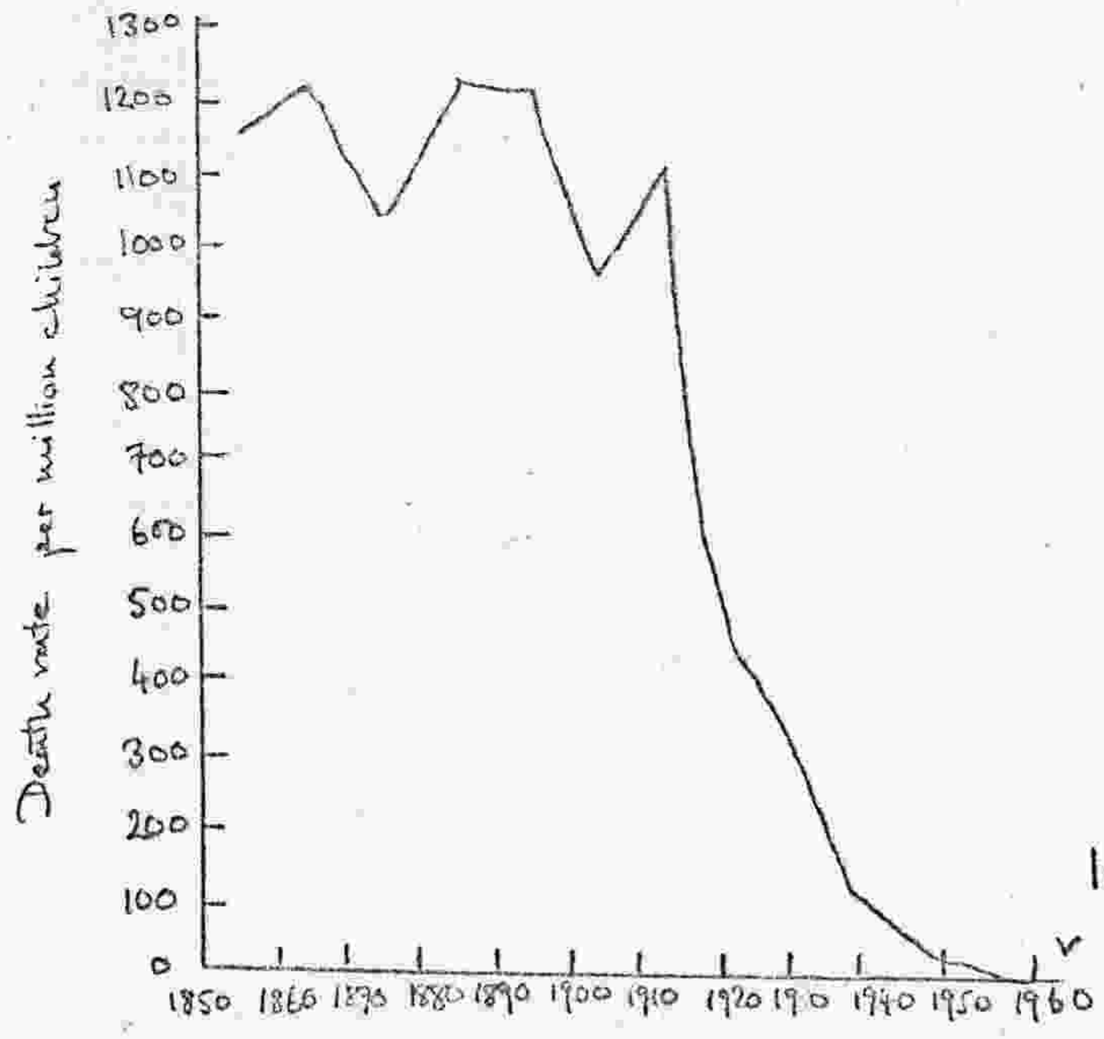


FIG. 14:
MEASLES DEATH RATES
Death rates of children under 15 years, for England and Wales.
Source: McKeown, p. 96

FIG 15 : DEATHS from MEASLES in CAMBERWELL and NEWINGTO 1857 - 1899

— Camberwell
— Newington

200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

1857 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 1899

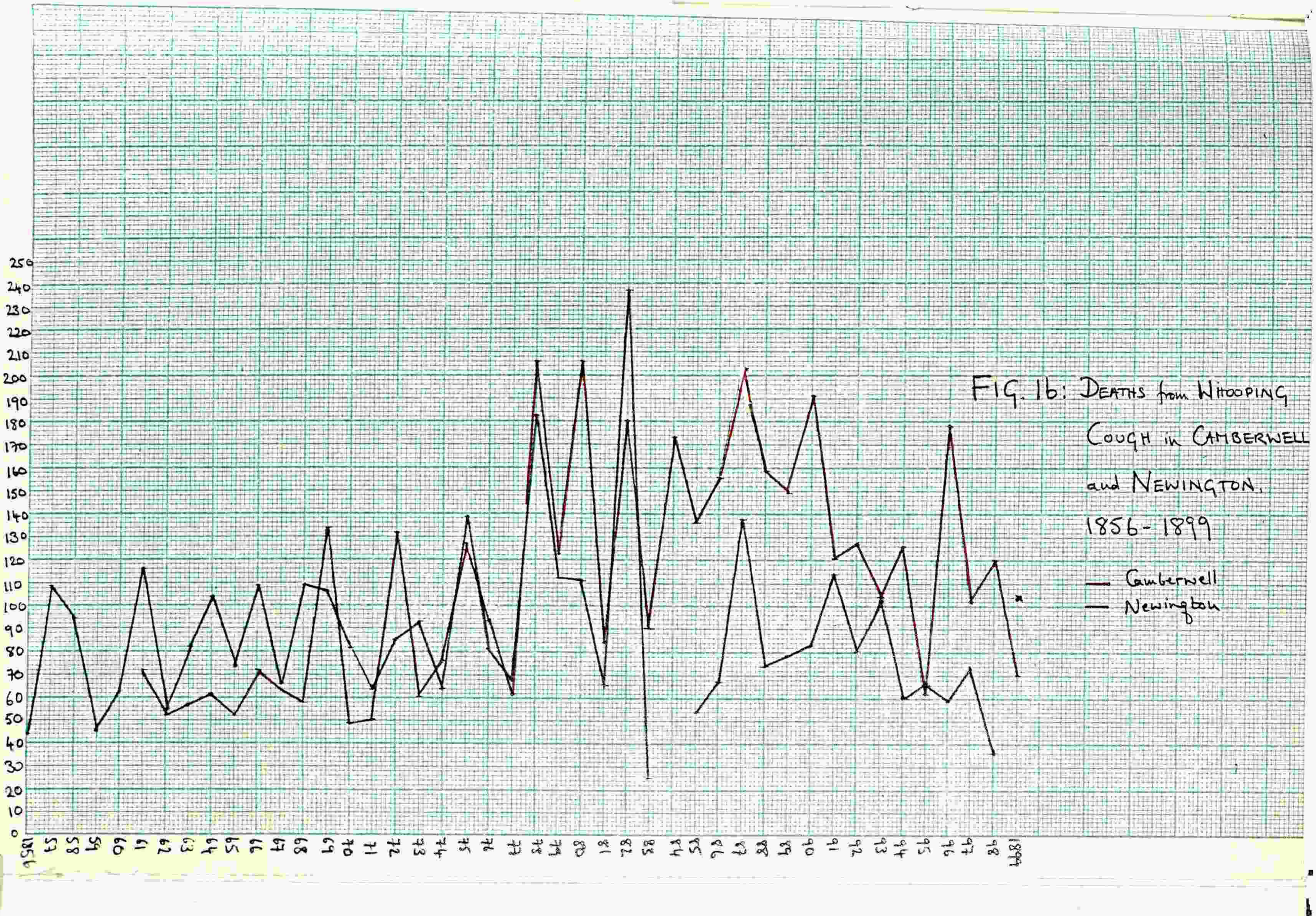


FIG. 16: DEATHS from WHOOPING COUGH in CAMBERWELL and NEWINGTON, 1856-1899

Thousands of Pounds.

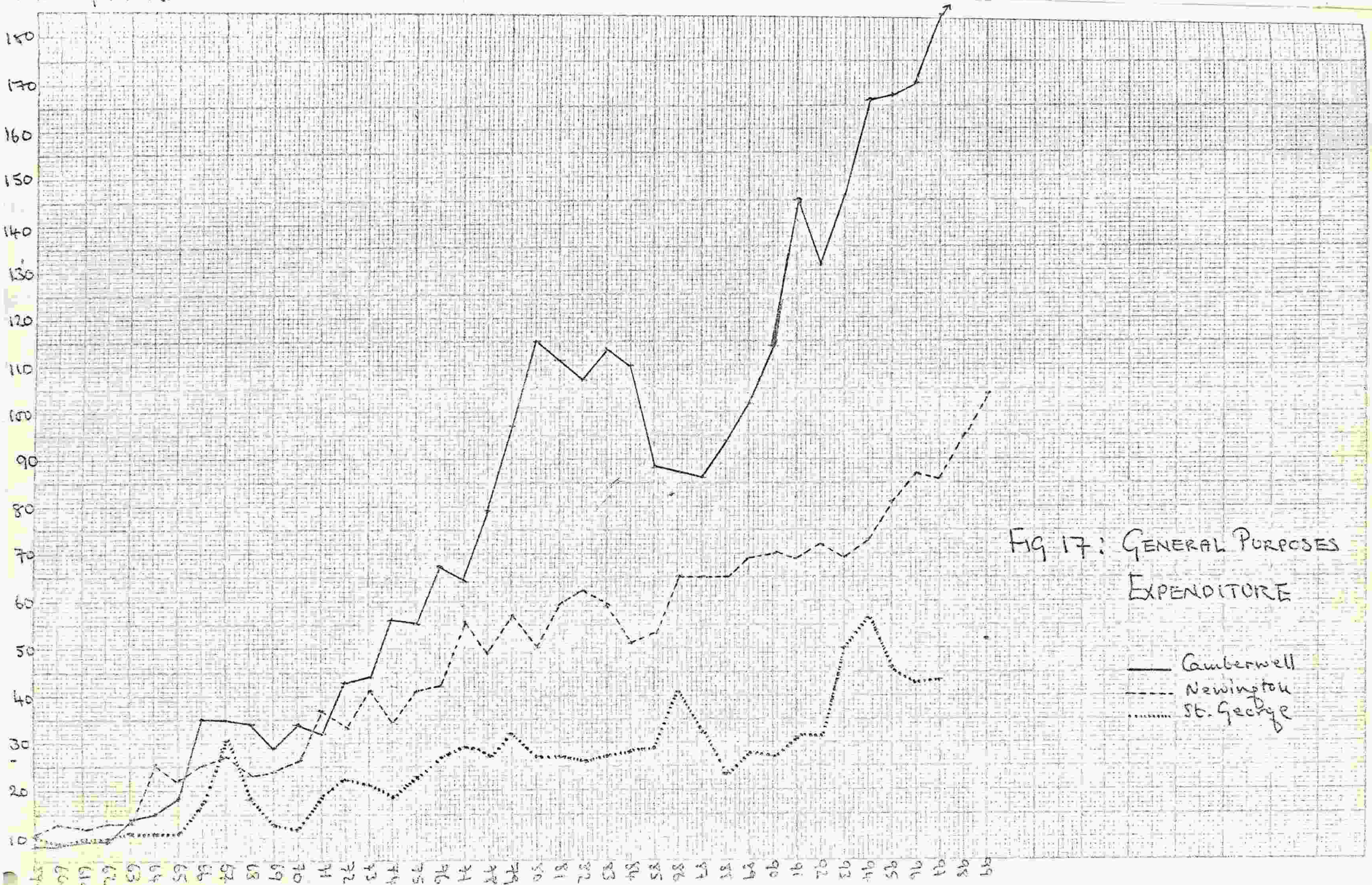


Fig 17: General Purposes Expenditure

£
900
800
700
600
500
400
300
200
100

1875 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95

Fig 18: SANITARY EXPENDITURE IN ST. GEORGE'S PARISH 1875 - 1895.

—— Sanitary Expenses

---- Expenses of Infectious Diseases Notification Act.