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# EXTRACTS

FROM THE ANNUAL REPORT FOR 1886

# OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD.

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## DISTRIBUTION OF

# SMALL-POX IN THE METROPOLIS

DURING SUCCESSIVE PERIODS OF THE DECENNIUM 1876–85:

**With a Report on Small-pox in West Ham during 1884–85.**



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## Extract from Report of Medical Officer for 1886.

MEDICAL OFFICER'S REPORT.

### SMALL-POX IN THE METROPOLIS.

* * * * *

Small-pox in the Metropolis.

Last year, when commenting on the small-pox experience of London, I was content to appeal to the reports of local officers of health for evidence that Fulham Hospital experience was nowise peculiar, and to the reports and returns of the Registrar-General for evidence of the specialities of metropolitan incidence. But it now becomes plain that the further and more complete information which, with Mr. Power's help, I have been able to accumulate, respecting the behaviour of small-pox in the districts of the metropolis in its relations to small-pox hospitals, should be given. Accordingly I place in an appendix to this report (No. 1) a series of chapters written by Mr. Power upon the experience of London registration districts since 1875. The record is necessarily given in summary, but it is based on weekly and fortnightly records of the Registrar-General and of the Metropolitan Asylums Board, and the material for the summaries is accessible to anyone who cares to consult those public documents. Mr. Power's chapters analyse these returns and reports, always with regard to the natural history of small-pox, its epidemic cycles, its periods of growth, culmination, and decline. Based upon the experience of artificial districts, they do not affect to give indications having the precision that was attained by his personal investigations about Fulham Hospital. But they need only to be studied by the light of the Fulham experiences to give a presumption (apart from any afforded by local health officers' reports) that those experiences of Fulham have been repeated at Hampstead, at Homerton, at Stockwell, and at Deptford, at each epidemic period; a presumption, namely, that small-pox infection has habitually been distributed from each of those hospitals over considerable areas, most conspicuously at the commencement of epidemic periods; with a further presumption that this distribution has greatly influenced the small-pox mortality of whole registration districts; while incidental illustrations are not wanting of peculiar excess in the incidence of small-pox upon portions of districts nearest to the several hospitals. As regards the method of dispersion, Mr. Power (without considering it in terms) supplies me with reason for believing that to whatever degree limitations in number of patients, and improvements in administration and in ambulance service, may have operated to reduce the danger of small-pox hospitals to their neighbourhoods, these changes have

Confirmation of Fulham experiences as applying to other districts.

Hypothesis of atmospheric convection wanted for London generally.

had but a partial result;* and a hypothesis of atmospheric convection over considerable distances is wanted, not for Fulham alone, but for London generally, in order to explain the observed behaviour of small-pox in the several districts of the metropolis.

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Small-pox at West Ham;

Small-pox at West Ham, a district just outside the borders of the metropolis, may conveniently be mentioned under the present heading. A report (App. No. 2) on the behaviour of small-pox in this urban sanitary district during the epidemic of 1884–85, is found to repeat the metropolitan experience of small-pox. The disease was fatal to an exceptional degree in the neighbourhood of the West Ham hospitals, and it was in noteworthy measure under the control of season. At a circle of three-quarters of a mile round the guardians' hospital (that first established) the part known as Plaistow ends, and a comparatively uninhabited zone separates that part from Canning Town and Victoria Dock district on the south-west and south, and from the populations of the towns of Stratford and West Ham on the north and north-west; all within the West Ham Urban Sanitary District. Stray cases of small-pox brought into this guardians' hospital from remoter parts (few, if any, from Plaistow in the first instance) were speedily followed by a tenfold death-rate upon the houses of Plaistow as compared with the houses of other parts. After a while the difference was less marked, but at the ordinary time of seasonal rise of small-pox (a new hospital close by having meanwhile been opened for the reception of metropolitan small-pox cases) the disease renewed its excessive mortality on the Plaistow neighbourhood, at this time being very fatal also in the more distant parts of the West Ham Urban Sanitary District. Afterwards, until the close of the epidemic, which lasted through a total period of 20 months, there was much less difference to be seen between the small-pox death-rate of Plaistow and of more distant parts. During the whole epidemic period the mortality from small-pox in the part of Plaistow in the West Ham Urban Sanitary District nearest to the hospitals reached the extravagant figure of 6·4 per 1,000 and in the parts beyond it was no less than 3·4 per 1,000 of the population; the circumstances of the people appearing to be alike, with the one exception of the hospitals placed at Plaistow.

and at East Ham.

Portions of the three-quarter-mile circle round the Plaistow hospitals are situated, not in West Ham Urban Sanitary District which formed the subject of inquiry by your Board, but in the area of the East Ham Urban Sanitary District. There are tw

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* Further time is wanted to show how far the duration of a small-pox epidemic in London may be affected by the new plan of taking down to Long Reach every case of small-pox that can possibly be removed out of London. This point, however, is not here in question.

clusters of population so situated, viz., one named the Boleyn Estate, the other in the neighbourhood of Plashet Park. The Medical Officer of Health, reporting on small-pox in the East Ham district during the 18 months, Midsummer 1884 to Christmas 1885, has the following passage:—"It will be observed that "a very high proportion of the cases occurred on the Boleyn "Estate in comparison with the rest of the district. The population of that estate is 1,661 and the number of cases there "during the 18 months was 125, or 1 in every 13 of the inhabi-"tants; whereas in the rest of the district, with a population of "13,329, there were 263 cases, or 1 in every 50 of the inhabi-"tants. The district most severely visited excepting the Boleyn "Estate was the adjacent one lying between the London, Tilbury, "and Southend Railway and Plashet Park, where there was a "case of small-pox among every 25 inhabitants."

GEORGE BUCHANAN.

August 1887.

# APPENDIX.

## No. 1.

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

STATISTICS of SMALL-POX INCIDENCE upon the REGISTRATION DISTRICTS of LONDON, relatively to the OPERATIONS of SMALL-POX HOSPITALS in the METROPOLIS; in a succession of Chapters; by MR. W. H. POWER.

### I.—INTRODUCTORY.

SINCE the Medical Department began, in January 1881, the investigation of the influence of Fulham Small-pox Hospital upon its neighbourhood, I have, by the Medical Officer's desire, obtained from such sources as were at my disposal, a quantity of information, statistical and other, respecting the behaviour of small-pox in London from 1876 to 1885 inclusive, and have embodied this information in certain notes and memoranda which have been frequently used within the Department. I now submit abstracts of the whole of these notes and memoranda for the Board's information.

In 1881 our object was to ascertain broadly how far the experience of other London districts containing, or situated near to, small-pox hospitals might or might not be in general accord with the indications which seemed to be arising from Fulham. The year 1875 was selected as the starting point of inquiry about the behaviour of small-pox, because it was then that zero of small-pox seemed to be reached in London, after the great epidemic of 1871. In the interval between these two dates three small-pox hospitals had been established in the metropolis and erection of other two had been decided on.

I had in 1881 begun examination of the fortnightly returns of the Asylums Board and of reports of the Registrar-General, with such other public documents (Health Officers' reports and the like) as were available on the subject, when the appointment of the Royal Commission on Hospitals promised to supersede my labours. That Commission would, I then assumed, of necessity address itself to the very task I had undertaken; while I was not sorry to relinquish it, since the details promised to be multitudinous, and the time at my disposal for formulating and studying them was limited. But when in 1882 the report of the Commission came to be issued, its indications as to the influence of London small-pox hospitals upon their neighbourhoods were found in some respects not sufficiently definite for the Medical Officer's purposes; and accordingly by his wish I resumed my study of the subject, and now present the following account of London experiences.

### II.—METHOD OF REPORT.

My examination of the subject makes no professions to absolute accuracy. Nevertheless it has been no light labour, since the details to be examined have comprised the facts fortnight by fortnight for ten years respecting the incidence of small-pox on each separate district of

the metropolis, and the facts, also fortnight by fortnight for ten years as to the activity of each of the several small-pox hospitals of the Asylums Board. And for the reason that it has been done in the main out of office hours it has occupied a great deal of time, notwithstanding that in its later stages I have had help from Mr. Mulcahy, whose previous employment on kindred matters has especially fitted him for work of this sort.* In the result there has been got together a vast mass of evidence complex in character and requiring for its understanding an orderly examination of a variety of correlated facts during successive periods. It is not a little difficult to exhibit this study in a form that shall be at once concise and intelligible.

It is of the essence of such a record that it should deal with short periods, and therefore with numerous periods. And it is not enough to write a continuous history of small-pox in London and afterwards a continuous account of the operations of the small-pox hospitals; for the things need to be presented side by side to the apprehension of the person who wants to get at the facts. So that in what follow the facts as to each of the eleven periods are put together that the reader may see the relations between several things within each several period. Again, it is of the essence of such record that the periods in question should be selected, not as such-and-such calendar years or groups of years out of the ten years examined, but as representing, each of them, a set of phases such as we know to belong to small-pox prevalence, the chosen period to include an observed increase, culmination, and decline. In London these periods are largely determined by seasonal influences, and so often is September a time of minimum small-pox prevalence in London, that a twelvemonth, September to September, is commonly very well adapted to the purpose of including the three phases in their due order. The degree of rise, the actual height of culmination, and the rapidity of decrease will be different in one year and another according to something which at present we can only regard as inherent in the current small-pox.† But as in the lighter, so in the severer, incidences of small-pox upon London, the same three phases are almost invariably witnessed within a twelve-

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* Mr. Mulcahy is a writer whose services are placed at the disposal of the Medical Department for recording the certification as to vaccination or non-vaccination in fatal cases of small-pox in London, and for allied statistical duty.

† In my report for 1884 on "the Influence of Fulham Hospital on the neighbour-"hood surrounding it," I have, in reference to recognition there of a "dominant "influence affecting the very life of small-pox itself," written us follows :—

"For some similar influences bound up with the life of small-pox cannot but have been suggested by the observed different ability of the disease at one and another time to communicate itself within doors to persons (under equal conditions of vaccination in the individuals), living in close and sustained relation with it; and again by the behaviour in London of small-pox, which after having attained by midsummer in certain years an epidemicity measurable by many hundreds of attacks per week, affording a totality of infectiousness capable, seemingly, of producing indefinite further increase of this disease, yet has as often declined suddenly, almost to extinction, only to rise again by slower degrees to fresh epidemicity in another winter season. . . . Questions are seen to be arising as to how far at Fulham the dominant influence now indicated, if it be natural to and inseparable from the life of small-pox, is, or is not, an affair within the ability of any hospital administration to control."

month, and accordingly September to September is the period commonly investigated in the following pages. Only in the beginning of the series has a twelvemonth period been subdivided for the purpose of showing precedence in time of one and another district or groups of districts in their manifestations of epidemic small-pox. In the chapters which follow, these several periods, whether they be twelvemonthly or less, are distinguished in each instance by a particular letter of the alphabet, and what I have to say about each period is put together under that letter, so that for each period, A, B, C, &c., there will be found as follows :—

(1.) A *general statement* as to behaviour of small-pox and as to use of M. A. B.* small-pox hospitals in the period :—such statement occupies a single left-hand page.

(2.) On the opposite page a *table* for the same period showing the *small-pox death-rates* of the several London districts, with other particulars about the district-relations of each hospital and the use made of it. In this table and in notes upon it any requisite mention will be made of antecedent small-pox mortality in the several districts and of antecedent use of hospitals.

(3.) *More specific statement* of the facts as to use of M. A. B. hospitals in the period, together with such information as was to be had respecting the ATTACKS of small-pox in the several districts containing hospitals or near to hospitals. This statement, again, occupies a left-hand page, and occasionally part or whole of subsequent pages.

(4.) Next, on a right-hand page, follows a *chart* of the metropolitan districts, showing the *rate of small-pox attack* so far as known in each district, and indicating also the situation of the several metropolitan districts and small-pox hospitals.

(5.) And lastly, *comments* in summary *on the facts* illustrated by the table and chart of the period, in reference to similar data of antecedent periods :—such comments occupying a further right hand page.

And this order is adhered to in each of the chapters relating to the periods examined.

In minor respects, the data to be used in the above fashion are not free from imperfections and shortcomings. Some of these might perhaps have been avoided, but others were unavoidable, and that being so, it was not worth while to incur enormous labour in order to obtain an ideal exactness of the rest. For the purpose of these abstracts these imperfections and shortcomings can be of no real importance, but I subjoin a memorandum of their nature :—

(*a.*) The district rates to be commented on are not perfectly exact ; they have all been taken on the census populations of 1881.

(*b.*) The actual *mortality* from small-pox in each period, up to and inclusive of 1880, among persons belonging to each of the several metropolitan districts, has had to be ascertained in a somewhat roundabout

* In this paper the letters "M. A. B." stand for "Metropolitan Asylums Board."

fashion, and, as a consequence, these data are not absolutely correct. This has been due to the fact that we have no official returns giving the desired numerical information as to the parishes from which persons registered as dying in hospital have been removed. The process adopted, therefore, has been this :—For each period up to and inclusive of 1880, persons recorded in the fortnightly returns of the M. A. B. as having died of small-pox in the Board's hospitals have been classified according to the districts from which they had come, and the figures thus obtained have, in the case of districts *not containing* M. A. B. small-pox hospitals, been added to the small-pox deaths recorded by the Registrar-General as having been *registered* therein during the period. Similarly, as regards districts *containing* M. A. B. small-pox hospitals, deaths of persons dying in hospital *but not* (as ascertained from the M. A. B. fortnightly returns) previously *resident in the district of the hospital*, have been subtracted from the *registered* small-pox deaths of the district in the period recorded by the Registrar-General. It must not be supposed that there is any error of magnitude attaching to this process.

(*c.*) In one other respect the mortality data of 1876–80 are somewhat imperfect: they leave out of account certain small-pox deaths which occurred in the Highgate (private) "Small-pox and Vaccination" Hospital. These have not been separable in all the periods dealt with from the Islington small-pox deaths proper, for the reason that no record was available of the places from which the patients were brought, and because the reports of the Registrar-General do not for less periods than calendar years distinguish deaths in hospital from deaths in the houses of a district. Probably the greatest drawback hence arising is the uncertainty respecting small-pox deaths belonging to Islington in the five years 1876–80.*

Upon the whole, notwithstanding such admitted imperfections as the above, rates of mortality exhibited in the following tables may be regarded as free from any such error as could interfere with their primary purpose, namely, comparison of one district with another in the *same* period, and of each district with itself in periods closely antecedent and subsequent to any given period. Indeed, due regard being had to the circumstance that rates antecedent to 1881 are for the most part lower, and rates subsequent to that date higher, than the actual rates, much wider comparisons may be instituted with a fair measure of accuracy.

Since 1880, however, the chief of the above drawbacks have been got rid of; the mortality data having been gleaned from that register of metropolitan small-pox deaths which is kept for the purposes of the Medical Department by Mr. Mulcahy, under the superintendence of Dr. Stevens.

Next as regards *attacks* recorded in these pages:—(*d.*) Small-pox attacks in the several periods refer solely to the cases coming under treatment in the M. A. B. hospitals. Accordingly they represent the actual facts as to district small-pox prevalences much less accurately han do the deaths from small-pox; and inasmuch as the districts nave in all probability differed a good deal, inter se, in the proportion of their small-pox cases which they have sent to hospital, the reader is specially warned against over-confident reliance upon these *attack*-rates, as representing exactly comparable amounts of small-pox, or as affording a basis for any inference respecting different fatality in persons brought from one and another district. Again, within the same district, the ratio of hospital cases to total mortality has probably often altered as time has gone on, and an increasing proportion of the total small-pox has found its way into hospital. Nevertheless *rates of attack* based on the data that have been forthcoming are of considerable value; first, as they serve to confirm or throw doubt on the independent evidence of the death-rates while one district is being compared with another during the same period; secondly, when observation is being made for any given district of the changing behaviour of small-pox within it during periods not far removed

* The small-pox death-rates therefore for Islington, in Tables A. 2 to F. 2, take account only of Islington small-pox deaths occurring in M. A. B. hospitals, and are less than the actual rates. In Tables G. 2 to L. 2, however, *all* Islington small-pox deaths are dealt with.

from one another. Thirdly, and especially, these attack-rates are of signal value as affording evidence (not indeed absolutely accurate, but as trustworthy as that which regulates the common affairs of mankind) respecting the growing and waning of small-pox in one and another district.

(*e.*) Hospital operations have not been found capable of representation with absolute accuracy. So far as the M. A. B. hospitals are concerned, this has arisen from the circumstance that in former years the Asylums Board commonly adjourned for two months each autumn, and that during its adjournments no returns of hospital operations were issued, but instead a "two-months" return was presented at the next subsequent early winter assembly of the Managers. As it has happened, these adjournments have included the month of September, and as a consequence the number of admissions comprised in "the two-months return," which belonged to one and another separate period ending or beginning in September, cannot be accurately stated. It is for this reason that M. A. B. hospital operations are represented in these abstracts for the most part by round numbers, but the slight inaccuracies thus arising may be altogether disregarded.

(*f.*) The absence, already referred to, of data up to 1881 respecting the Highgate Small-pox and Vaccination Hospital is a more regrettable circumstance, and it might have seriously compromised the data about *attack* had the operations of this hospital been greater than they were, and its situation in London other than it is. The hospital is placed on the extreme northern border of the metropolis, and at the very edge of an extensive parish (Islington), of which the most populous parts are away from the hospital. It is supported by voluntary contributions, and by payments from its patients. Formerly, *i.e.*, before establishment of the Asylums Board, it not only served as a small-pox hospital for Londoners, but also for persons resident outside the metropolis, and in epidemic years several hundred deaths took place in it. Now it contains no more than 100 beds, and except in times of epidemic small-pox its services are in no great demand.* The parts of the metropolis most likely to be unfavourably influenced by it are northern Islington and northern St. Pancras.

## III.—Earlier Experiences of London Small-pox.

Before closing these prefatory notes, there is one circumstance of some importance that should always be borne in mind by the reader of the abstracts and memoranda which follow. It is the circumstance that in years antecedent to establishment of the M. A. B. hospitals, metropolitan districts differed intrinsically in their ability to suffer small-pox. For instance, in the ten years 1861–70 the annual small-pox death-rate of districts in the Eastern group of the Registrar-General was in no case less than 32, and in two instances was above 40 per 100,000 population, whereas in no district of the Central or Southern groups did the rate reach 30 per 100,000, and in some it was not 20 per 100,000. In the West group the average rates of the districts were less than 20, while best and lowest in rank as to incidence of fatal small-pox (Islington always being put aside, for the reason above stated) stood the Northern group, the very best district being Hampstead, which had an annual rate of only 5·4 per 100,000 in the ten years 1861–70. For convenience of reference the subjoined preliminary table is added, showing, as near as may be, the order of the metropolitan districts, as regards small-pox mortality in the ten years referred to. This table is,

* The facts as to its operations in the five years 1880–84 have been obtained from the Report for 1884 of Mr. Shirley Murphy, the late Medical Officer of Health of St. Pancras.

with slight modification, that submitted by Surgeon-General Bostock, C.B., to the Hospitals Commission,* as showing the distribution of small-pox in London before M. A. B. hospitals were established. It permits only the very broadest comparisons, since the metropolitan districts of 1861–70 are not in every case identical with those of 1876–85; and also for the reason that in 1861–70 some 1,500 small-pox deaths (or about one fifth of the total small-pox deaths of London) which occurred in the Highgate Hospital cannot now be assigned to the various districts, metropolitan and other, whence they were brought (as patients) to the hospital. But with these necessary reservations the table sufficiently well serves Mr. Bostock's purpose and my own. A chart, showing the boundaries in 1876–85 of the Metropolitan Districts and Groups of Districts, has been made to face the preliminary table.

With this preface I now invite study of the behaviour of small-pox in London during the 11 (A. to L.) periods between 1875 and 1886.

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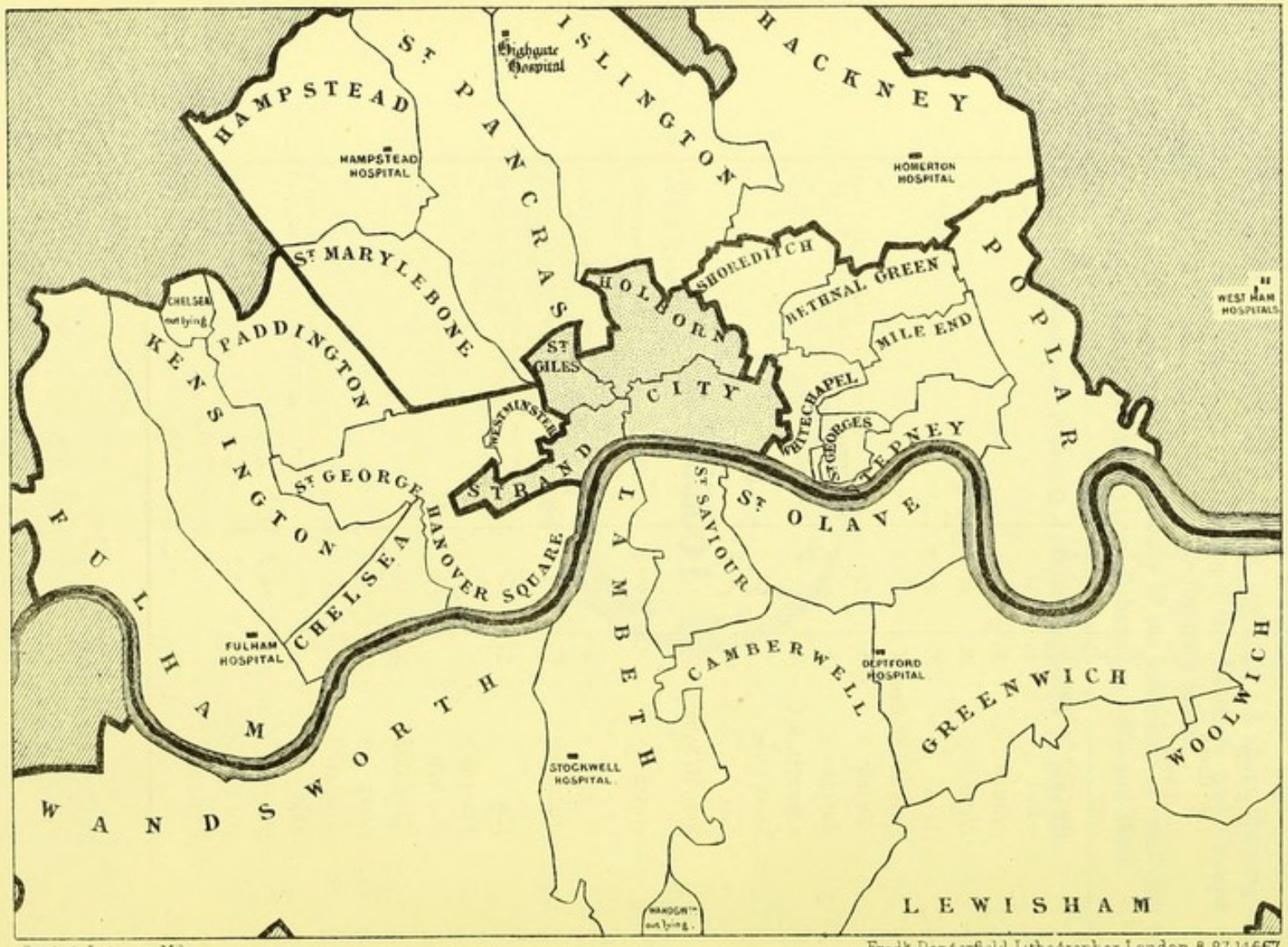
* Commissioners' Report, Q. 1269, and Appendix D., page 337.

## BOUNDARIES, IN 1876–85, OF METROPOLITAN DISTRICTS AND GROUPS OF DISTRICTS.




Scale ½ Inch to a Mile. Fred^k Danserfield Lithographer London 8 87 14667

*The groups of East, West, North, South, here have boundaries shown by thicker lines. The Central group is indicated by stippling. Extra metropolitan area is shown by shading.*

To face p. 7.

PRELIMINARY TABLE showing the AVERAGE ANNUAL RATE of SMALL-POX MORTALITY for the Decennium 1861–70 in each of the METROPOLITAN DISTRICTS. (See page 56.)

| Rank. (Worst to Best.) | Metropolitan Districts. | | 1861–70. Annual Rate of Small-pox Mortality per 100,000. | Remarks. |
|---|---|---|---|---|
| ? | *ISLINGTON* | N. | *98·0* | All the small-pox deaths in these ten years in the *Highgate Hospital* are credited to Islington. Highgate Small-pox and Vaccination Hospital was receiving patients from all parts of London: only about ⅓ of the small-pox deaths registered in Islington occurred in the houses of the parish. |
| 2nd | Bethnal Green | E. | *46·8* | |
| 3rd | Whitechapel | E. | *40·5* | |
| 4th | Poplar | E. | *39·6* | |
| 5th | Stepney | E. | *37·4* | |
| 6th | St. George's-in-East | E. | *34·2* | |
| 7th | Mile End | E. | *33·3* | |
| 8th | Shoreditch | E. | *32·9* | |
| 9th | St. Olave | E. | *27·9* | |
| 10th | Holborn | C. | *26·3* | |
| 11th | St. Giles and St. Geo. | C. | *26·1* | |
| 12th | Greenwich | S. | *24·4* | In 1861–70 Greenwich included also part of what is now the Woolwich district. |
| 13th | St. Saviour | S. | *23·6* | |
| 14th | Wandsworth & C. | S. | *22·2* | |
| 15th | Lambeth | S. | *21·8* | |
| 16th | Chelsea | W. | *21·2* | |
| 17th | St. Geo., H. Square | W. | *19·6* | St. Margaret, Westminster, included herewith since 1861–70:—the 19·6 is the mean of two rates. |
| 18th | Woolwich | S. | *18·2* | Included in 1861–70 partly in Greenwich, partly in Lewisham.—18·2 mean of the rates of these districts. |
| 19th | City | C. | *17·7* | Distinct in 1861–70 from East and from West London: 17·7 mean of 3 rates. |
| 20th | Westminster | W. | *14·9* | Westminster St. James, and Strand in 1861–70. Existing Westminster is Westminster St. James. |
| 20th | Strand | C. | *14·9* | Merged in 1861–70 in Westminster St. James. |
| 22nd | St. Pancras | N. | *14·7* | |
| 23rd | Camberwell | S. | *14·4* | |
| 24th | St. Marylebone | N. | *14·1* | |
| 25th | Hackney | N. | *14·0* | |
| 26th | Kensington | W. | *12·6* | In 1861–70 these constituted a single district; now they are distinct and separate. |
| 26th | Fulham | W. | *12·6* | |
| 26th | Paddington | W. | *12·6* | |
| 29th | Lewisham | S. | *12·3* | |
| 30th | Hampstead | N. | *5·4* | |

## A 1. A. Period: January to end of August 1876.

(8 *months comprising the beginnings of an Epidemic of Small-pox in London.*)

Towards the end of 1875 small-pox had become all but extinct in the metropolis. For four months, September to December inclusive, of that year not a single case of the disease was admitted to the hospitals of the Asylums Board; and during the last quarter of 1875 six deaths only from small-pox were registered in all London.

In 1876 the disease began to increase again, but except in the South group of registration districts, did not become seriously prevalent until autumn. For the South group, the rate, 5·8 per 100,000, of small-pox mortality in the A. period was nearly eight times greater than that of any other group.

During the whole of the eight months, January to end of August 1876, *Stockwell* Hospital alone of all the M. A. B. hospitals was receiving small-pox cases. *Homerton* Hospital did as matter of fact receive a couple of small-pox cases in June, and a larger but uncertain number at the end of August. Any influence, however, exerted by *Homerton* through these latter operations, could not have been witnessed before September.

*Stockwell Hospital* is in Lambeth and *Homerton Hospital* in Hackney.

Table A. annexed, giving the rates of small-pox mortality for the period in the several metropolitan districts, shows beginning of the epidemic not so much in East districts specially prone to the disease, as in districts South of the Thames, particularly in Lambeth (containing *Stockwell* Hospital) and in districts adjacent to Lambeth. The facts are further illustrated by the Chart A. (facing page 10), which gives the small-pox *attack*-rates for the several districts, and shows the relations of the districts to each other and to the M. A. B. hospitals.

**A 2.**

## A. Period: January to end of August 1876.

(8 *months comprising the beginnings of an Epidemic of Small-pox in London.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality according to District whence each Case was brought), and with Note of Local Relations of M. A. B. Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those now or subsequently containing Small-pox Hospitals in Caps.

| Districts. | A. January to end of August 1876. | Local Relations in A. Period with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in A. Period. |
|---|---|---|---|
| **LAMBETH** - - S. | *16·6* | CONTAINING STOCKWELL M. A. B. HOSPITAL - | 250 (*100·0*) |
| **Wandsworth and C.** S. | *5·2* | Stockwell, ¾ E. | |
| **Stepney** - - - E. | *5·1* | | |
| **Camberwell** - - S. | *3·8* | Stockwell, ¾ W. | |
| **St. Saviour** - - S. | *3·5* | Stockwell, 1½ S. | |
| **Chelsea** - - - W. | *3·4* | Stockwell, 1¾ S.E. | |
| **St. Olave** - - - S. | *2·9* | | |
| **GREENWICH** - - S. | *2·3* | (DEPTFORD M. A. B. HOSPITAL NOT YET ESTABLISHED.) | — |
| **Kensington** - - W. | *1·2* | | |
| **Holborn** - - - C. | *0·7* | | |
| **St. Pancras** - - N. | *0·4* | Highgate H. on N.E. edge. | |
| **St. Geo., H. Square** W. | — | Stockwell, 1½ S.E. | |
| **Westminster** - - W. | — | | |
| **St. Giles and St. Geo.** C. | — | | |
| **Strand** - - - C. | — | | |
| **City** - - - - C. | — | | |
| **Woolwich** - - - S. | — | | |
| **Lewisham** - - - S. | — | | |
| **Shoreditch** - - E. | — | | |
| **Bethnal Green** - - E. | — | | |
| **Whitechapel** - - E. | — | | |
| **St. George's-in-East** E. | — | | |
| **Mile End** - - - E. | — | | |
| **Poplar** - - - E. | — | | |
| **St. Marylebone** - N. | — | | |
| *ISLINGTON** - - N. | — | (*Highgate Small-pox Hospital herein*) - - - | ? |
| **Paddington** - - W. | — | | |
| **FULHAM** - - - W. | — | (FULHAM M. A. B. HOSPITAL NOT YET ESTABLISHED.) | — |
| **HAMPSTEAD** - - N. | — | (HAMPSTEAD M. A. B. HOSPITAL HEREIN NOT IN USE FOR SMALL-POX.) | — |
| **HACKNEY** - - N. | — | (HOMERTON M. A. B. HOSPITAL HEREIN NOT IN USE TILL END OF PERIOD.) | †— |

* See footnote to page 4.

† Homerton Hospital did admit some small-pox cases in the last fortnight of August 1876. The number of them is uncertain as they have been included in a "two-months return" made in the beginning of October.

## A 3.

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

### A. Period: January to end of August 1876.

(8 months comprising the beginnings of an Epidemic of Small-pox in London.)

*Operations of M. A. B. Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *upon inhabitants of certain Districts.*

*Stockwell Small-pox Hospital.*—Early in 1876 the operations of this hospital were comparatively insignificant. Not until June did it receive in any one fortnight more than 14 cases, and in this month the number of patients in hospital for the first time reached 30. In all in this A. period Stockwell Hospital received about 250 small-pox patients. Fortnightly admissions up to June averaged 5; from June to August they averaged 35. [*Homerton Hospital* though prepared to receive small-pox, did not commence operations until the last fortnight of August.]

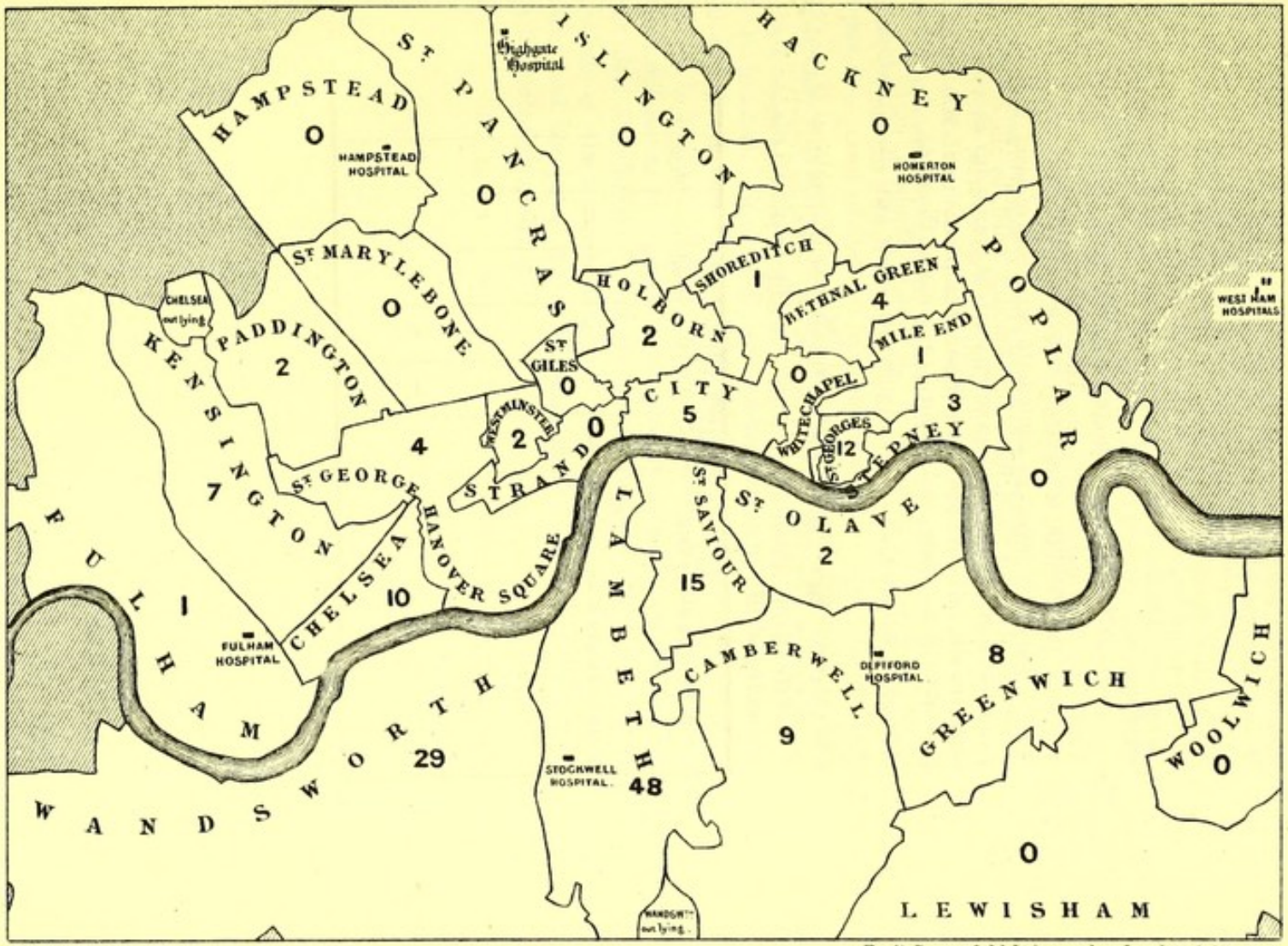
*Lambeth.*—The two first admissions of 1876 to Stockwell Hospital were from Greenwich and St. Saviour. The third was from Lambeth, the district in which this hospital is situated. Very soon, namely, in February and March, Lambeth began to contribute an excess of cases to hospital, and it continued doing so in increasing amount, until, by the end of August, Lambeth, with the districts adjoining it (Wandsworth, St. Saviour, and Camberwell), had supplied some 78 per cent. of the total M. A. B. small-pox admissions from all London (see annexed Chart A). Some facts as to the *localization* of small-pox at this time in Lambeth, derived from the evidence given by Mr. Farr (Medical Officer of Health for Lambeth) before the Hospitals Commission, are appended in a tabular form:—

*Table showing for Lambeth Parish the Number of Small-pox Cases (Private as well as Hospital Cases) coming under notice as occurring in houses of the several Wards of the District in each of the eight months, January to August* 1876.

| Wards of Lambeth, 1876. | Jan. | Feb. | Mar. | April. | May. | June. | July. | Aug. | Totals. |
|---|---|---|---|---|---|---|---|---|---|
| North and South Marsh (*Population, 1881=41,670.*) | — | — | 1 | — | — | 2 | 1 | — | 4 |
| Bishop and Princes (*Population, 1881=62,367.*) | — | 1 | 1 | 3 | — | 1 | 9 | 5 | 20 |
| Vauxhall and Stockwell (containing Hospital). (*Population, 1881=77,853.*) | — | 2 | 5 | — | 1 | 26 | 16 | 15 | 65 |
| Brixton and Norwood (adjacent to Stockwell). (*Population, 1881=71,849.*) | — | — | — | 2 | 14 | 3 | 6 | 10 | 35 |

## A. PERIOD: JANUARY, TO END OF AUGUST, 1876.

*Smallpox Attacks per 100,000 population in each area referred to.*




| Smallpox Hospitals and their Operations. Period A. | | |
|---|---|---|
| Name of MAB Hospital. | Acute Smallpox Admissions to each | |
| | Number | Per cent |
| Stockwell | 250 | 100 |
| Homerton | Not in use | |
| Hampstead | " | " " |
| Deptford | " | " " |
| Fulham | " | " " |

[Highgate ?]

Scale ½ Inch to a Mile

Fredk Dangerfield Lithographer London 8.87 14667.

A4.

To face p 10

## A. Period: January to end of August 1876.

(*Notes as to beginning of the Small-pox epidemic.*)

The indications of Table A. and Chart A. are generally to the same effect. Small-pox was in the period of January to end of August 1876 becoming epidemic in more than one quarter of the metropolis. But the growing epidemic was specially vigorous in Lambeth and adjoining districts; in the neighbourhood, that is, of the single M. A. B. hospital receiving small-pox.

Incidentally it is shown on comparison of the figures of the table and map that certain districts could not have been making much use of the M. A. B. hospital. Stepney E., for instance, which had in the A. period a small-pox death-rate of 5 per 100,000, sent only 3 per 100,000 of its inhabitants to hospital. The death-rates therefore of this period better represent differences of degree of small-pox prevalence in one and another district than *attack*-rates. But the death-rates and attack-rates show that whatever the intrinsic ability of East districts to develop small-pox, they had not (as a group) so far obtained a like opportunity with South districts for indulging it.

## B 1. B. Period: End of August to 18th November 1876.

(2¾ *months in which Epidemic Small-pox rapidly increased and extended itself in London.*)

After a seasonal lull, customary with London small-pox in late summer, the epidemic underwent at the end of September 1876, and especially in October and November, rapid increase. By mid-November it had fatally affected all metropolitan districts except Strand C., Woolwich S., and Hampstead N.

In this B. period of autumnal renewed epidemicity of the disease the South group of districts was not, as in the preceding period, the chief sufferer by small-pox. This group did indeed suffer,—with a rate of 7·8 per 100,000,—a notable further increase of small-pox; but it was overtaken and surpassed, for the period, by the North group, which had a rate of 9·4 per 100,000. Next came the East and Central groups, with 4·1 and 3·9 respectively; and last the West group, with a rate of 2·2 per 100,000. To completion of this stage of the epidemic the rates of the several groups were:—

| | | |
|---|---|---|
| | N. 9·9 | |
| W. 3·0 | C. 4·2 | E. 4·6 |
| | S. 13·7 | |

In the B. period two only of the M. A. B. hospitals were receiving small-pox, namely, *Stockwell* (in Lambeth S.) and *Homerton* (in Hackney N.). Each admitted in the period some 350 cases; the fortnightly admission of both averaging about 60.

Table B. (giving for this and for the preceding period the small-pox rates of mortality of the several districts and the operations of the M. A. B. hospitals) shows, in its second column, Lambeth S. (containing *Stockwell* Hospital) pre-eminent, at this season of increasing epidemicity of the disease, for fatal small-pox, while Wandsworth S. (which adjoins Lambeth on the west) and Hackney N. (containing *Homerton* Hospital) are seen competing for second place. The position of Hackney in this period is the more notable since in the preceding (A.) period (when *Homerton* Hospital was not receiving small-pox cases) it was near the bottom of the list. Chart B. (facing page 14), giving the small-pox *attack*-rates of several districts in the period and showing their relations to each other and to the M. A. B. hospitals, is broadly corroborative of the indications above noted.

**B 2.**

## B. Period: End of August to 18th November 1876.

(2¾ *months in which Epidemic Small-pox rapidly increased and extended itself in London.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of M. A. B. Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those now or subsequently containing Small-pox Hospitals in Caps.

| A. 8 Months, January to end of August 1876. | B. 2¾ Months, end of August to 18th November 1876. | Districts. | *A. + B. 10¾ Months, January to 18th November 1876.* | Local Relations in B. Period, with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period | |
|---|---|---|---|---|---|---|
| | | | | | A. | B. |
| 16·6 | 13·4 | **LAMBETH** - - - - S. | *30·0* | CONTAINS STOCKWELL M. A. B. HOSPITAL - - - | 250 (*100·0*) | 350 (*50·0*) |
| 5·2 | 11·9 | Wandsworth & C. - - - S. | *17·1* | Stockwell, ¼ E. | | |
| — | 11·8 | **HACKNEY** - - - - N. | *11·8* | CONTAINS HOMERTON M. A. B. HOSPITAL - - - | — | (350) *50·0* |
| — | 9·8 | Whitechapel - - - - E. | *9·8* | | | |
| 3·5 | 9·7 | St. Saviour - - - - S. | *13·2* | Stockwell, 1½ S. | | |
| — | 7·8 | City - - - - - - C. | *7·8* | | | |
| — | 7·1 | Bethnal Green - - - E. | *7·1* | Homerton, 1 N. | | |
| 3·8 | 6·4 | Camberwell - - - - S. | *10·2* | Stockwell, ¾ W. | | |
| — | 6·0 | *ISLINGTON** - - - N. | *6·0* | (*Highgate Small-pox Hospital herein.*) Homerton, 1½ E. - - | ? | ? |
| 2·9 | 4·5 | St. Olave - - - - - S. | *7·4* | | | |
| — | 4·4 | St. Giles and St. George - C. | *4·4* | | | |
| — | 3·9 | Shoreditch - - - - E. | *3·9* | Homerton, 1¼ N.E. | | |
| — | 3·8 | Mile End - - - - E. | *3·8* | | | |
| 5·1 | 3·4 | Stepney - - - - - E. | *8·5* | | | |
| 0·7 | 3·3 | Holborn - - - - - C. | *4·0* | | | |
| 1·2 | 3·1 | Kensington - - - - W. | *4·3* | | | |
| — | 2·7 | St. George's, H. Square - W. | *2·7* | Stockwell, 1½ S.E. | | |
| — | 2·7 | Lewisham - - - - S. | *2·7* | | | |
| 3·4 | 2·3 | Chelsea - - - - - W. | *5·7* | Stockwell, 1¾ S.E. | | |
| — | 2·1 | Westminster - - - W. | *2·1* | | | |
| — | 2·1 | St. George's-in-East - - E. | *2·1* | | | |
| — | 1·9 | St. Marylebone - - - N. | *1·9* | | | |
| — | 1·9 | Paddington - - - - W. | *1·9* | | | |
| 0·4 | 1·3 | St. Pancras - - - - N. | *1·7* | Highgate Small-pox Hospital on N.E. edge. | | |
| — | 0·9 | **FULHAM** - - - - W. | *0·9* | (FULHAM M. A. B. HOSPITAL NOT YET ESTABLISHED) - | — | — |
| 2·3 | 0·8 | **GREENWICH** - - - S. | *3·1* | (DEPTFORD M. A. B. HOSPITAL NOT YET ESTABLISHED) - | — | — |
| — | 0·6 | Poplar - - - - - E. | *0·6* | Homerton, 1 N. | | |
| — | — | Strand - - - - - C. | — | | | |
| — | — | Woolwich - - - - S. | — | | | |
| — | — | **HAMPSTEAD** - - - N. | — | (HAMPSTEAD M. A. B. HOSPITAL NOT IN USE.) Highgate H., 1 N.E. | — | — |

* See footnote to page 4.

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

# B 3.

B. Period: End of August to 18th November 1876.

($2\frac{3}{4}$ months of rapid increase and extension of Small-pox in London.)

*Operations of Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *upon inhabitants of certain Districts.*

*Stockwell Small-pox Hospital.*—In full use throughout B. period. Admitted some 350 small-pox cases. Fortnightly admissions averaged 60: patients at one time in hospital above 100 by end of period.

*Lambeth* (containing Stockwell Hospital).—Some diminution of admissions of small-pox cases from Lambeth to M. A. B. Hospitals in September; but in October and November there was increase. In the latter month admissions became nearly fivefold greater than in September. *Attack*-rate in B. period ($2\frac{3}{4}$ months) 52 per 100,000 inhabitants:—in previous 8 months of A. period it was 48 per 100,000. Some facts respecting localization at this time of small-pox in Lambeth, derived as before from the Minutes of Evidence of the Hospitals Commission, are appended in tabular form:—

*Table showing for Lambeth Parish the Number of Small-pox Cases (Private as well as Hospital Cases) coming under notice as occurring in the houses of the several Wards of the District in each of the* 11 *months, January to November* 1876.

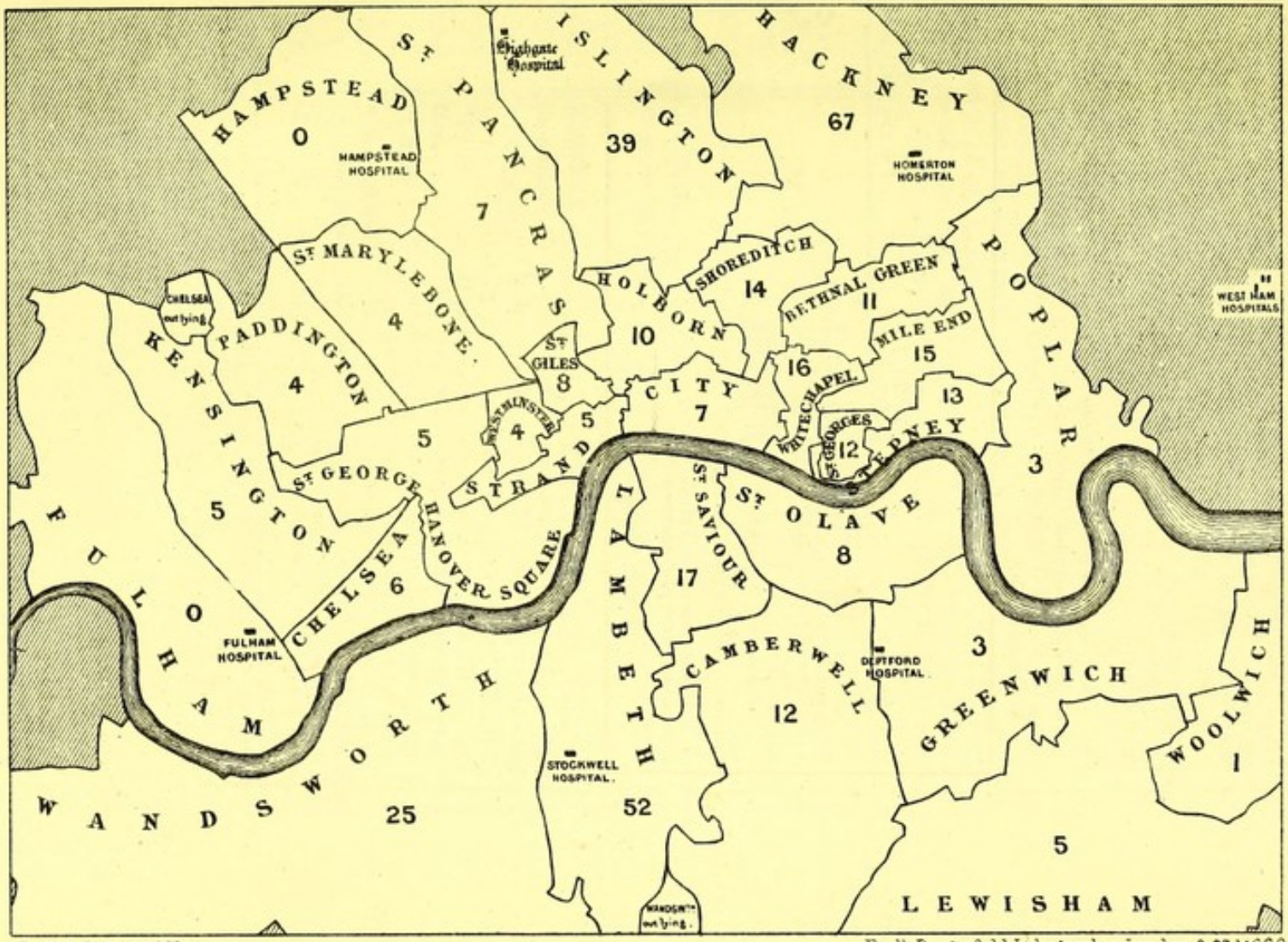
| Wards of Lambeth, 1876. | A. Period. | | | | | | | | B. Period. | | | Totals. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. | Feb. | Mar. | April. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | |
| North and South Marsh - - (*Population, 1881=41,670.*) | — | — | 1 | — | — | 2 | 1 | — | 5 | 6 | 2 | 17 |
| Bishop and Princes - - - - - (*Population, 1881=62,367.*) | — | 1 | 1 | 3 | — | 1 | 9 | 5 | 2 | 4 | 10 | 36 |
| Vauxhall and Stockwell (containing Hospital). (*Population, 1881=77,853.*) | — | 2 | 5 | — | 1 | 26 | 16 | 15 | 16 | 44 | 68 | 193 |
| Brixton and Norwood (adjacent to Stockwell). (*Population, 1881=71,849.*) | — | — | — | 2 | 14 | 3 | 6 | 10 | 6 | 8 | 32 | 81 |

*Homerton Small-pox Hospital.*—In increasing use during B. period. Admitted some 350 small-pox cases. Fortnightly admissions averaged 60: patients at one time in hospital 147 by end of the period.

*Hackney* (containing Homerton Hospital).—In the 8 months of the A. period (Homerton Hospital being closed) Hackney contributed only one case of small-pox to hospital. But as soon as Homerton Hospital began to receive small-pox cases from other districts,—and *while* the total number of patients in hospital was increasing rapidly from a small to a large figure,—M. A. B. admissions from Hackney became in five successive fortnights 3, 6, 7, 34, and 75, constituting an *attack*-rate of 67 per 100,000 of the population of the parish in the $2\frac{3}{4}$ months, August to November, of the B. period. The incidence of this small-pox in Hackney is shown (in his report for 1880) by Dr. Tripe, the Medical Officer of Health, to have been at the commencement of the epidemic twenty times, and to the end of 1876 ten times, heavier on certain streets of the area within a quarter of a mile of Homerton Hospital than on the rest of the district.

# B. PERIOD: END OF AUGUST TO 18TH NOVEMBER, 1876.

*Smallpox Attacks per 100,000 population in each area referred to.*




| *Smallpox Hospitals and their Operations. Period B.* | | |
|---|---|---|
| *Name of M.A.B Hospital.* | *Acute Smallpox Admissions to each* | |
| | *Number* | *Per cent* |
| *Stockwell* | *350* | *50·0* |
| *Homerton* | *350* | *50·0* |
| *Hampstead* | *not in use.* | |
| *Deptford* | " " " | |
| *Fulham* | " " " | |

*[Highgate ?]*

Scale ½ Inch to a Mile.

Fred^k Dangerfield Lithographer London 8.87 14668.

B4

*To face p. 14.*

## B. Period: End of August to 18th November 1876.

(*Notes on facts of Epidemic to date.*)

The facts of the B. period indicate further development of the growing epidemic, not so much in the East group of districts (which in the preliminary table of this report are seen, in years before establishment of M. A. B. hospitals, to have been especially prone to small-pox) as in certain other districts which do not appear from the preliminary table to have had intrinsically any very special predilection for small-pox. These other districts are districts containing small-pox hospitals or near to small-pox hospitals.

The actual facts of the growing 1876 epidemic are perhaps sufficiently illustrated by Charts A. and B., which give for each district rates of small-pox *attack* for the two divisions of the 10¾ months, January to 18th November 1876. But in reference to what is said above respecting changes in *rank*, a table is added showing the position of the dozen districts so far most affected by small-pox in this growing 1876 epidemic as compared with their position in 1861–70 before establishment of M. A. B. hospitals. Fifteen other districts had in this A. + B. period rates varying from 4·4 to 0·6, and three had no small-pox deaths. None of these 18 had small-pox hospitals at work in them during the period.

| Rank in 1861–70. (Worst to Best.) | Districts. | January to November 1876. Small-pox Deaths per 100,000 Population. | Locality of District, and Facts as to Relation of Districts and Small-pox Hospitals. |
|---|---|---|---|
| 15th | **LAMBETH** - - | *30·0* | *Stockwell Small-pox Hospital herein* open throughout period. |
| 14th | **Wandsworth and C.** | *17·1* | Eastern border of district ¼-mile from Stockwell Hospital. |
| 13th | **St. Saviour** - - | *13·2* | 1½ miles north of Stockwell Hospital. |
| 25th | **HACKNEY** - | *11·8* | *Homerton Small-pox Hospital herein* in use after August. |
| 23rd | **Camberwell** - - | *10·2* | Western border of district ¾-mile from Stockwell Hospital. |
| 3rd | **Whitechapel** - - | *9·8* | Belong to East group of districts. |
| 5th | **Stepney** - - | *8·5* | |
| 19th | **City** - - - | *7·8* | Belongs to Central group of districts. |
| 9th | **St. Olave** - - | *7·4* | " " South " " |
| 2nd | **Bethnal Green** - | *7·1* | " " East " " |
| ? | *ISLINGTON** - | *6·0* | " " North " (*Highgate Hospital herein.*) |
| 16th | **Chelsea** - - | *5·7* | " " West group of districts. |

* See footnote to page 4.

## C 1. C. Period: 18th November 1876 to 22nd September 1877.

(10 *months during which Small-pox became severely epidemic throughout the Metropolis.*)

In the winter of 1876–77 the epidemic further increased and extended to all metropolitan districts, so that by the spring of 1877 small-pox may be said to have been raging in London. But with summer came the usual seasonal decline of the epidemic, and by September 1877 small-pox could be thought of as dying out in most of the districts of the metropolis.

In this C. period the North group of districts headed the list with a rate of 92·4 per 100,000; the East group was second with 86·3; the South group third with 69·5; the West group fourth with 38·9; and the Central group lowest with a rate of 30·8 per 100,000. To this stage of the epidemic the small-pox death-rates of the several groups of districts were:—

| | | |
|---|---|---|
| | N. 102·4 | |
| W. 42·0 | C. 35·0 | E. 92·0 |
| | S. 83·3 | |

As a consequence of the winter increase of the disease, the M. A. B. Hospital at Hampstead was at the end of November 1876 brought into use for small-pox, and in December Homerton Fever Hospital was devoted to like purpose. Meanwhile the M. A. B. hospital structures at Fulham and Deptford, which had been some time in hand, were urged forward, and both of these hospitals were opened for small-pox in March 1877.

Of the small-pox cases treated in the 10 months of C. period by the M. A. B., the *Homerton* N. and *Hampstead* N. Hospitals together accommodated some 5,000, or 70 per cent. of the whole. Next to them came *Stockwell* S., dealing with 20 per cent., while *Fulham* W. and *Deptford* S. Hospitals, after they were opened in March, were used in the main for the safe keeping, until complete recovery was established, of persons who, having become convalescent from their small-pox in others of the M. A. B. hospitals,* had, owing to excessive small-pox in north-east London, to be removed therefrom to make room for additional acute small-pox cases.

Table C. (giving, for this and for preceding periods, the small-pox death-rates of the several districts, and the operations of the M. A. B. hospitals) shows, in its third column, Hackney N. (containing *Homerton* Hospital) advanced in this C. period to head of the list, and Poplar E. not far behind it. Then, but after a considerable interval, come Stepney E., St. Saviour S., and Lambeth S. (containing *Stockwell* H.). For the rest, the higher rates in this period are chiefly to be found in those eastern and southern parishes which the table shows to have been, during the B. period, most actively developing small-pox. But so far the districts having small-pox hospitals newly established in them during the C. period do not appear (with exception perhaps of Hampstead N., whose normal place in other years was bottom of the list) to have suffered very severely from small-pox. As regards use of *Fulham* and *Deptford* Hospitals, however, see notes above.

Chart C. (which faces page 18), giving the small-pox *attack*-rates of the several districts in the period, and showing their relations to each other and to the M. A. B. hospitals, is broadly corroborative of the indications above noted.

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* This removal of small-pox patients from one hospital to another will be spoken of in the following pages under the name of "drafting."

**C 2.**

## C. Period: 18th November 1876 to September 1877.

(10 *months during which Small-pox became severely epidemic throughout the Metropolis.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of M. A. B. Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those containing Small-pox Hospitals in Caps.

| A. 8 Months, January to end of August 1876. | B. 2¾ Months, end of August to 18th November 1876. | C. 11 Months, 18th November 1876 to 22nd September 1877. | Districts. | *A. + B. + C. 21¾ Months, to 22nd September 1877.* | Local Relations in C. Period with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M.A.B. Acute Small-pox Cases received by Hospitals in Period | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | A. | B. | C. |
| — | 11·8 | 205·9 | **HACKNEY** - N. | *217·7* | CONTAINS HOMERTON M. A. B. HOSPITAL - | — | 350 (*50·0*) | 2,900 (*39·7*) |
| — | 0·6 | 171·9 | Poplar - - - E. | *172·5* | Homerton, 1 N.:—Deptford, 1¼ S.W. | | | |
| 5·1 | 3·4 | 100·8 | Stepney - - - E. | *109·3* | | | | |
| 3·5 | 9·7 | 99·4 | St. Saviour - - S. | *112·6* | Deptford, 1¼ S.E.:—Stockwell, 1½ S.W. | | | |
| 16·6 | 13·4 | 96·2 | **LAMBETH** - - S. | *126·2* | CONTAINS STOCKWELL M. A. B. HOSPITAL - | 250 (*100·0*) | 350 (*50·0*) | 1,450 (*19·9*) |
| — | 2·1 | 82·7 | St. George's-in-East E. | *84·8* | Deptford, 1¾ S. | | | |
| ·9 | 4·5 | 82·4 | St. Olave - - - S. | *89·8* | Deptford, ½ S. | | | |
| ·8 | 6·4 | 71·8 | Camberwell - - S. | *82·0* | Deptford on E. edge:—Stockwell, ¾ W. | | | |
| — | 3·8 | 66·3 | Mile End - - - E. | *70·1* | Homerton, 1½ N. | | | |
| 5·2 | 11·9 | 60·8 | Wandsworth & C. - S. | *77·9* | Stockwell, ¼ E.:—Fulham, 1 N.W. | | | |
| — | 9·8 | 60·3 | Whitechapel - - E. | *70·1* | | | | |
| — | 7·1 | 57·5 | Bethnal Green - E. | *64·6* | Homerton, 1 N. | | | |
| 1·2 | 3·1 | 50·9 | Kensington - - W. | *55·2* | Fulham, ½ W. and S. | | | |
| 0·4 | 1·3 | 50·4 | St. Pancras - - N. | *52·1* | Hampstead, ¼ N.W. (Highgate S. P. Hospital on N.E. edge.) | | | |
| — | 1·9 | 48·4 | St. Marylebone - N. | *50·3* | Hampstead, 1 N. | | | |
| — | 1·9 | 42·9 | Paddington - - W. | *44·8* | Hampstead, 1½ N.E.:—Fulham, 1¾ S.W. | | | |
| — | — | 39·6 | **HAMPSTEAD** - - N. | *39·6* | CONTAINS HAMPSTEAD M. A. B. HOSPITAL. Highgate H., 1 N.E. | — | — | 2,200 (*30·1*) |
| 3·4 | 2·3 | 38·6 | Chelsea - - - W. | *44·3* | Fulham, ¼ W. | | | |
| — | 2·7 | 38·1 | St. Geo., H. Square W. | *40·8* | Fulham, 1¼ W.:—Stockwell, 1½ S.E. | | | |
| 0·7 | 3·3 | 35·6 | Holborn - - - C. | *39·6* | | | | |
| — | 3·9 | 35·5 | Shoreditch - - E. | *39·4* | Homerton, 1¼ N.E. | | | |
| 2·3 | 0·8 | 35·1 | **GREENWICH** - - S. | *38·2* | CONTAINS DEPTFORD M. A. B. HOSPITAL - | — | — | 450 (*6·2*) |
| — | 2·1 | 30·1 | Westminster - W. | *32·2* | | | | |
| — | 7·8 | 27·2 | City - - - C. | *35·0* | | | | |
| — | 4·4 | 24·2 | St. Giles and St. Geo. C. | *28·6* | | | | |
| — | — | 23·8 | Strand - - - C. | *23·8* | | | | |
| — | 0·9 | 23·5 | **FULHAM** - - - W. | *24·4* | CONTAINS FULHAM M. A. B. HOSPITAL - | — | — | 300 (*4·1*) |
| — | 6·0 | 18·0 | *ISLINGTON** - - N. | *24·0* | (*Highgate S.P. Hospital herein.*) Homerton, 1½ E. - | ? | ? | ? |
| — | — | 16·4 | Lewisham - - - S. | *16·4* | Deptford, 1¾ N.W. | | | |
| — | — | 14·8 | Woolwich - - - S. | *14·8* | | | | |

* See footnote to page 4.

**C 3.**

C. Period: 18th November 1876 to 22nd September 1877.

(10 months during which Small-pox became severely epidemic throughout the Metropolis.)

*Operations of M. A. B. Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *upon the inhabitants of certain Districts.*

*Homerton Small-pox Hospital.*—In use (along with Fever Hospital) for small-pox throughout period. Drafted convalescents to Deptford and Fulham.

Fortnightly admissions (*acute cases*). { Greatest number - - 228; Smallest ,, (to July) 58 } Average 130. Total cases 2,900.

Hackney N. (containing Homerton Hospital).—Heavy incidence (340 per 100,000 population) of small-pox attack. Marked decrease of incidence at end of June 1877, concurrently with somewhat rapid diminution of hospital operations. In the calendar year 1877, small-pox was (Dr. Tripe shows in his report for 1880) three times as abundant in certain streets within quarter-mile of hospital as elsewhere in the district.

*Hampstead Small-pox Hospital.*—In use from November 1876 to end of period.

Fortnightly admissions (*acute cases*). { Greatest number - - 163; Smallest ,, (to August) 33 } Average (18 fortnights) 122. Total, 2,200.

Hampstead N.—No small-pox patients received by M. A. B. from parish for more than a year antecedent to re-opening of hospital, and no case, says Mr. Pearson Hill (Hospital Commission, question 1615), known of in Hampstead at the time when this hospital recommenced operations. "But," he says, "within three weeks of re-opening of the "hospital, small-pox broke out in the parish, and concentrated itself with great severity in "houses adjoining the hospital."

*Stockwell Small-pox Hospital.*—Used throughout period.

Fortnightly admissions (*acute cases*). { Greatest number 118; Smallest ,, 44 } Average 60. Total, 1,450.

Lambeth, S.—Much small-pox in parish until August. Mr. Farr's (M. O. H. Lambeth) figures show that Vauxhall and Stockwell ward, with 28 per cent. of the Lambeth population, had in the C. period 39 per cent. of the small-pox coming under notice of the Sanitary Authority.

*Deptford Small-pox Hospital.*—Opened for small-pox 17th March 1877. Closed again end of August.

Fortnightly admissions (*acute cases*). { Greatest number 69; Smallest ,, 16 } Average (10 fortnights) 45. Total, 450.

Received also convalescents, mainly from Homerton.

Greenwich S.—65 per cent. of the small-pox received by M. A. B. from Greenwich in the period occurred subsequent to opening of Deptford Hospital.

*Camberwell* S.—No. 4 ward of Camberwell, which adjoins Deptford Hospital, with (says Dr. Bristowe, the M. O. H.) 20 per cent. of the parish population, furnished between January and March 1877 (before the hospital was open), 30 per cent. of the Camberwell small-pox attacks notified to the Sanitary Authority. After the hospital was open, viz., April to September 1877, it furnished 47 per cent. of such cases. (Report, Hospitals Commission, p. 334.)

*Fulham Small-pox Hospital.*—Opened 10th March 1877; in operation from that date until September, but used up to June mainly for accommodation of convalescents from other hospitals.

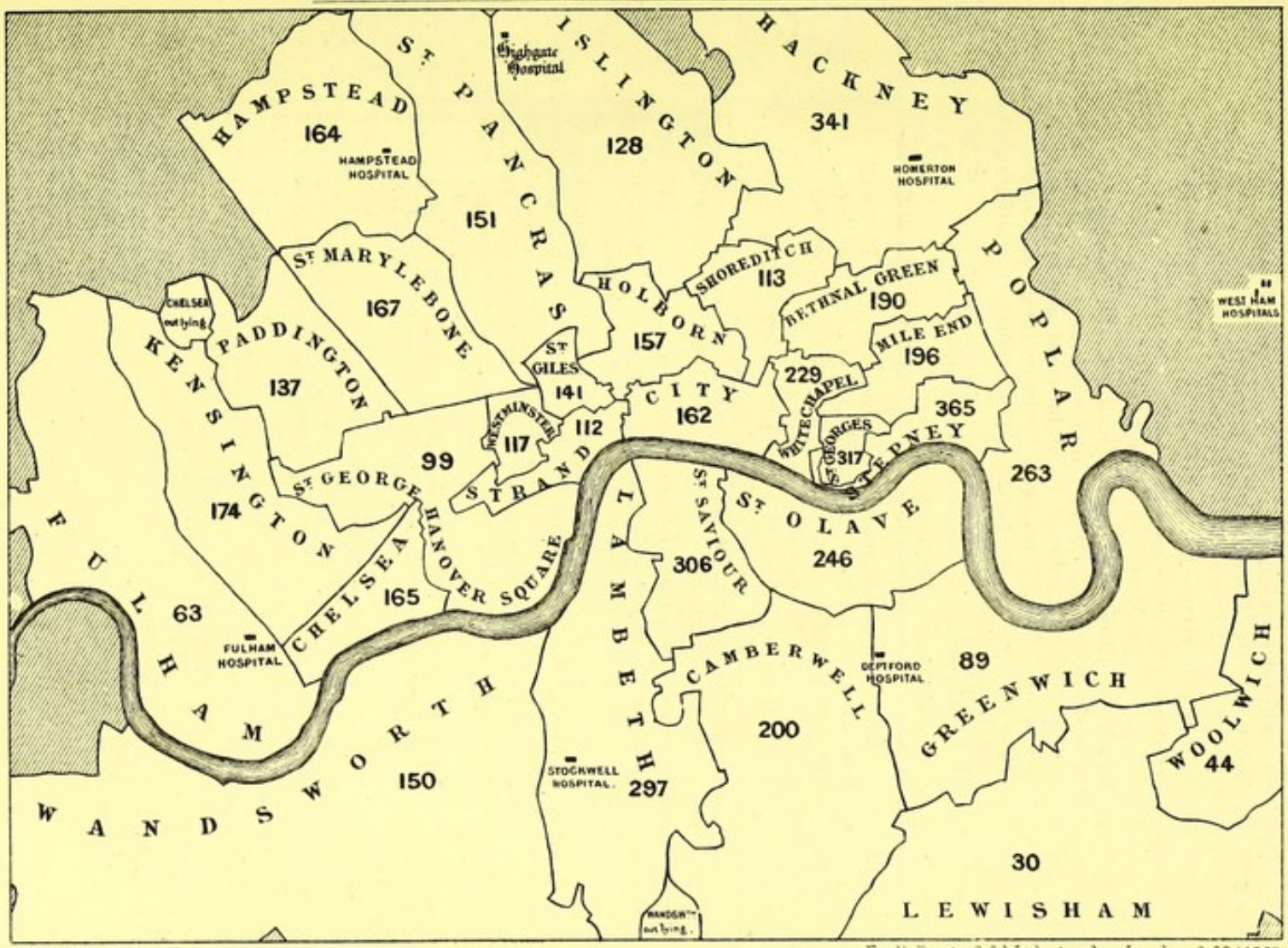
Fortnightly admissions (*acute cases*). { Greatest number 42; Smallest ,, 12 } Average 23. Total acute cases, 300.

*Chelsea*, Fulham, and *Kensington* W.—The small-pox witnessed in these districts *before* and *after* opening of the hospital was distributed thus:—

| Periods. | Houses invaded by Small-pox, per 100 of Houses in each Area referred to. | | |
|---|---|---|---|
| | 0–½ Mile from Hospital. | ½–1 Mile from Hospital. | Beyond 1 Mile from Hospital. |
| April 1876 to March 1877 - - - (*Hospital not open.*) | ·07 | ·19 | ·54 |
| March to June 1877 - - - - (*Hospital, though admitting acute cases, mainly in use for convalescents.*) | ·23 | ·27 | ·47 |
| June to August 1877 - - - - (*Hospital in free use for acute cases.*) | ·74 | ·09 | ·20 |
| August, September, and October - - (*Hospital operations declining.*) | ·35 | ·28 | ·11 |

## C. PERIOD: NOVEMBER 1876 TO SEPTEMBER 1877.

*Smallpox Attacks per 100,000 population in each area referred to.*




Scale ½ Inch to a Mile.

Fred^k Danserfield Lithographer London 8.87.14667.

| *Smallpox Hospitals and their Operations. Period C.* | | |
|---|---|---|
| *Name of M.A.B. Hospital.* | *Acute Smallpox Admissions to each* | |
| | *Number* | *Per cent* |
| *Hemerton* | *2900* | *39·7* |
| *Hampstead* | *2200* | *30·1* |
| *Stockwell* | *1450* | *19·9* |
| *Deptford* | *450* | *6·2* |
| *Fulham* | *300* | *4·1* |

[*Highgate ?*]

C 4.

*To face p. 18.*

## C. Period: 18th November 1876 to 22nd September 1877.

(*Notes on the facts of the Epidemic to date.*)

The facts of the C. period, which comprises culmination and decline of a "season" of severe epidemic small-pox in London, are very instructive. They give indications that whatever the influence determining the locality of earliest chief manifestation of epidemic small-pox, such influence has been liable, *after an epidemic had become fully and widely established*, to be overborne by a variety of circumstances giving effect to the intrinsic ability of certain districts or groups of districts to develop epidemically the pervading small-pox. Thus in the subjoined table, which combines the facts for all the periods up to September 1877, certain Eastern districts, which aforetime were known to have special predilection for small-pox, are seen forcing their way to the front, and giving promise, should further opportunity be afforded them by renewal of epidemic small-pox, of displacing, *in the next ensuing season*, Lambeth and Hackney, which on the occasion of commencement of the epidemic were observed to be most prompt in reacting to the stimulus of epidemic small-pox. Nevertheless, the table shows, up to date in the current epidemic, certain districts containing small-pox hospitals or near to small-pox hospitals in far worse position as regards rank than in 1861–70.

| Rank in 1861–70. (Worst to Best.) | Districts. | January 1876 to September 1877. | | |
|---|---|---|---|---|
| | | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts and Number and Percentage of M. A. B. acute Cases received by Hospitals in Period. |
| 25th | HACKNEY | 1st | 217·7 | N. *Homerton H.*, 3,250 (= 39·4). |
| 4th | Poplar | 2nd | 172·5 | E. |
| 15th | LAMBETH | 3rd | 126·2 | S. *Stockwell H.*, 2,050 (= 24·9). |
| 13th | St. Saviour | 4th | 112·6 | S. |
| 5th | Stepney | 5th | 109·3 | E. |
| 9th | St. Olave | 6th | 89·8 | S. |
| 6th | St. George's-in-East | 7th | 84·8 | E. |
| 23rd | Camberwell | 8th | 82·0 | S. |
| 14th | Wandsworth | 9th | 77·9 | S. |
| 7th | Mile End | 10th | 70·1 | E. |
| 3rd | Whitechapel | 11th | 70·1 | E. |
| 2nd | Bethnal Green | 12th | 64·6 | E. |
| 26th æq. | Kensington | 13th | 55·2 | W. |
| 22nd | St. Pancras | 14th | 52·1 | N. |
| 24th | St. Marylebone | 15th | 50·3 | N. |
| 26th æq | Paddington | 16th | 44·8 | W. |
| 16th | Chelsea | 17th | 44·3 | W. |
| 17th | St. George's, H. Square | 18th | 40·8 | W. |
| 30th | HAMPSTEAD | 19th | 39·6 | N. *Hampstead H.*, 2,200 (= 26·6). |
| 10th | Holborn | 20th | 39·6 | C. |
| 8th | Shoreditch | 21st | 39·4 | E |
| 12th | GREENWICH | 22nd | 38·2 | S. *Deptford H.*, 450 (= 5·5). |
| 19th | City | 23rd | 35·0 | C. |
| 20th æq. | Westminster | 24th | 32·2 | W. |
| 11th | St. Giles and St. George | 25th | 28·6 | C. |
| 26th æq. | FULHAM | 26th | 24·4 | W. *Fulham H.*, 300 (= 8·6). |
| ? | *ISLINGTON** | 27th | 24·0 | N. (Highgate H.?) |
| 20th æq. | Strand | 28th | 23·8 | C. |
| 9th | Lewisham | 29th | 16·4 | S. |
| 18th | Woolwich | 30th | 14·8 | S. |

* See footnote to page 4.

## D1. D. Period: September 1877 to September 1878.

(12 *months, comprising a second consecutive seasonal cycle of severe epidemic Small-pox in London.*)

Small-pox, after displaying its usual seasonal lull at the end of the C. period (September 1877), increased again in autumn, and during the winter of 1877–78 and following spring became once more epidemic over a large area of the metropolis. About May (1878) the renewed epidemic reached its acme, and then declined through summer and autumn until by September it had reached a point below that of the preceding year. Again, therefore, small-pox could be thought of as dying out in London.

In this second cycle of vigorous epidemicity, small-pox fell, as before, with especial severity on the East and North groups of districts, which suffered respectively rates of mortality by the disease of 63 and 50 per 100,000. Next came the South and the West groups, with rates of 36 and 25, and lowest of all was the Central group, with a rate of 21 per 100,000. Up to this stage of the total epidemic the rates of the several groups were :—

| | | |
|---|---|---|
| | N. 152·4 | |
| W. 67·2 | C. 55·9 | E. 155·6 |
| | S. 120·0 | |

During this D. period all five M. A. B. hospitals were in use for small-pox. *Homerton* N. and *Hampstead* N. accommodated between them 2,650 (above one-half) of the M. A. B. cases of the period. Next came *Stockwell* S., with 1,100 (21·8 per cent.); *Fulham* W., with 750 (14·9 per cent.); and *Deptford* S., with 550 (11·0 per cent.) of the M. A. B. cases. *Homerton* N. and *Stockwell* S. were in use throughout the period; *Hampstead* N. was not much used (for acute cases) until January 1878; *Fulham* W. not until February; and *Deptford* S. not until May.

Table D. (giving for this and for antecedent periods the small-pox death-rates of each district and the operations of the M. A. B. hospitals) shows, in its fourth column, eight districts with rates above those witnessed in them in the previous C. period. They are, Stepney E., Mile End E., St. George's-in-East E., Fulham W., Chelsea W., Greenwich S., St. Giles C., and Islington N. The small-pox of the first three is largely responsible for the excessive rate observed in this period in the East group, as is that of Fulham (containing *Fulham* H.) and Chelsea for the rate of the West group. The small-pox of the South group is more evenly distributed among the districts comprised in it; but the rate of the North group largely results from abundance of small-pox in Hackney (containing *Homerton* H.), and in St. Pancras. The indications of this period, recorded in Table D., are further and broadly illustrated by the Chart D. (facing page 22), which gives the small-pox *attack*-rates in the period of the several districts, and shows their relations to each other and to the M. A. B. hospitals.

**D 2.**

## D. Period: September 1877 to September 1878.

*(12 months, comprising a second consecutive cycle of epidemic Small-pox in London.)*

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to Districts whence each Case was brought), and with Note of Local Relations of M. A. B. Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those containing Small-pox Hospitals in Caps.

| A. 8 Months, Jan. to end of Aug. 1876. | B. 2¾ Months, end of Aug. to 18th Nov. 1876. | C. 11 Months, 18th Nov. 1876 to 22nd Sept 1877. | D. 12 Months, Sept. 1877 to Sept. 1878. | Districts. | *A.—D. 33¾ Months Jan. 1876 to Sept. 1878.* | Local Relations in D. Period with Small pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | A. | B. | C. | D. |
| 5·1 | 3·4 | 100·8 | 157·1 | Stepney - - - E. | *266·4* | | | | | |
| — | 3·8 | 66·3 | 103·2 | Mile End - - - E. | *178·3* | Homerton, 1¼ N. | | | | |
| — | 2·1 | 82·7 | 84·8 | St. George's-in-East E. | *169·6* | Deptford, 1¾ S. | | | | |
| — | 11·8 | 205·9 | 63·8 | HACKNEY - - N. | *281·5* | CONTAINS HOMERTON M. A. B. HOSPITAL. | — | 350 (*50·0*) | 2,900 (*39·7*) | 1,350 (*26·7*) |
| — | 0·9 | 23·5 | 52·2 | FULHAM - - - W. | *76·6* | CONTAINS FULHAM M. A. B. HOSPITAL. | — | — | 300 (*4·1*) | 750 (*14·9*) |
| — | 9·8 | 60·3 | 51·8 | Whitechapel - - E. | *121·9* | | | | | |
| 16·6 | 13·4 | 96·2 | 49·7 | LAMBETH - - S. | *159·3* | CONTAINS STOCKWELL M. A. B. HOSPITAL. | 250 (*100·0*) | 350 (*50·0*) | 1,450 (*19·9*) | 1,100 (*21·8*) |
| 3·8 | 6·4 | 71·8 | 47·7 | Camberwell - - S. | *125·9* | Deptford on E. edge:—Stockwell, ¾ W. | | | | |
| 3·4 | 2·3 | 38·6 | 47·7 | Chelsea - - - W. | *88·6* | Fulham, ¼ W. | | | | |
| — | 0·6 | 171·9 | 46·0 | Poplar - - - E. | *218·5* | Homerton, 1 N.:—Deptford, 1¼ S.W. | | | | |
| 2·3 | 0·8 | 35·1 | 45·0 | GREENWICH - - S. | *80·9* | CONTAINS DEPTFORD M. A. B. HOSPITAL. | — | — | 450 (*6·2*) | 550 (*10·9*) |
| 0·4 | 1·3 | 50·4 | 43·2 | St. Pancras - - N. | *94·9* | Hampstead, ¾ N.W. (Highgate S. P. Hospital on N.E. edge). | | | | |
| — | 7·1 | 57·5 | 42·5 | Bethnal Green - - E. | *107·1* | Homerton, 1 N. | | | | |
| 3·5 | 9·7 | 99·4 | 40·0 | St. Saviour - - S. | *149·1* | Deptford, 1¼ S.E.:—Stockwell, 1½ S.W. | | | | |
| 2·9 | 4·5 | 82·4 | 30·5 | St. Olave - - - S. | *117·4* | Deptford, ½ S. | | | | |
| — | 3·9 | 35·5 | 29·2 | Shoreditch - - E. | *68·6* | Homerton, 1¼ N.E. | | | | |
| — | 4·4 | 24·2 | 28·6 | St. Giles and St. Geo. C. | *57·2* | | | | | |
| — | — | 39·6 | 26·4 | HAMPSTEAD - - N. | *66·0* | CONTAINS HAMPSTEAD M. A. B. HOSPITAL. Highgate H., 1 N.E. | — | — | 2,200 (*30·1*) | 1,300 (*25·7*) |
| 5·2 | 11·9 | 60·8 | 23·7 | Wandsworth and C. S. | *96·4* | Stockwell, ¼ E.:—Fulham, 1 N.W. | | | | |
| 0·7 | 3·3 | 35·6 | 22·3 | Holborn - - - C. | *61·2* | | | | | |
| — | 6·0 | 18·0 | 22·6 | *ISLINGTON** - - N. | *46·6* | (*Highgate Hospital herein.*) Homerton, 1½ E. | ? | ? | ? | ? |
| 1·2 | 3·1 | 50·9 | 19·0 | Kensington - - W. | *73·0* | Fulham, ¼ W. and S. | | | | |
| — | — | 23·8 | 17·9 | Strand - - - C. | *41·7* | | | | | |
| — | 1·9 | 48·4 | 17·4 | St. Marylebone - N. | *67·7* | Hampstead, 1 N. | | | | |
| — | 1·9 | 42·9 | 16·8 | Paddington - - W. | *61·6* | Hampstead, 1½ N.E.:—Fulham, 1¾ S.W. | | | | |
| — | — | 14·8 | 14·8 | Woolwich - - - S. | *29·6* | | | | | |
| — | — | 16·4 | 13·6 | Lewisham - - - S. | *30·0* | Deptford, 1¾ N.W. | | | | |
| — | 7·8 | 27·2 | 11·7 | City - - - C. | *46·7* | | | | | |
| — | 2·7 | 38·1 | 10·7 | St. Geo., H. Square W. | *51·5* | Fulham, 1¼ W.:—Stockwell, 1½ S.E. | | | | |
| — | 2·1 | 30·1 | 4·3 | Westminster - - W. | *36·5* | | | | | |

* See footnote to page 4.

## D 3.

### D. Period: September 1877 to September 1878.

(12 months, comprising the second cycle of an epidemic of Small-pox in London.)

*Operations of M. A. B. Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *upon the inhabitants of certain Districts.*

*Homerton Small-pox Hospital.*—In full use from September 1877 until July 1878, when closed. Drafted in winter and spring convalescents to Hampstead and Fulham Hospitals.*

Fortnightly admissions (*acute cases*). { Greatest number - 106; Smallest ,, (July) 19 } Average 64. Total acute cases 1,350.

Hackney N.—Suffered not much more than half as much small-pox attack as in the preceding period, and small-pox seems (from M. A. B. returns) to have practically died out in Hackney by the end of July 1878. In the calendar year (1878) Dr. Tripe shows (in his report for 1880) small-pox to have been nearly five times as abundant in certain streets within ¼-mile of the hospital as in the rest of the district.

*Hampstead Small-pox Hospital.*—Not much used between September and December 1877. Afterwards in full operation till the end of the period: was part of the time receiving convalescents, mainly from Homerton.

Fortnightly admissions (*acute cases*). { Greatest number - 125; Smallest (at end Aug.) number - - 18 } Average, after Dec., 72. Total acute cases some 1,300.

Hampstead N.—No small-pox cases admitted from parish to M. A. B. hospital between October 1877 and January 1878. Thenceforward to near end of period Hampstead contributed cases fortnight by fortnight to hospital. Mr. Pearson Hill says (Report, Hospitals Commission, question 1622) that of the small-pox cases occurring in Hampstead in January 1878, the first five cases were in houses within 50 to 100 yards of the hospital.

*Stockwell Small-pox Hospital.*—In operation from September 1877 to end of July 1878, when closed. Part of period drafted convalescents to Fulham.

Fortnightly admissions (*acute cases*). { Greatest number 96; Smallest ,, 13 } Average (22 fortnights) 50. Total acute cases about 1,100.

Lambeth S.—Of small-pox coming to the knowledge of the S. A. during the period, Vauxhall and Stockwell ward (containing 28 per cent. of Lambeth population) furnished 49 per cent. of the cases. On closure of Stockwell Hospital small-pox forthwith died out in the "ward" in question. (Report, Hospitals Commission, p. 131.)

*Fulham Small-pox Hospital.*—Between October 1877 and February 1878 only three acute cases admitted, the hospital being in use for convalescents. After end of January 1878 freely used for acute cases.

Fortnightly admissions (*acute cases*). { Greatest number - - 115; Smallest (to July) number 14 } Average (13 fortnights) 53. Total acute cases about 750.

Chelsea, Fulham, and Kensington W.—Houses invaded (per cent of total in each area) during the period: in area within one mile of hospital, 1·80; in the remainder of the three parishes 0·67.

*Deptford Small-pox Hospital.*—Not in operation between August 1877 and May 1878. Thenceforward in use until end of period.

Fortnightly admissions (*acute cases*). { Greatest number 95; Smallest ,, 33 } Average (10 fortnights) 55. Total acute cases some 550.

Greenwich S.—Of small-pox received by M. A. B. from Greenwich during the whole period of 12 months, nearly 70 per cent. of the cases were admitted *after* re-opening of the hospital at Deptford.

*Camberwell* S.—No. 4 ward of Camberwell, adjacent to Deptford Hospital, and including only 20 per cent. of the population of the parish, furnished, while the hospital remained closed, 28·9 per cent. of the small-pox cases ascertained by the Sanitary Authority to have occurred. Between May and September 1878, while the hospital was in operation, No. 4 ward furnished 62 per cent. of such cases.

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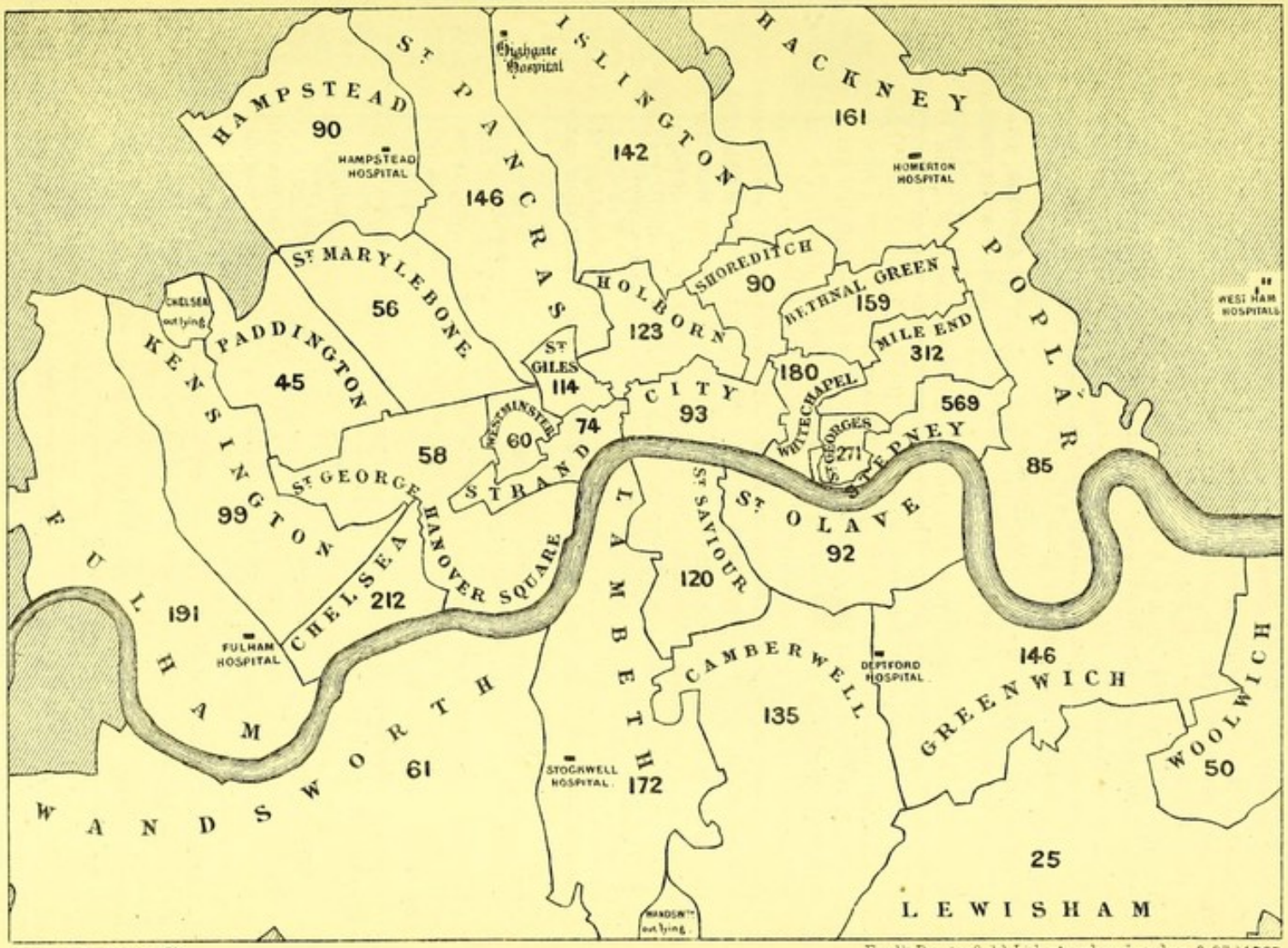
* See footnote to page 16.

## D. PERIOD: SEPTEMBER 1877 TO SEPTEMBER 1878.

*Smallpox Attacks per 100,000 population in each area referred to.*




Scale ½ Inch to a Mile

Fred^k Danserfield Lithographer, London 8 87 14667

*Smallpox Hospitals and their Operations. Period D.*

| Name of M.A.B. Hospital. | Acute Smallpox Admissions to each | |
|---|---|---|
| | Number | Per cent |
| Homerton | 1360 | 26·7 |
| Hampstead | 1300 | 25·7 |
| Stockwell | 1100 | 21·8 |
| Fulham | 750 | 14·9 |
| Deptford | 550 | 10·9 |

[Highgate ?]

To face p. 22

D 4.

**D 5.**

## D. Period: September 1877 to September 1878.

*(Notes on the facts of the Epidemic to date.)*

In the D. period of renewed (the second successive pronounced) seasonal rise, culmination, and decline of epidemic small-pox in London, certain Eastern districts, aforetime specially prone to small-pox, have fulfilled their promise of the preceding period. Three of them, Stepney, Mile End, and St. George's-in-East, having each more small-pox than in the previous period, and with death-rates far in excess of other districts, are seen to head the list; and this notwithstanding that small-pox in the D. period was much less abundant in London than in the preceding 12 months. And over the whole period of the epidemic (January 1876 to September 1878) up to date, certain Eastern districts are seen to retain a position very similar to that occupied by them in 1861-70, though none of them have been able to displace Hackney N., and only four of them superseded Lambeth S., which was first of all the metropolitan districts to be seriously affected by the 1876 epidemic. These facts are illustrated in the subjoined table, which also indicates that some very complex influences must have been at work in determining the incidences of the small-pox of the epidemic as a whole; since certain districts aforetime (*i.e.*, in 1861–70) heavy sufferers by small-pox, along with contiguous districts, are seen to have been smitten in this epidemic much less severely than their neighbours.

| Rank in 1861-70. (Worst to Best.) | Districts. | January 1876 to September 1878. | | |
|---|---|---|---|---|
| | | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Cases received by Hospitals in Period. |
| 25th | **HACKNEY** | 1st | *281·5* | N. *Homerton* H., 4,600 (= *34·6*). |
| 5th | Stepney | 2nd | *266·4* | E. |
| 4th | Poplar | 3rd | *218·5* | E. |
| 7th | Mile End | 4th | *173·3* | E. |
| 6th | St. George's-in-East | 5th | *169·6* | E. |
| 15th | **LAMBETH** | 6th | *159·3* | S. *Stockwell* H., 3,156 (= *28·7*). |
| 13th | St. Saviour | 7th | *149·1* | S. |
| 23rd | Camberwell | 8th | *125·9* | S. |
| 3rd | Whitechapel | 9th | *121·9* | E. |
| 9th | St. Olave | 10th | *117·4* | S. |
| 2nd | Bethnal Green | 11th | *107·1* | E. |
| 14th | Wandsworth | 12th | *96·4* | S. |
| 22nd | St. Pancras | 13th | *94·9* | N. |
| 16th | Chelsea | 14th | *88·6* | W. |
| 12th | **GREENWICH** | 15th | *80·9* | S. *Deptford* H., 1,000 (= *7·5*). |
| 26th æq. | **FULHAM** | 16th | *76·6* | W. *Fulham* H., 1,050 (= *7·9*). |
| 26th æq. | Kensington | 17th | *73·0* | W. |
| 8th | Shoreditch | 18th | *68·6* | E. |
| 24th | St. Marylebone | 19th | *67·7* | N. |
| 30th | **HAMPSTEAD** | 20th | *66·0* | N. *Hampstead* H., 3,500 (= *26·3*). |
| 26th æq. | Paddington | 21st | *61·6* | W. |
| 10th | Holborn | 22nd | *61·2* | C. |
| 11th | St. Giles and St. George | 23rd | *57·2* | C. |
| 17th | St. George's, H. Square | 24th | *51·5* | W. |
| 19th | City | 25th | *46·7* | C. |
| ? | *ISLINGTON** | 26th | *46·6* | N. (Highgate H. ?) |
| 20th æq. | Strand | 27th | *41·7* | C. |
| 20th æq. | Westminster | 28th | *36·5* | W. |
| 29th | Lewisham | 29th | *30·0* | S. |
| 18th | Woolwich | 30th | *29·6* | S. |

* See footnote to page 4.

## E 1. E. Period: September 1878 to September 1879.

(12 *months of pronounced decadence of Epidemic Small-pox in London.*)

In this period (E.), though there was for the third year in succession distinct seasonal rise, culmination, and decline of small-pox, it was notable in a few districts only, and epidemic prevalence and fatality of the disease in London as a whole was to a corresponding extent insignificant. The deaths of this period were only about one-third as numerous as those of the preceding period, and were fewer than in any year since 1876.

Though in this third cycle of the epidemic each of the five groups of districts suffered less than in the preceding 12 months, the South group suffered far in excess of the others. It had a rate of 27, whereas none other but the West group, with 14, had a rate so high as 5 per 100,000.

During the E. period all five of the M. A. B. hospitals were in use for small-pox, but the operations of *Deptford* S. and *Fulham* W. were far in excess of the others. *Deptford* S. received 1,000 (50 per cent.) and *Fulham* W. 700 (35 per cent.) of the M. A. B. acute cases, whereas *Stockwell* S., with 150, *Hampstead* N., with 100, and *Homerton* N., with 50, received only 7, 5, and 2½ per cent. respectively. *Deptford* S. was in sustained use from September 1878 to June 1879; and *Fulham* W., though not coming much into use before January 1879, was subsequently in sustained operation until September. On the other hand, *Stockwell* S. did not come into operation until May 1879; and *Hampstead* N., though in use until June, was very sparingly used throughout the period. *Homerton* N. only came into use when *Hampstead* was closed in June, and its operations, like those of *Hampstead*, were comparatively insignificant.

Table E. (giving for this and for preceding periods the small-pox death-rates of the several districts, and the operations of the M. A. B. hospitals) shows, in its second column, decline of small-pox almost everywhere in the metropolis except in certain districts of the South group, namely, Greenwich S. (containing *Deptford* H.) and Camberwell, which adjoins Greenwich. The former, with double the amount of small-pox witnessed in it in the preceding period, heads the list with a rate of 89 per 100,000; and Camberwell second, with a rate of 47, has as much small-pox as before. Of the remaining districts few have small-pox in amount at all approaching that of the previous period; indeed only seven have rates above 10 per 100,000. They are St. Saviour S., with 34; Fulham W. (containing *Fulham* H.), with 32; St. Olave S., with 21; Chelsea W., with 17; Kensington W., with 15; Wandsworth S., with 12; and Whitechapel E., with 11 per 100,000 population. Chart E. (which faces page 26), giving the small-pox *attack*-rates of the several districts and showing their relations to each other and to the M. A. B. hospitals, is entirely corroborative of the indications of the table.

E 2.

## E. Period: September 1878 to September 1879.

(12 *months of pronounced decadence of Epidemic Small-pox in London.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of M. A. B. Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those containing Small-pox Hospitals in Caps.

| D. 12 Months, September 1877 to September 1878. | E. 12 Months, September 1878 to September 1879. | Districts. | A.—E. *January* 1876 *to September* 1879. | Local Relations in E. Period with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received into Hospitals in Period | |
|---|---|---|---|---|---|---|
| | | | | | D. | E. |
| 45·0 | 89·2 | GREENWICH - - - S. | *170·1* | CONTAINS DEPTFORD M. A. B. HOSPITAL - - - | 550 (*10·9*) | 1,000 (*50·0*) |
| 47·7 | 47·7 | Camberwell - - - - S. | *173·6* | Deptford on E. edge:—Stockwell, ¾ W. | | |
| 40·0 | 34·3 | St. Saviour - - - - S. | *183·4* | Deptford, 1¾ S.E.:—Stockwell, 1½ S.W. | | |
| 32·3 | 32·2 | FULHAM - - - - W. | *108·8* | CONTAINS FULHAM M. A. B. HOSPITAL - - - - | 750 (*14·9*) | 700 (*35·0*) |
| 30·5 | 21·5 | St. Olave - - - - S. | *138·9* | Deptford, ¾ S. | | |
| 47·7 | 17·0 | Chelsea - - - - - W. | *105·6* | Fulham, ¾ W. | | |
| 19·0 | 15·3 | Kensington - - - - W. | *88·3* | Fulham, ½ W. and S. | | |
| 23·7 | 12·8 | Wandsworth and C. - - S. | *109·2* | Stockwell, ¼ E.:—Fulham, 1 N.W. | | |
| 51·8 | 11·2 | Whitechapel - - - - E. | *132·1* | | | |
| 4·3 | 8·6 | Westminster - - - - W. | *45·1* | | | |
| 11·7 | 7·7 | City - - - - - - C. | *54·4* | | | |
| 49·7 | 7·5 | LAMBETH - - - - S. | *166·8* | CONTAINS STOCKWELL M. A. B. HOSPITAL - - - | 1,100 (*21·8*) | 150 (*7·5*) |
| 16·8 | 6·5 | Paddington - - - - W. | *68·1* | Hampstead, 1½ N.E.:—Fulham, 1¾ S.W. | | |
| 46·0 | 6·4 | Poplar - - - - - E. | *224·9* | Homerton, 1 N.:—Deptford, 1¼ S.W. | | |
| 13·6 | 5·5 | Lewisham - - - - S. | *35·5* | Deptford, 1¾ N.W. | | |
| 10·7 | 5·3 | St. George's, H. Square - W. | *56·8* | Fulham, 1¼ W.:—Stockwell, 1½ S.E. | | |
| 43·2 | 5·1 | St. Pancras - - - - N. | *100·0* | Hampstead, ¼ N.W. Highgate S. P. Hospital on N.E. edge. | | |
| 42·5 | 3·9 | Bethnal Green - - - E. | *111·0* | Homerton, 1 N. | | |
| 157·1 | 3·4 | Stepney - - - - - E. | *269·8* | | | |
| 17·4 | 3·2 | St. Marylebone - - - N. | *70·9* | Hampstead, 1 N. | | |
| 17·9 | 3·0 | Strand - - - - - C. | *44·7* | | | |
| 22·3 | 2·6 | Holborn - - - - - C. | *63·8* | | | |
| 14·8 | 2·5 | Woolwich - - - - S. | *32·1* | | | |
| 28·6 | 2·2 | St. Giles and St. George - E. | *59·4* | | | |
| 63·8 | 2·1 | HACKNEY - - - - N. | *283·6* | CONTAINS HOMERTON M. A. B. HOSPITAL - - - | 1,350 (*26·7*) | 50 (*2·5*) |
| 84·8 | 2·1 | St. George's-in-East - - E. | *171·7* | Deptford, 1¾ S. | | |
| 103·2 | 1·8 | Mile End - - - - E. | *175·1* | Homerton, 1¼ N. | | |
| 22·6 | 1·4 | *ISLINGTON** - - - N. | *48·0* | (*Highgate S. P. Hospital herein.*) Homerton, 1¼ E. - - - | ? | ? |
| 29·2 | 0·8 | Shoreditch - - - - E. | *69·4* | Homerton, 1¼ N.E. | | |
| 26·4 | 0·0 | HAMPSTEAD - - - N. | *66·0* | CONTAINS HAMPSTEAD M. A. B. HOSPITAL. Highgate H., 1 N.E. | 1,300 (*25·7*) | 100 (*5·0*) |

* See footnote to page 4.

**E 3.**

E. Period: September 1878 to September 1879.

(12 months of pronounced decadence of Epidemic Small-pox in London.)

*Operations of M. A. B. Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *upon inhabitants of certain Districts.*

*Deptford Small-pox Hospital.*—In sustained operation from September 1878 to June 1879. Very sparingly used June to September.

Fortnightly admissions (*acute cases*). { Greatest number - - 131 / Smallest (Nov. 1878) number 15 } Average (20 fortnights) 50. Total cases about 1,000.

Greenwich S.—Incidence of small-pox attack greatly in excess of that on any other district (see Chart E.). Distribution of this small-pox has not, seemingly, been specially reported on.

Camberwell S.—No. 4 Ward, adjacent to Deptford Hospital and containing 20 per cent. of the Camberwell population, contributed from October 1878 to June 1879 (during larger operations of the hospital), 50 per cent. of the small-pox coming under notice of the S. A.; from June to September (while hospital was little used), 12 per cent. (Dr. Bristowe, Hospitals Commission Report, p. 334.)

*Fulham Small-pox Hospital.*—Not much used between September 1878 and January 1879, thenceforward in operation to end of period.

Fortnightly admissions (*acute cases*). { Greatest number 53 / Smallest ,, 3 } Average (19 fortnights) 26. Total acute cases some 700.

Chelsea, Fulham, and Kensington W.—Houses invaded (per cent. of total in each area) during period: in area within one mile of hospital, 1·68; in remainder of the three parishes, 0·47.

*Stockwell Small-pox Hospital.*—Not in operation between July 1878 and May 1879.

Fortnightly admissions (*acute cases*). { Greatest number 25 / Smallest ,, 12? } Average (9 fortnights) 17? Total cases about 150.

Lambeth S.—Mr. Farr, in his evidence before the Hospitals Commission, gives no data after March 1879. But he shows that from the date of closure of Stockwell Hospital in July 1878 to March 1879, Vauxhall and Stockwell Ward (containing the hospital), with 28 per cent. of the Lambeth population, had only 14 per cent. of the small-pox coming under notice of the S. A. As regards the whole parish, the M. A. B. returns show that in the five months of the E. period, during which Stockwell Hospital was open, there were received from Lambeth nearly twice as many small-pox cases as had been admitted from thence in the preceding seven months.

*Hampstead Small-pox Hospital.*—In operation from September 1878 to May 1879, but used sparingly.

Fortnightly admissions (*acute cases*). { Greatest number 15 / Smallest ,, 2 } Average (17 fortnights) 6. Total admissions about 100.

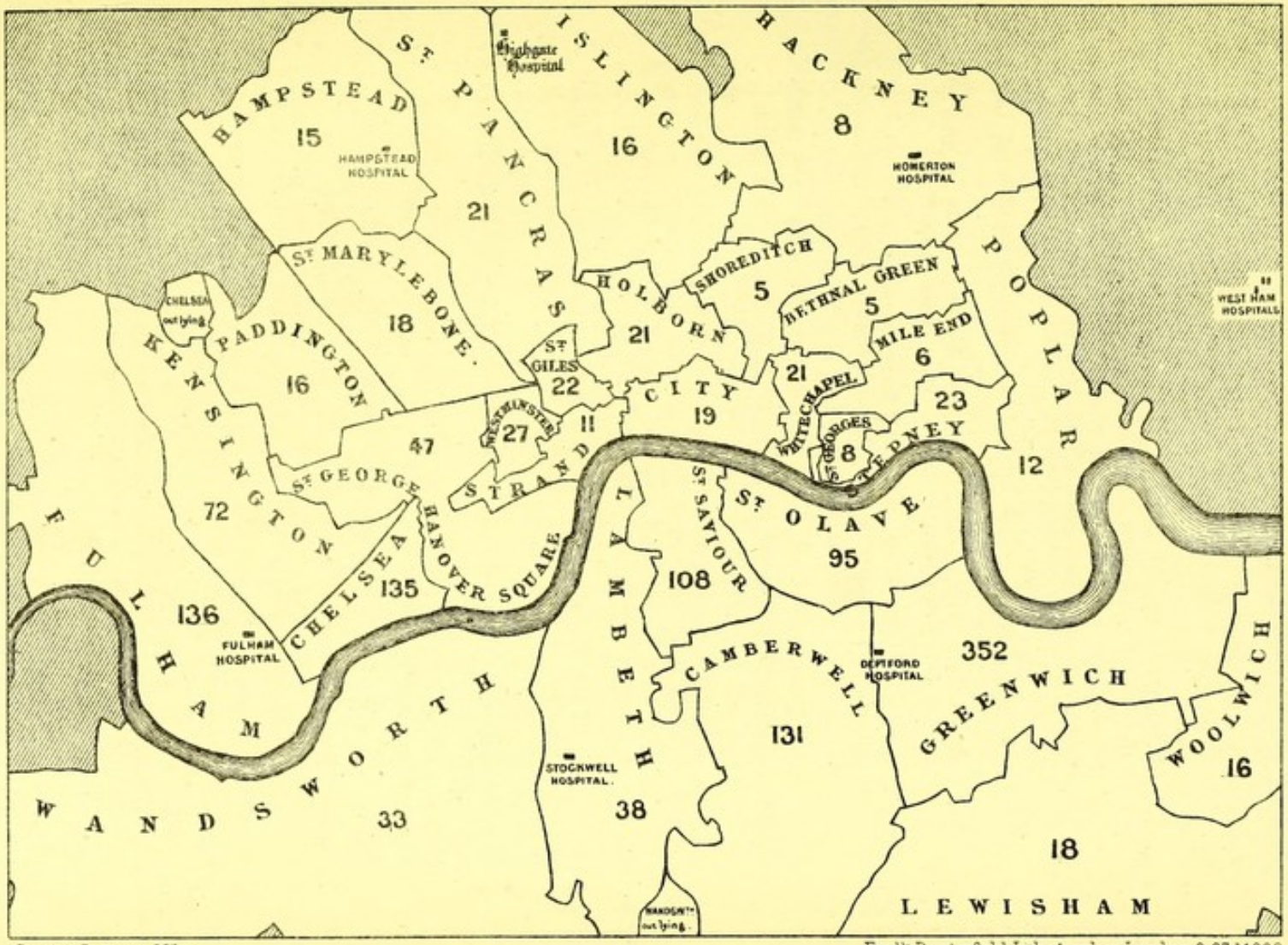
Hampstead N.—Very little small-pox here in 1878–79.

*Homerton Small-pox Hospital.*—Not in operation from July 1878 until June 1879. Fortnightly admissions (8 fortnights) averaged 7 only. Total admissions (*acute cases*) about 50. Hospital again ceased receiving cases at end of September 1879.

Hackney N.—Very little small-pox in the period. Attack-rate, as in case of Bethnal Green E., Shoreditch E., Mile End E., and St. George's-in-the-East E., only nominal. In the calendar year 1879 only 30 small-pox attacks in all Hackney came under notice of the S. A.; but 3 of the 30 occurred, says Dr. Tripe (Report, 1880), during hospital operations, within a quarter-mile of the hospital, and other 3 (all in October) in the same area within a month of closure of the hospital at end of September 1879.

# E. PERIOD: SEPTEMBER 1878 TO SEPTEMBER 1879.

*Smallpox Attacks per 100,000 population in each area referred to.*




Scale ½ Inch to a Mile.

Fredk Dangerfield Lithographer London 8.87.14668.

| *Smallpox Hospitals and their Operations. Period E.* | | |
|---|---|---|
| *Name of M.A.B Hospital.* | *Acute Smallpox Admissions to each.* | |
| | *Number* | *Per cent* |
| *Deptford* | *1000* | *50·0* |
| *Fulham* | *700* | *35·0* |
| *Stockwell* | *150* | *7·5* |
| *Hampstead* | *100* | *5·0* |
| *Homerton* | *50* | *2·5* |

*[Highgate ?]*

E4.

*To face p. 26*

## E. PERIOD: SEPTEMBER 1878 TO SEPTEMBER 1879.

(*Notes on the waning of Epidemic Small-pox in London.*)

The E. period, which is the third consecutive season of pronounced rise, culmination, and decline of small-pox in London, is especially noteworthy as being the last of these cycles included in the epidemic that commenced in 1876. As has been said, it was a period of marked and general decadence of small-pox; and during it the seasonal rise, culmination, and decline of the disease was not well-pronounced except in the seven districts (none of them East districts) heading the list of the period. Especially was it conspicuous in GREENWICH S., which alone of all the metropolitan districts suffered in this period much and large increase of small-pox. As to the relation with M. A. B. small-pox hospitals in chief use during this period of other districts thus retaining epidemic small-pox when most districts had lost it, the facts are sufficiently illustrated by the E. table and chart. Later on there will be opportunity of comparing this E. period with another 12 months of waning small-pox in London.

## F 1. F. Period: September 1879 to September 1880.

(12 *months of very low degree of prevalence of Small-pox in London, but during which there were indications of fresh epidemic activity of the disease.*)

In this period the actual amount of small-pox in London was less than in any year since 1876. Nevertheless, as before, there was marked rise, culmination, and fall of the disease in certain districts; and further and above all, there was in at least 10 out of the 30 districts more small-pox than in the preceding 12 months. In one important respect only did the behaviour of small-pox in the F. period differ from that of antecedent periods:—small-pox did not increase markedly in the autumn as in other years, but rather in late winter or early spring.

Especially was late development and subsequent marked manifestation of seasonal small-pox apparent in districts of the North and East groups which above all others increased their small-pox during the F. period. But indications of seasonal rise and fall of small-pox were not wanting in other districts, more particularly in districts of the South and West groups. In the North and East groups the small-pox death-rates were 13 and 11½ per 100,000 respectively, whereas in the South, the Central, and the West groups the rates were 8, 5, and 4½ only.

During this F. period, *Hampstead* N. alone of all the five M. A. B. hospitals was not in use for small-pox. But the M. A. B. acute cases were more evenly distributed in hospital than at commencement of the previous epidemic. *Homerton* N., with 460, *Deptford* S., with 370, *Fulham* W., with 270, and *Stockwell* S., with 250 patients, accommodated respectively 34·0, 27·4, 20·0, and 18·6 per cent. of the M. A. B. cases. *Homerton* N. did not come into operation until February 1880, but thereafter it was freely used. *Deptford* S. was in operation throughout the period, but was not much used before February 1880, or after April. *Fulham* W. was in operation throughout the period, but was sparingly used between September 1879 and January 1880, and after March 1880. *Stockwell* S. was not in operation between November 1879 and April 1880, but after April it was freely used to the end of the period.

Table F. (giving for this and for antecedent periods the small-pox death-rates of the several districts and the operations of the several M. A. B. hospitals), shows, in its third column, the districts suffering increase of small-pox in the period to have been mainly East and North districts. Of the dozen heading the list, no less than five belong to the East group; but first of all comes Hackney N. (containing *Homerton* H.) with a rate nearly one-fourth greater than that of any other district, and to small-pox in Hackney the special prominence in this period of the North group is almost wholly due. Other four of the first dozen districts, namely, Camberwell, Greenwich (containing *Deptford* H.), St. Olave, and St. Saviour, belong to the South group. They have rates in this period little inferior to East districts, but owing perhaps to the severity of the small-pox borne by them in the preceding period, the growth in them of a new epidemic is not yet conspicuous. For a similar reason the amount of the rates in this period of Fulham W. (containing *Fulham* H.), and of Kensington W., and Chelsea W., contiguous to it, deserve notice. The facts as to the incidence of small-pox in this period on one and another district are further illustrated by the F. chart (facing page 30), which gives the *attack*-rate of each district, and shows the relations of the districts to each other and to the small-pox hospitals.

**F 2.**

## F. Period: September 1879 to September 1880.

*(12 months of very low prevalence of Small-pox in London, but with indication of coming epidemicity.)*

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those containing Small-pox Hospitals in Caps.

| D. 12 Months, September 1877 to September 1878. | E. 12 Months, September 1878 to September 1879. | F. 12 Months, September 1879 to September 1880. | Districts. | Local Relations in F. Period, with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period | | |
|---|---|---|---|---|---|---|---|
| | | | | | D. | E. | F. |
| 63·8 | 2·1 | 26·8 | **HACKNEY** - - - N. | CONTAINS HOMERTON M. A. B. HOSPITAL - - | 1,350 (*26·7*) | 50 (*2·5*) | 460 (*34·0*) |
| 51·8 | 11·2 | 19·6 | Whitechapel - - - E. | | | | |
| 29·2 | 0·8 | 18·9 | Shoreditch - - - E. | Homerton, 1¼ N.E. | | | |
| 47·7 | 47·7 | 15·5 | Camberwell - - - S. | Deptford on E. edge:—Stockwell, ¾ W. | | | |
| 157·1 | 3·4 | 13·7 | Stepney - - - - E. | | | | |
| 45·0 | 89·2 | 11·5 | **GREENWICH** - - S. | CONTAINS DEPTFORD M. A. B. HOSPITAL - - | 550 (*10·9*) | 1,000 (*50·0*) | 370 (*27·4*) |
| 103·2 | 1·8 | 10·4 | Mile End - - - - E. | Homerton, 1½ N. | | | |
| 30·5 | 21·5 | 9·7 | St. Olave - - - - S. | Deptford, ½ S. | | | |
| 52·2 | 32·2 | 9·6 | **FULHAM** - - - W. | CONTAINS FULHAM M. A. B. HOSPITAL - - | 750 (*14·9*) | 700 (*35·0*) | 270 (*20·0*) |
| 42·5 | 3·9 | 9·4 | Bethnal Green - - E. | Homerton, 1 N. | | | |
| 40·0 | 34·3 | 9·3 | St. Saviour - - - S. | Deptford, 1¼ S.E.:—Stockwell, 1½ S.W. | | | |
| 22·6 | 1·4 | 8·9 | *ISLINGTON** - - N. | (*Highgate Hospital herein.*) Homerton, 1½ E. - - | *?* | *?* | *129* |
| 84·8 | 2·1 | 8·5 | St. George's-in-East - E. | Deptford, 1¾ S. | | | |
| 22·3 | 2·6 | 7·3 | Holborn - - - - C. | | | | |
| 49·7 | 7·5 | 7·1 | **LAMBETH** - - - S. | CONTAINS STOCKWELL M. A. B. HOSPITAL - | 1,100 (*21·8*) | 150 (*7·5*) | 250 (*18·6*) |
| 47·7 | 17·0 | 6·8 | Chelsea - - - - W. | Fulham, ¼ W. | | | |
| 19·0 | 15·3 | 6·7 | Kensington - - - W. | Fulham, ½ W. and S. | | | |
| 43·2 | 5·1 | 6·3 | St. Pancras - - - N. | Highgate Hospital on N.E. edge | | | |
| 46·0 | 6·4 | 4·5 | Poplar - - - - E. | Homerton, 1 N.:—Deptford, 1¼ S.W. | | | |
| 28·6 | 2·2 | 4·4 | St. Giles and St. George C. | | | | |
| 23·7 | 12·8 | 4·3 | Wandsworth - - - S. | Stockwell, ¼ E.:—Fulham, 1 N.W. | | | |
| 17·4 | 3·2 | 3·2 | St. Marylebone - - N. | | | | |
| 4·3 | 8·6 | 2·1 | Westminster - - - W. | | | | |
| 11·7 | 7·7 | 1·9 | City - - - - - C. | | | | |
| 10·7 | 5·3 | 1·3 | St. George's, H. Square W. | Fulham, 1¼ W.:—Stockwell, 1½ S.E. | | | |
| 16·8 | 6·5 | — | Paddington - - - W. | | | | |
| 13·6 | 5·5 | — | Lewisham - - - S. | Deptford, 1¾ N.W. | | | |
| 17·9 | 3·0 | — | Strand - - - - C. | | | | |
| 14·8 | 2·5 | — | Woolwich - - - S. | | | | |
| 26·4 | — | — | **HAMPSTEAD** - - N. | HAMPSTEAD M. A. B. HOSPITAL CLOSED. Highgate N., 1 N.E. | 1,300 (*25·7*) | 100 (*5·0*) | — |

* See footnote to page 4.

**F 3.**

F. Period: September 1879 to September 1880.

(12 months of very low prevalence of Small-pox in London, but with indication of a coming Epidemic.)

*Operations of Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *upon inhabitants of certain Districts.*

*Homerton Small-pox Hospital.*—Did not admit any cases between September 1879 and February 1880. Thenceforward to end of period freely used.

Fortnightly admisions (*acute cases*). { Greatest number 52 / Smallest ,, 17 } Average (11 fortnights) 38. Total admissions, about 500.

Hackney N.—Only about a couple of dozen small-pox admissions from Hackney to M. A. B. hospitals in 1879–80, during closure of Homerton Hospital. But after re-opening of the hospital small-pox became much more prevalent; nine-tenths of the cases received by the M. A. B. in the whole period from Hackney occurred subsequent to the re-opening of Homerton Hospital. Dr. Tripe shows (in his report, 1880) that after closing of Homerton in September 1879 no small-pox cases occurred near the hospital during November, December, and January, and only one case occurred there in February; but that within a month of re-opening of the hospital several cases occurred in proximity to it. In the calendar year 1880, he shows small-pox occurring after February in certain streets within a quarter-mile of Homerton, seven times more abundant than that occurring during the whole period in the remainder of Hackney.

*Deptford Small-pox Hospital.*—In use throughout period, but in active operation February to April 1880 only. At the end of September 1879 received convalescents from Homerton on the occasion of temporary closure of that hospital against small-pox.

Fortnightly admissions (*acute cases*); average:—September to February, 11; February to end of April, 28; rest of period, 4. Total, about 400.

Greenwich S.—Chief incidence of small-pox attack coincident with major hospital operations.

*Camberwell* S.—No. 4 Ward, adjacent to Deptford H., and containing 20 per cent. of Camberwell population, contributed: October 1879 to January 1880 inclusive, 10 per cent.; February to May, 62 per cent.; and June to September, 15 per cent. of the small-pox coming under notice of the S. A. (Dr. Bristowe, Hospitals Commission Report, p. 334.)

*Fulham Small-pox Hospital.*—In operation throughout period, but used sparingly. Except in six successive fortnights of January, February, and March 1880, when admissions averaged 22, hospital operations averaged only 8 per fortnight. Total admissions, about 300. Did not receive any convalescents.

*Chelsea*, Fulham, and *Kensington* W.—Major incidence of small-pox attack coincided with chief operations of hospital. In whole period, houses invaded (per cent. of total in each area); in area within one mile of hospital, 0·58, in remainder of the three parishes, 0·10.

*Stockwell Small-pox Hospital.*—Not in operation between November 1879 and April 1880.

Fortnightly admissions: average of 8 fortnights of chief operations, 25. Total admissions, about 250.

Lambeth S.—Of small-pox cases sent to M. A. B. hospitals from Lambeth subsequent to November 1879, nearly *nine-tenths* were received subsequent to re-opening of Stockwell hospital in April 1880.

*Hampstead Small-pox Hospital.*—Remained closed throughout period.

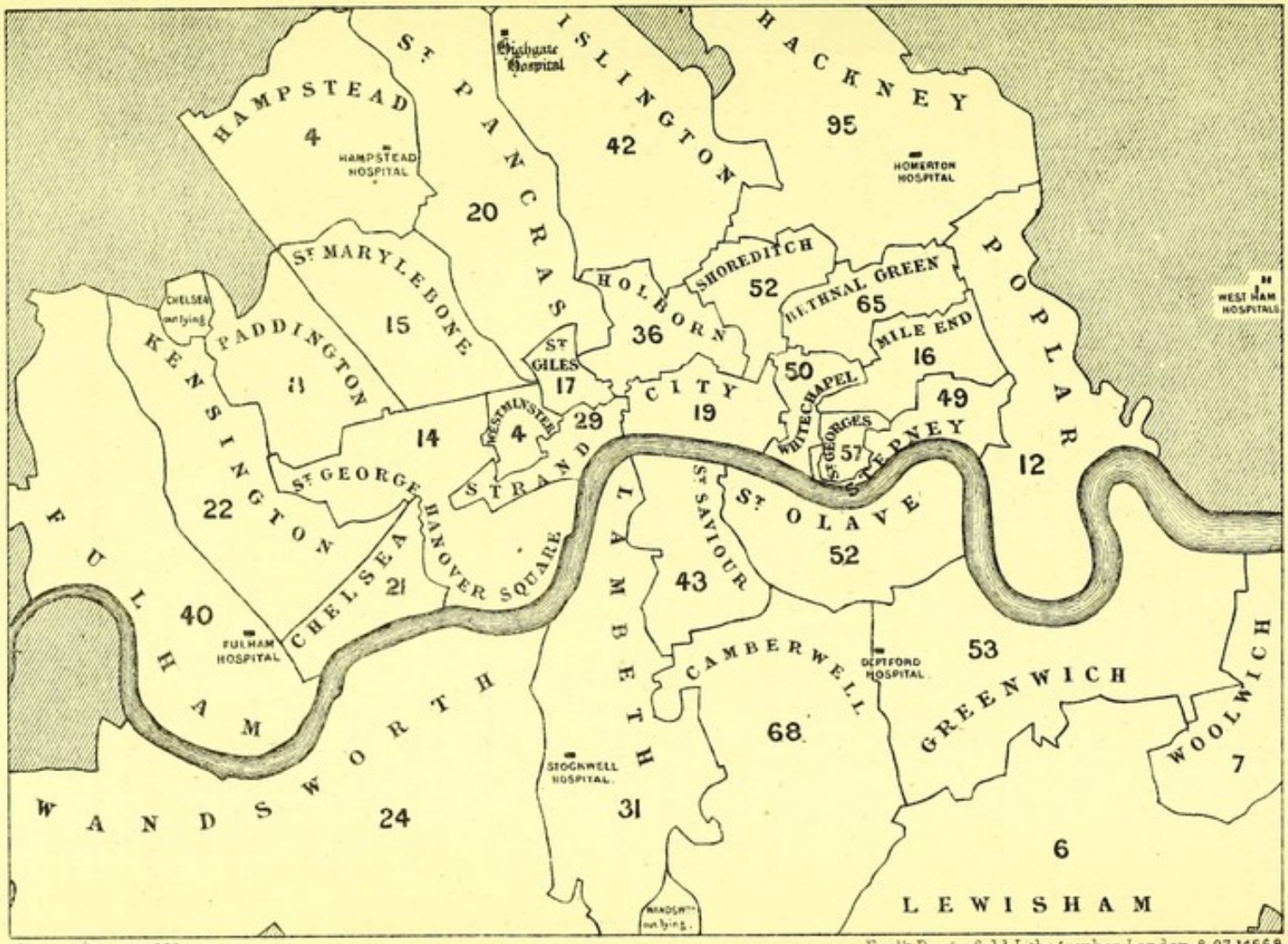
*St. Pancras* N.—In 1880, during closure of Hampstead H., Mr. Shirley Murphy shows (Report M. O. H. St. Pancras, 1884) the incidence of small-pox (houses invaded per 100 houses in each area) to have been: on area within one mile of Hampstead Hospital, 0·15; on remainder of parish, 0·24.

*Highgate (Private) Small-pox Hospital.*—In the above-quoted report, Mr. Shirley Murphy shows admissions to this hospital, January to September 1880, to have been 129. Also he shows for:—

*St. Pancras* N.—Incidence of small-pox in 1880 (houses invaded per 100 houses in each area),—on area 0–½ mile from Highgate H., 0·61; on area ½–1 mile, 0·00; on remainder of parish, 0·22.

# F. PERIOD: SEPTEMBER 1879 TO SEPTEMBER 1880.

*Smallpox Attacks per 100 000 population in each area referred to.*




| *Smallpox Hospitals and their Operations. Period F.* | | |
|---|---|---|
| *Name of M.A.B Hospital* | *Acute Smallpox Admissions to each* | |
| | *Number* | *Per cent* |
| *Homerton* | *460* | *34·0* |
| *Deptford* | *370* | *27·4* |
| *Fulham* | *270* | *20·0* |
| *Stockwell* | *250* | *18·6* |
| *Hampstead* | *not in use* | |

*[Highgate 129]*

Scale ½ Inch to a Mile.

Fred^k Dangerfield Lithographer, London 8.87 14668.

F4

To face p. 30

**F 5.**

## F. Period: September 1879 to September 1880.

*(Further Notes on the beginnings of epidemic Small-pox in London.)*

In the F. period of comparatively insignificant prevalence of the disease in London no less than ten (as compared with one only in the previous period) of the metropolitan districts evince a tendency to increase their small-pox. Six of the ten belong to the East group, other three to the North, and one to the Central group. Further, certain districts of the South and West groups are seen in this period to suffer quite as much as particular East districts aforetime especially prone to small-pox; and this notwithstanding that in the preceding period these South and West districts bore wellnigh the whole brunt of the current London small-pox. These are indications of a commencing fresh epidemic of small-pox in London, and comparison therefore of its inception with that of the previous epidemic becomes of interest. This has accordingly been made in the subjoined table, where are set out the facts as to the order of the several districts in regard of small-pox mortality and the facts also as to hospital operations in the F. and A. + B. periods respectively. It shows East districts prompt enough in both periods in responding to epidemic small-pox; but none of them so prompt as the district which contained for the particular period the M. A. B. hospital in chief use for small-pox. Further, it shows that the hospital district heading the list was *not the same* in the two periods.

| Rank in 1861-70. (Worst to Best.) | January to 18th November 1876. | | | Districts. | September 1879 to September 1880. | | |
|---|---|---|---|---|---|---|---|
| | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. | | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. |
| 25th | 4th | 18·8 | N. *Homerton* H., 350 ( = 36·8). | HACKNEY | 1st | 26·8 | N. *Homerton* H., 460 ( = 34·1). |
| 3rd | 6th | 9·8 | E. | Whitechapel | 2nd | 19·6 | E. |
| 8th | 16th | 3·9 | E. | Shoreditch | 3rd | 18·9 | E. |
| 23rd | 5th | 10·2 | S. | Camberwell | 4th | 15·5 | S. |
| 5th | 7th | 8·5 | E. | Stepney | 5th | 13·7 | E. |
| 12th | 18th | 3·1 | S. *Deptford* H. not open. | GREENWICH | 6th | 11·5 | S. *Deptford* H., 370 (= 27·4). |
| 7th | 17th | 3·8 | E. | Mile End | 7th | 10·4 | E. |
| 9th | 9th | 7·4 | S. | St. Olave | 8th | 9·7 | S. |
| 26th æq. | 26th | 0·9 | W. *Fulham* H. not open. | FULHAM | 9th | 9·6 | W. *Fulham* H., 270 (= 20·0). |
| 2nd | 10th | 7·1 | E. | Bethnal Green | 10th | 9·4 | E. |
| 13th | 3rd | 15·2 | S. | St. Saviour | 11th | 9·3 | S. |
| ? | 11th | 6·0 | N. (Highgate H.?) | *ISLINGTON** | 12th | 8·9 | N (Highgate H., 129.) |
| 6th | 21st æq. | 2·1 | E. | St. George's-in-East | 13th | 8·5 | E. |
| 10th | 15th | 4·0 | C. | Holborn | 14th | 7·3 | C. |
| 15th | 1st | 30·0 | S. *Stockwell* H., 600 (=63·2). | LAMBETH | 15th | 7·1 | S. *Stockwell* H., 250 (= 18·5). |
| 16th | 12th | 5·7 | W. | Chelsea | 16th | 6·8 | W. |
| 26th æq. | 14th | 4·3 | W. | Kensington | 17th | 6·7 | W |
| 22nd | 25th | 1·7 | N. | St. Pancras | 18th | 6·3 | N. |
| 4th | 27th | 0·6 | E. | Poplar | 19th | 4·5 | E. |
| 11th | 13th | 4·4 | C. | St. Giles and St. George | 20th | 4·4 | C. |
| 14th | 2nd | 17·1 | S. | Wandsworth | 21st | 4·3 | S. |
| 24th | 23rd æq. | 1·9 | N. | St. Marylebone | 22nd | 3·2 | N. |
| 20th æq. | 21st æq. | 2·1 | W. | Westminster | 23rd | 2·1 | W. |
| 19th | 8th | 7·8 | C. | City | 24th | 1·9 | C. |
| 17th | 19th æq. | 2·7 | W. | St. George's, H. Square | 25th | 1·3 | W. |
| 26th æq. | 23rd æq. | 1·9 | W. | Paddington | — | — | W. |
| 18th | 19th æq. | 2·7 | S. | Lewisham | — | — | S. |
| 20th æq. | — | — | C. | Strand | — | — | C. |
| 18th | — | — | S. | Woolwich | — | — | S. |
| 30th | 30th æq. | — | N. *Hampstead* H. not in use. | HAMPSTEAD | — | — | N. *Hampstead* H. not in use. |

* See footnote to page 4.

## G1. G. Period: September 1880 to September 1881.

(12 *months during which Small-pox again became severely Epidemic throughout the Metropolis.*)

In the winter of 1880–81 the epidemic which had had its beginnings in the preceding (F.) period, extended to all the metropolitan districts, and in the spring and early summer of 1881 small-pox raged again in London. By July the usual seasonal decline was manifest; though the disease evinced less disposition than in other years to die out in autumn.

In this G. period, the first cycle of new vigorous epidemicity of small-pox, the East group of districts headed the list with a rate of 89·7 per 100,000. And this group was far in advance of the others; the South and North groups having rates respectively not higher than 63·4 and 53·8, while the rate of the Central group was 34·3, and that of the West group only 28·6 per 100,000. Within the new epidemic, up to this stage, the rates of the several groups were as follows:—

| | | |
|---|---|---|
| | N. 66·7 | |
| W. 33·2 | C. 39·2 | E. 100·2 |
| | S. 71·4 | |

The small-pox of the G. period greatly taxed the resources of the Asylums Board. From September to November 1880, *Homerton* N. sufficed to accommodate a large proportion of the M. A. B. cases; but in December *Deptford* S. and *Stockwell* S. were brought freely into use. For only a short while these three hospitals, getting relief by drafting* their convalescent patients to *Fulham* W., sufficed for the demands of the epidemic: in January *Fulham* also had to be devoted to acute cases, and steps were taken for increasing the accommodation there. But before fresh wards were available a very great increase of small-pox in London completely filled all the M. A. B. hospitals, and many hundreds of cases were refused admission for want of room. In this emergency *Homerton* Fever Hospital N. was devoted to small-pox, and in May a hospital camp for convalescents was opened at Darenth, while in July the hospital ship "Atlas," borrowed from the Government and moored at Deptford, was fitted to receive small-pox. As soon as the camp at Darenth was established, all M. A. B. hospitals commenced drafting their convalescent patients there. In the whole G. period, *Deptford* and "*Atlas*" S., with 3,200; *Homerton* (H.H.) N., with 2,500; *Fulham* W., with 1,750; and *Stockwell* S., with 1,100, received respectively 37·4, 29·3, 20·4, and 12·9 per cent. of the total M. A. B. acute cases. Throughout the period *Hampstead* N. remained closed against small-pox.

Table G. (giving for this and for antecedent periods the small-pox death-rates of the several districts and the operations of the M. A. B. hospitals) shows, in its third column, Greenwich S. (containing *Deptford* and "*Atlas*" H.H.) advanced to head of the list, and Hackney N. (containing *Homerton* H.H.) displaced to third; the latter having been overtaken by Shoreditch E., as well as by Greenwich. These three districts, with Bethnal Green E. (which is fourth on the list), have rates varying between 120 and 170 per 100,000. Next come seven districts (four East and three South) with rates between 50 and 100, and then other four (one belonging to each of four several groups) with rates above 40 but below 50. First of all of the West group comes Fulham W. (containing *Fulham* H.) with a rate of 37, while near the bottom of the list are found mainly West and North districts, the least conspicuous for small-pox among them being Hampstead N., with a rate of only 13·2 per 100,000. Lowest of all is Lewisham S., with a rate of 10·9. The facts indicated in the above table are generally corroborated by Chart G. (facing page 34), which gives the small-pox *attack*-rates in the period, and shows the relations of the districts to each other and to the small-pox hospitals.

* See footnote to page 16.

G 2.

## G. Period: September 1880 to September 1881.

(12 *months during which Small-pox again became severely epidemic throughout the Metropolis.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period; those containing Small-pox Hospitals in Caps.

| E. 12 Months, September 1878 to September 1879. | F. 12 Months, September 1879 to September 1880. | G. 12 Months, September 1880 to September 1881. | Districts. | F.—G. 24 *Months, September* 1879 *to September* 1881. | Local Relations in G. Period, with Small-pox Hospitals placed within Two Miles of District.—Distances in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | E. | F. | G. |
| 89·2 | 11·5 | 162·3 | GREENWICH - - S. | *174·8* | CONTAINS DEPTFORD AND "ATLAS" M.A.B. HOSPITALS. | 1,000 (*50·0*) | (370 = 27·4) | 3,200 (*37·4*) |
| 0·8 | 18·9 | 148·5 | Shoreditch - - E. | *167·4* | Homerton, 1¼ N.E. | | | |
| 2·1 | 26·8 | 138·4 | HACKNEY - - N. | *165·2* | CONTAINS HOMERTON M. A. B. HOSPITAL | 50 (*2·5*) | (460 = 34·0) | 2,500 (*29·3*) |
| 3·9 | 9·4 | 122·9 | Bethnal Green - - E. | *132·3* | Homerton, 1 N. | | | |
| 2·1 | 8·5 | 93·3 | St. George's-in-East E. | *101·8* | "Atlas," 1¾ S. | | | |
| 3·4 | 13·7 | 85·4 | Stepney - - - E. | *99·1* | "Atlas," 1½ S. | | | |
| 47·7 | 15·5 | 80·9 | Camberwell - - S. | *96·4* | Deptford on E. edge:—"Atlas," 1¼ E.:—Stockwell, ¾ W. | | | |
| 11·2 | 19·6 | 70·1 | Whitechapel - - E. | *89·7* | | | | |
| 21·5 | 9·7 | 66·1 | St. Olave - - - S. | *75·8* | Deptford, ½ S.:—"Atlas," ¼ S.E. | | | |
| 34·3 | 9·3 | 63·5 | St. Saviour - - S. | *72·8* | Deptford, 1¼ S.E.:—Stockwell, 1½ S.W. | | | |
| 1·8 | 10·4 | 59·7 | Mile End - - - E. | *70·1* | | | | |
| 3·0 | — | 47·6 | Strand - - - C. | *47·6* | | | | |
| 12·8 | 4·3 | 45·6 | Wandsworth and C. S. | *49·9* | Stockwell, ¼ E.:—Fulham, 1 N.W. | | | |
| 6·4 | 4·5 | 45·4 | Poplar - - - E. | *49·9* | "Atlas," ¼ S.:—Homerton, 1 N.:—Deptford, 1¼ S.W. | | | |
| 1·4 | 8·9 | 41·7 | *ISLINGTON** - - N. | *50·6* | (*Highgate S.P. Hospital herein.*) Homerton, 1½ E. | *7* | *129* | *689* |
| 2·5 | — | 38·3 | Woolwich - - - S. | *38·3* | | | | |
| 32·2 | 9·6 | 37·4 | FULHAM - - - W. | *47·0* | CONTAINS FULHAM M.A.B. HOSPITAL - | 700 (*35·0*) | (270 = 20·0) | 1,750 (*20·4*) |
| 7·7 | 1·9 | 36·9 | City - - - - C. | *38·8* | | | | |
| 7·5 | 7·1 | 35·9 | LAMBETH - - S. | *43·0* | CONTAINS STOCKWELL M.A.B. HOSPITAL | 150 ( *7·5*) | (250 = 18·6) | 1,100 (*12·9*) |
| 2·6 | 7·3 | 34·2 | Holborn - - - C. | *41·5* | | | | |
| 15·3 | 6·7 | 31·9 | Kensington - - W. | *38·6* | Fulham, ½ W. and S. | | | |
| 17·0 | 6·8 | 30·6 | Chelsea - - - W. | *37·4* | Fulham, ¼ W:—Stockwell, 1¾ S.E. | | | |
| 8·6 | 2·1 | 30·1 | Westminster - - W. | *32·2* | | | | |
| 5·1 | 6·3 | 26·7 | St. Pancras - - N. | *32·0* | Highgate H. on N.E. edge. | | | |
| 5·3 | 1·3 | 25·4 | St. Geo., H. Square W. | *26·7* | Fulham, 1¼ W.:—Stockwell, 1½ S.E. | | | |
| 3·2 | 3·2 | 23·2 | St. Marylebone - N. | *26·4* | | | | |
| 2·2 | 4·4 | 22·0 | St. Giles and St. Geo. C. | *26·4* | | | | |
| 6·5 | — | 16·8 | Paddington - - W. | *16·8* | | | | |
| — | — | 13·2 | HAMPSTEAD - - N. | *13·2* | HAMPSTEAD M. A. B. HOSPITAL NOT IN USE. Highgate H., 1 N.E. | 100 ( *5·0*) | — | — |
| 5·5 | — | 10·9 | Lewisham - - - S. | *10·9* | "Atlas," 1¼ N.:—Deptford, 1¼ S.W. | | | |

E 53026.

* See footnote to page 4.

**G 3.**

G. Period: September 1880 to September 1881.

(12 months during which Small-pox again became severely epidemic in London.)

*Operations of Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *upon inhabitants of certain Districts.*

*Deptford and "Atlas"* (moored at Deptford) *Small-pox Hospitals.*—"Atlas" not opened until July 1881; received some 300 acute cases. Deptford not much used until November 1880; thenceforward in very full operation. Began drafting its convalescents in January: to Fulham at that date, to Darenth during and after May.*

Fortnightly admissions (*acute cases*): average, September to middle of November 1880, 3; November to August (20 fortnights), 130.

Total admissions to "*Atlas*" and *Deptford* H.H. about 3,200.

Greenwich S.—Very little small-pox before December 1880; thereafter small-pox raged in the parish.

*Camberwell* S.—No. 4 Ward, adjacent to Deptford H., and containing 20 per cent. of Camberwell population, contributed in the period 40 per cent. of the small-pox cases coming to the notice of the S. A. (Dr. Bristowe, Report Hospitals Commission, p. 334.)

*Homerton Small-pox Hospital.*—In operation throughout period; from end of April to August Homerton Fever Hospital also in use for small-pox. Drafting of convalescents freely practised.*

Fortnightly admissions (*acute cases*). { Greatest number 300; Smallest (Nov. 1880) number 21. } Average (26 fortnights) 96. Total acute admissions some 2,500.

Hackney N.—Heavy incidence of small-pox attack throughout period. In the calendar year 1881 small-pox attacks were (Dr. Tripe shows in his report for 1881) three times more abundant in certain streets within ¼-mile of Homerton Hospital than in the remainder of the district.

*Fulham Small-pox Hospital.*—Used until January 1881 mainly for convalescents. Afterwards in full operation until beginning of September, when its use was restricted, by injunction, to reception of small-pox from the area within one mile of the building. Commenced drafting to Darenth in May.*

Fortnightly admissions (*acute cases*). { Greatest number 170; Smallest ,, 40-50 } Average (January to September) 100. Total acute cases some 1,750.

*Chelsea*, Fulham, and *Kensington* W.—Small-pox very scarce up to January 1881. But great outburst, especially affecting neighbourhood of hospital, at end of January. (See Fulham reports.) Houses invaded (per cent. of total in each area), December 1880 to 2nd April 1881: in area within one mile of the hospital, 1·21; in the remainder of the three parishes, 0·32. From April to September they were respectively 1·50 and 0·77.

*Stockwell Small-pox Hospital.*—Sparingly in operation (average admissions per fortnight 3) until middle of November 1880; thenceforward freely used to end of period. Not much drafting* as compared with other M. A. B. hospitals.

Fortnightly admissions (after November) (*acute cases*). { Greatest number 66; Smallest ,, 26 } Average 50. Total acute cases about 1,100.

Lambeth S.—Not a dozen cases of small-pox admitted to M. A. B. hospitals from Lambeth between September and middle of November 1880. Afterwards small-pox became abundant there.

*Hampstead Hospital.*—Remained closed against small-pox throughout the period.

*St. Pancras* N.—Incidence of small-pox (houses invaded per 100 in each area) in 1881:—on area within 1 mile of Hampstead Hospital, 1·50; on remainder of parish, 1·60. (Mr. Shirley Murphy, Report M. O. H. St. Pancras, 1884.)

*Highgate (Private) Small-pox Hospital.*—In the above-quoted report Mr. Shirley Murphy shows 689 cases admitted to Highgate Hospital in period. Also he shows for:—

*St. Pancras* N.—Incidence of small-pox 1881 (houses invaded per 100 in each area): on area 0–½ mile from Highgate Hospital, 5·75; on area ½–1 mile, 1·50; on remainder of parish, 1·50.

*Darenth Camp.*—Brought into use May 1880, and in operation to end of period.

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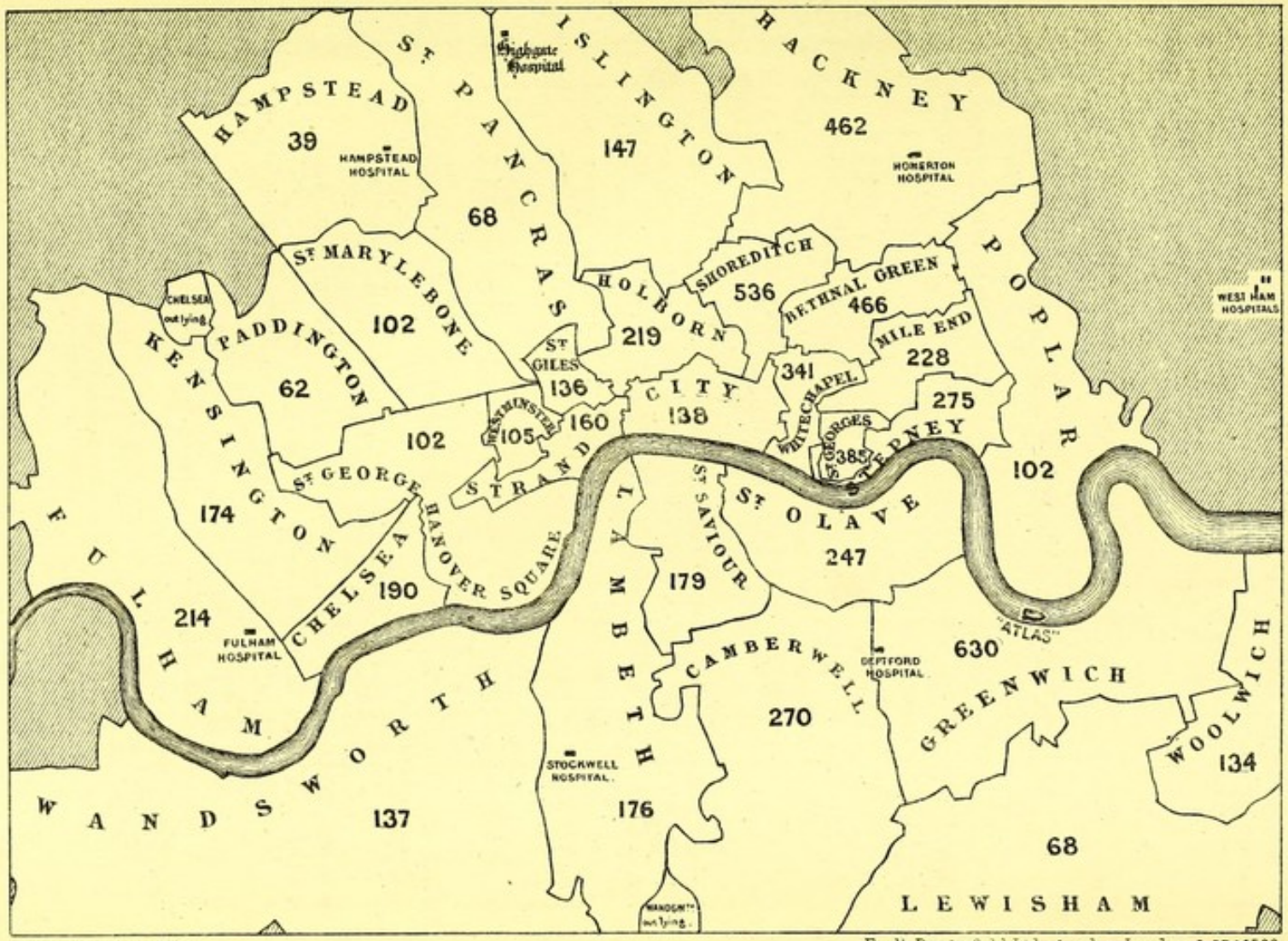
* See footnote to page 6.

# G. PERIOD: SEPTEMBER 1880 TO SEPTEMBER 1881.

*Smallpox Attacks per 100,000 population in each area referred to.*




| Smallpox Hospitals and their Operations. Period G. | | |
|---|---|---|
| Name of M.A.B. Hospital. | Acute Smallpox Admissions w each. | |
| | Number | Per cent. |
| Deptford & Atlas" | 3200 | 37·4 |
| Homerton | 2500 | 29·3 |
| Fulham | 1750 | 20·4 |
| Stockwell | 1100 | 12·9 |
| Hampstead | not in use. | |

[Highgate 689]

Scale ½ Inch to a Mile.

Fred^k Dangerfield Lithographer, London 8.87.14668.

G4

To face p. 34.

## G. Period: September 1880 to September 1881.

*(Notes on the Facts of the Epidemic to date.)*

The facts of the G. period comprising the first pronounced seasonal rise, culmination, and decline of a new epidemic of small-pox in London, go to show, as did the facts for a similar (C.) period of 1876–77, that whatever the influence determining the locality of earliest chief manifestation of epidemic small-pox, such influence tends, *as time goes on*, to become subordinated to a variety of conditions giving effect to the intrinsic ability of certain districts, or groups of districts, to suffer severely from the malady. Taking the whole epidemic in each instance to conclusion of its first pronounced seasonal cycle, the list is headed in both cases by the district which had been accommodating in its hospital the largest proportion of M. A. B. small-pox cases; but, as in 1876–77, so now in 1880–81, certain eastern districts which antecedent to establishment of M. A. B. hospitals showed special predilection for fatal small-pox, are seen forcing their way to the front, after a fashion giving promise, as before, of ability, by the end of the next ensuing cycle, to displace altogether the particular hospital district which to this stage of the epidemic had been promptest in reacting to small-pox. The facts are illustrated in the subjoined table, where it is seen that the hospital district heading the list is *not the same* in the two periods.

| Rank in 1861–70. (Worst to Best.) | January 1876 to September 1877. | | | Districts. | September 1879 to September 1881. | | |
|---|---|---|---|---|---|---|---|
| | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and the Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. | | Rank. (Worst to Best.) | Small-pox Death-Rate per 100,000. | Locality of Districts, and the Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. |
| 12th | 22nd | 38·2 | S. *Deptford* H., 450 (= 5·5). | GREENWICH - - | 1st | 174·8 | S. *Deptford* H., 3,570 (= 36·1). |
| 8th | 21st | 39·4 | E. | Shoreditch - - - | 2nd | 167·4 | E. |
| 25th | 1st | 217·7 | N. *Homerton* H., 3,250 (= 39·4). | HACKNEY - - - | 3rd | 165·2 | N. *Homerton* H., 2,960 (= 29·9). |
| 2nd | 12th | 64·6 | E. | Bethnal Green - - | 4th | 132·3 | E. |
| 6th | 7th | 84·8 | E. | St. George's-in-East - | 5th | 101·8 | E. |
| 5th | 5th | 109·3 | E. | Stepney - - - - | 6th | 99·1 | E. |
| 23rd | 8th | 82·0 | S. | Camberwell - - - | 7th | 96·4 | S. |
| 3rd | 10th | 70·1 | E. | Whitechapel - - - | 8th | 89·7 | E. |
| 9th | 6th | 89·8 | S. | St. Olave - - - - | 9th | 75·8 | S. |
| 13th | 4th | 112·6 | S. | St. Saviour - - - | 10th | 72·8 | S. |
| 7th | 10th | 70·1 | E. | Mile End - - - - | 11th | 70·1 | E. |
| ? | 27th | 24·0 | N. (Highgate H. ?) | *ISLINGTON** - - | 12th | 50·6 | N. (Highgate H., 800.) |
| 14th | 9th | 77·9 | S. | Wandsworth - - - | 13th } | 49·9 | S. |
| 4th | 2nd | 172·5 | E. | Poplar - - - - | 13th } | 49·9 | E. |
| 20th æq. | 28th | 23·8 | C. | Strand - - - - | 15th | 47·6 | C. |
| 26th æq. | 26th | 24·4 | W. *Fulham* H., 300 (= 3·6). | FULHAM - - - | 16th | 47·0 | W. *Fulham* H., 2,020 (=20·4). |
| 15th | 3rd | 126·2 | S. *Stockwell* H., 2,050 (= 24·9). | LAMBETH - - - | 17th | 43·0 | S. *Stockwell* H., 1,350 (=13·6). |
| 10th | 19th | 39·6 | C. | Holborn - - - - | 18th | 41·5 | C. |
| 19th | 23rd | 35·0 | C. | City - - - - - | 19th | 38·8 | C. |
| 26th æq. | 13th | 55·2 | W. | Kensington - - - | 20th | 38·6 | W. |
| 18th | 30th | 14·8 | S. | Woolwich - - - | 21st | 38·3 | S. |
| 16th | 17th | 44·3 | W. | Chelsea - - - - | 22nd | 37·4 | W. |
| 20th æq. | 24th | 32·2 | W. | Westminster - - - | 23rd | 32·2 | W. |
| 22nd | 14th | 52·1 | N. | St. Pancras - - - | 24th | 32·0 | N. |
| 17th | 18th | 40·8 | W. | St. George's, H. Square | 25th | 26·7 | W. |
| 24th | 15th | 50·3 | N. | St. Marylebone - - | 26th } | 26·4 | N. |
| 11th | 25th | 28·6 | C. | St. Giles and St. George | 26th } | 26·4 | C. |
| 26th æq. | 16th | 44·8 | W. | Paddington - - - | 28th | 16·8 | W. |
| 30th | 19th | 39·6 | N. *Hampstead* H., 2,200 (26·6). | HAMPSTEAD - - | 29th | 13·2 | N. *Hampstead* H. not in use. |
| 29th | 29th | 16·4 | S. | Lewisham - - | 30th | 10·9 | S. |

* See footnote on page 4.

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

## H. Period: September 1881 to September 1882.

**H1.** (12 *months of commencing decadence of Epidemic Small-pox in London.*)

During the H. period, which, like the D. period, was the second consecutive cycle of an epidemic, there was an almost unhoped for amount of decadence of small-pox in London. Nevertheless the disease was notably severe and fatal in certain districts, and in these its usual seasonal rise, culmination, and decline was well marked.

In this the second cycle of the epidemic, small-pox fell with especial severity on the South group of districts, which had a rate of 32·7, and with less though pronounced force on the East group, where the rate was 18·7 per 100,000. In the North and Central groups the amounts of small-pox were comparatively insignificant, their rates being only 9·4 and 9·2 respectively; while lowest of all was the West group with a rate of less than 5 per 100,000. Within the epidemic, up to this stage, the rates of the several groups were:—

| | | |
|---|---|---|
| | N. 76·2 | |
| W. 38·2 | C. 48·5 | E. 110·1 |
| | S. 104·1 | |

In the H. period the hospital accommodation provided by the Asylums Board in the previous period was not long in proving in excess of the requirements of London. For a while drafting* of convalescent patients from the intra-urban hospitals (especially from *Deptford*) to Darenth, was continued; but early in 1882 it was found practicable to close this camp, and thereafter (until August when it too was closed) the "*Atlas*," moored at Deptford, was made to receive convalescents as well as acute cases. Throughout the period *Deptford* S. was in full use, and *Stockwell* S. was also freely used until May; though its operations were at no time other than trivial when compared with those of *Deptford*, and seemingly it did not draft many of its convalescents. *Homerton* N., though kept going throughout the period, was very sparingly used, and after November 1881 drafted very few convalescents. *Fulham* W., whose operations had been greatly limited, by injunction, at the close of the previous period, ceased altogether to take patients at the end of 1881. *Hampstead* N. remained closed throughout. In the whole H. period the acute cases of the M. A. B. were distributed as follows:—*Deptford* and "*Atlas*" S., 2,100 (= 74·2); *Stockwell* S., 500 (=17·6); *Homerton* N., 200 (= 7·2); and *Fulham* W., 30 (= 1·0) per cent. of the total M. A. B. cases.

Table H. (giving for this and for antecedent periods the small-pox death-rates of the several districts, and the operations of the M. A. B. hospitals),—shows, in its third column, in this cycle of commencing decay of small-pox, Greenwich S. (containing *Deptford* and "*Atlas*" H.H.) at head of the list, and Camberwell S. and St. Olave S., districts contiguous to it, second and third. All three have rates above 50 per 100,000. Next come four districts (three East and one South), with rates between 30 and 41, and only one other district (Lewisham S.) with a rate above 20. Of the remaining 22 districts only eight (including Hackney N. and Lambeth S.) have rates above 10, while 14 (including Hampstead N. and Fulham W.) have rates varying from 9·9 to 1·2 per 100,000. The facts above recorded as to incidence of small-pox in this period are generally corroborated by Chart H. (facing page 38), giving the *attack*-rates in the period of the several districts, and showing the relations of the districts to each other and to the small-pox hospitals.

* See footnote to page 16.

**H 2.**

## H. Period: September 1881 to September 1882.

(12 *months of commencing decadence of Epidemic Small-pox in London.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after Distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those containing Small-pox Hospitals in Caps.

| F. 12 Months, September 1879 to September 1880. | G. 12 Months, September 1880 to September 1881. | H. 12 Months, September 1881 to September 1882. | Districts. | *F.—H.* 36 *Months, September* 1879 *to September* 1882. | Local Relations in H. Period with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | F. | G. | H. |
| 11·5 | 162·3 | 75·4 | GREENWICH - - S. | *249·2* | CONTAINS DEPTFORD AND "ATLAS" M. A. B. HOSPITALS. | 370 (*27·4*) | 3,200 (*57·4*) | 2,100 (*74·2*) |
| 15·5 | 80·9 | 60·0 | Camberwell - - S. | *156·4* | Deptford on E. edge:—"Atlas," 1½ E.:—Stockwell, ¾ W. | | | |
| 9·7 | 66·1 | 51·3 | St. Olave - - - S. | *127·1* | Deptford, ½ S.:—"Atlas," ¾ S.E. | | | |
| 13·7 | 85·4 | 41·0 | Stepney - - - E. | *140·1* | "Atlas," 1½ S. | | | |
| 8·5 | 93·3 | 36·0 | St. George's-in-East E. | *137·8* | "Atlas," 1¾ S. | | | |
| 9·3 | 63·5 | 34·8 | St. Saviour - - S. | *107·6* | Deptford, 1¼ S.E.:—Stockwell, 1½ S.W. | | | |
| 4·5 | 45·4 | 32·6 | Poplar - - - E. | *82·5* | "Atlas," ¾ S.:—Homerton, 1 N.:—Deptford, 1¼ S.W. | | | |
| — | 10·9 | 25·9 | Lewisham - - - S. | *36·8* | "Atlas," 1¼ N.:—Deptford, 1¾ N.W. | | | |
| 19·6 | 70·1 | 15·4 | Whitechapel - - E. | *105·1* | | | | |
| — | 47·6 | 14·9 | Strand - - - C. | *62·5* | | | | |
| 2·1 | 30·1 | 12·9 | Westminster - - W. | *45·1* | | | | |
| 26·8 | 138·4 | 12·3 | HACKNEY - - N. | *177·5* | CONTAINS HOMERTON M. A. B. HOSPITAL. | 460 (*34·0*) | 2,500 (*29·3*) | 200 (*7·2*) |
| 8·9 | 41·7 | 11·3 | *ISLINGTON** - - *N.* | *61·9* | (*Highgate S. P. Hospital herein.*) Homerton, 1¼ E. | *129* | *689* | *286* |
| 7·1 | 35·9 | 11·0 | LAMBETH - - S. | *54·0* | CONTAINS STOCKWELL M. A. B. HOSPITAL. | 250 (*18·6*) | 1,100 (*12·9*) | 500 (*17·6*) |
| 6·3 | 26·7 | 10·6 | St. Pancras - - N. | *43·6* | Highgate H. on N.E. edge. | | | |
| 7·3 | 34·2 | 10·5 | Holborn - - - C. | *52·0* | | | | |
| — | 38·3 | 9·9 | Woolwich - - - S. | *48·2* | | | | |
| 9·4 | 122·9 | 9·4 | Bethnal Green - E. | *141·7* | Homerton, 1 N. | | | |
| 10·4 | 59·7 | 8·5 | Mile End - - - E. | *78·6* | | | | |
| 6·8 | 30·6 | 6·8 | Chelsea - - - W. | *44·2* | Fulham, ¼ W.:—Stockwell, 1¼ S.E. | | | |
| 4·4 | 22·0 | 6·6 | St. Giles and St. Geo. C. | *33·0* | | | | |
| 1·3 | 25·4 | 5·3 | St. Geo., H. Square W. | *32·0* | Fulham, 1¼ W.:—Stockwell, 1¼ S.E. | | | |
| 9·6 | 37·4 | 5·2 | FULHAM - - - W. | *52·2* | CONTAINS FULHAM M. A. B. HOSPITAL - | 270 (*20·0*) | 1,750 (*20·4*) | 30 (*1·0*) |
| 4·3 | 45·6 | 5·2 | Wandsworth & C. - S. | *55·1* | Stockwell, ¼ E.:—Fulham, 1 N.W. | | | |
| 18·9 | 148·5 | 4·7 | Shoreditch - - E. | *172·1* | Homerton, 1¼ N.E. | | | |
| — | 16·8 | 4·7 | Paddington - - W. | *21·5* | | | | |
| — | 13·2 | 4·4 | HAMPSTEAD - - N. | *17·6* | (HAMPSTEAD M. A. B. HOSPITAL NOT IN USE.) Highgate H., 1 N.E. | — | — | — |
| 1·9 | 38·9 | 3·9 | City - - - - C. | *42·7* | | | | |
| 3·2 | 23·2 | 2·6 | St. Marylebone - N. | *29·0* | | | | |
| 6·7 | 31·9 | 1·2 | Kensington - - W. | *39·8* | Fulham, ¼ W. and S. | | | |

* See footnote to page 4.

**H 3.**

H. PERIOD: SEPTEMBER 1881 to SEPTEMBER 1882.

(12 months of commencing decadence of Epidemic Small-pox in London.)

*Operations of Small-pox Hospitals, and facts as to incidence of Small-pox* ATTACK *upon the inhabitants of certain Districts.*

*Deptford, and "Atlas"* (moored off Deptford) *Small-pox Hospitals.*—Both in full operation throughout period, but "Atlas" used mainly for convalescents after closure of Darenth Camp early in 1882. While camp remained open much drafting thereto.*

Fortnightly admissions (*acute cases*). { Greatest number - 140; Smallest ,, (at end of period) - - 12 } Average (22 fortnights) 100. Total acute cases 2,100.

GREENWICH S.—Suffered more small-pox in period (see map) than any other district.

*Camberwell* S.—Dr. Bristowe's data (Report Hospitals Commission, page 334) do not extend beyond 1881. In the last 3 months of that year, however, No. 4 Ward, adjacent to Deptford and containing 20 per cent. of the population of Camberwell, furnished 69 per cent. of the small-pox cases coming under notice of the Camberwell S. A.

*Stockwell Small-pox Hospital.*—In full operation from September 1881 to May 1882; very sparingly used afterwards. ? Any drafting of convalescents.

Fortnightly admissions (Sept. to May) (*acute cases*). { Greatest number - 53; Smallest ,, - 14 } Average 26. Total admissions some 500.

LAMBETH S.—Small-pox prevailed in parish until May, after which date it gradually declined.

*Homerton Small-pox Hospital.*—In operation throughout the period, but very sparingly used. Drafted cases to "Atlas" or Darenth in early part of period mainly.

Fortnightly admissions (*acute cases*): only once (Nov. 1881) so many as 15; rarely above half-a-dozen. Average 8. Total about 200.

HACKNEY S.—More than half the cases sent from Hackney to M. A. B. were received before January 1882. Dr. Tripe (report for 1882) shows that only 79 cases of small-pox were ascertained to have occurred in Hackney in the calendar year 1882; but, as before, the incidence of the disease was heaviest within ¼-mile of Homerton H.

*Fulham Small-pox Hospital.*—After limitation by injunction of the operations of this hospital in September 1881, admissions per fortnight to it declined from 9 in October to 5 in November; and in December the hospital was closed against small-pox. Admissions about 30.

*Chelsea*, FULHAM, and *Kensington* W.—Shortly after closure of Fulham Hospital, small-pox died out in the three parishes. Incidence of small-pox (houses invaded per 100 houses in each area) from January to September 1882: on area within one mile of hospital, 0·02; on remainder of the three parishes, 0·09.

*Hampstead Hospital.*—Not in use for small-pox throughout period.

*St. Pancras* N.—Incidence of small-pox (houses invaded per 100 in each area) in 1882: on area within one mile of Hampstead Hospital, 0·12; on remainder of St. Pancras, 0·14. (Mr. Shirley Murphy, Report M. O. H. St. Pancras, 1884.)

*Highgate (Private) Small-pox Hospital.*—In the above-quoted report Mr. Shirley Murphy shows admissions to this hospital in period to have been 286. Also he shows for:—

*St. Pancras* N.—Incidence of small-pox (houses invaded per 100 in each area) in 1882: on area 0—½ mile from Highgate Hospital, 0·20; on area ½—1 mile, 0·05; on remainder of parish, 0·13.

*Darenth Camp.*—Closed early in 1882.

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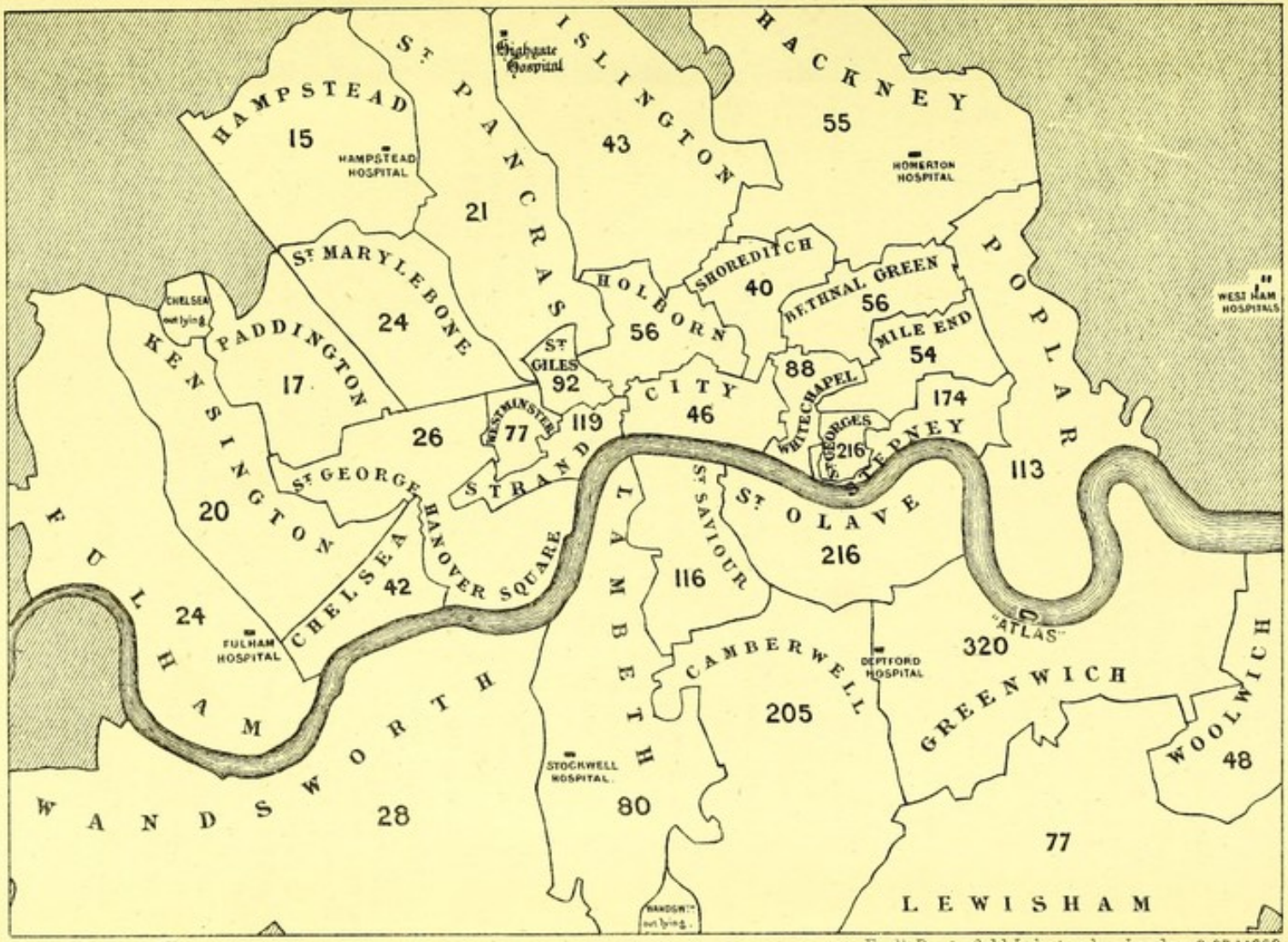
* See footnote to page 16.

# H. PERIOD: SEPTEMBER 1881 TO SEPTEMBER 1882.

*Smallpox Attacks per 100,000 population in each area referred to.*




| Smallpox Hospitals and their Operations. Period H. | | |
|---|---|---|
| Name of M.A.B Hospital. | Acute Smallpox Admissions to each. | |
| | Number | Per cent. |
| Deptford & "Atlas" | 2100 | 74·2 |
| Stockwell | 500 | 17·6 |
| Homerton | 200 | 7·2 |
| Fulham | 30 | 1·0 |
| Hampstead | not in use | |

[ Highgate 286 ]

Scale ½ Inch to a Mile.

Fred^k Dangerfield Lithographer. London 6.87.14668.

H4.

To face p. 38.

## H. Period: September 1881 to September 1882.

*(Summary of chief Facts of the Epidemic up to date.)*

In the H. period, like the D. period, we are dealing with a second consecutive cycle of an epidemic. But unlike the D. period it was a season of great declension of the epidemic in London; and especially does it differ from the D. period as regards certain East districts, which on that occasion, by further increasing their small-pox, once more asserted (as in 1861–70) their supremacy over all other districts. These East districts are not found in the H. period to have fulfilled, by increasing their small-pox, their promise of the period (G.) immediately preceding it. On the contrary they have lost the epidemic to an extent greater than particular South districts with which they were in the preceding period competing for first place. There would seem suggestion here of curtailment of the epidemic under consideration, *i.e.*, of omission of a whole cycle of vigorous small-pox, and the H. period would appear, therefore, to correspond rather with the E. period of the previous epidemic, in which there was, as now, very marked decadence of small-pox in most of the metropolitan districts. Accordingly in the subjoined table comparison is made of the E. and H. periods, both of them conspicuous for waning of epidemic small-pox in London.

The table illustrates once again the superior ability, *in retention of small-pox during decadence of an epidemic*, of the district containing the M. A. B. small-pox hospital in chief use during the period. As before, Greenwich S. heads the list, and not far behind it are the other South districts in closest relation with it and with its hospital.

| Rank in 1861–70. (Worst to Best.) | September 1878 to September 1879. | | | Districts. | September 1881 to September 1882. | | |
|---|---|---|---|---|---|---|---|
| | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals during Period. | | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals during Period. |
| 12th | 1st | 89·2 | S. *Deptford* H., 1,000 (=50·0). | GREENWICH | 1st | 75·4 | S. *Deptford* and "*Atlas*" H.H., 2,100 (=74·2). |
| 23rd | 2nd | 47·7 | S. | Camberwell | 2nd | 60·0 | S. |
| 9th | 5th | 21·5 | S. | St. Olave | 3rd | 51·3 | S. |
| 5th | 19th | 3·4 | E. | Stepney | 4th | 41·0 | E. |
| 6th | 25th | 2·1 | E. | St. George's-in-East | 5th | 36·0 | E. |
| 13th | 3rd | 34·3 | S. | St. Saviour | 6th | 34·8 | S. |
| 4th | 14th | 6·4 | E. | Poplar | 7th | 32·6 | E. |
| 29th | 15th | 5·5 | S. | Lewisham | 8th | 25·9 | S. |
| 3rd | 9th | 11·2 | E. | Whitechapel | 9th | 15·4 | E. |
| 20th æq. | 21st | 3·0 | C. | Strand | 10th | 14·9 | C. |
| 20th æq. | 10th | 8·6 | W. | Westminster | 11th | 12·9 | W. |
| 25th | 25th | 2·1 | N. *Homerton* H., 50 (=2·5). | HACKNEY | 12th | 12·3 | N. *Homerton* H., 200 (=7·2). |
| ? | 28th | 1·4 | N. (Highgate H.?) | *ISLINGTON** | 13th | 11·3 | N. (Highgate H., 286.) |
| 15th | 12th | 7·5 | S. *Stockwell* H., 150 (=7·5). | LAMBETH | 14th | 11·0 | S. *Stockwell* H., 500 (=17·6). |
| 22nd | 17th | 5·1 | N. | St. Pancras | 15th | 10·6 | N. |
| 10th | 22nd | 2·6 | C. | Holborn | 16th | 10·5 | C. |
| 18th | 23rd | 2·5 | S. | Woolwich | 17th | 9·9 | S. |
| 2nd | 18th | 3·9 | E. | Bethnal Green | 18th | 9·4 | E. |
| 7th | 27th | 1·8 | E. | Mile End | 19th | 8·5 | E. |
| 16th | 6th | 17·0 | W. | Chelsea | 20th | 6·8 | W. |
| 11th | 24th | 2·2 | C. | St. Giles and St. George | 21st | 6·6 | C. |
| 17th | 16th | 5·3 | W. | St. George's, H. Square | 22nd | 5·3 | W. |
| 26th æq. | 4th | 32·2 | W. *Fulham* H., 700 (=35·0). | FULHAM | 23rd | 5·2 | W. *Fulham* H., 30 (=1·0). |
| 14th | 8th | 12·8 | S. | Wandsworth | 23rd | 5·2 | S. |
| 8th | 29th | 0·8 | E. | Shoreditch | 25th | 4·7 | E. |
| 26th æq. | 13th | 6·5 | W. | Paddington | 25th | 4·7 | W. |
| 30th | 30th | — | N. *Hampstead* H., 100 (=5·0). | HAMPSTEAD | 27th | 4·4 | N. *Hampstead* H. not in use. |
| 19th | 11th | 7·7 | C. | City | 28th | 3·9 | C. |
| 24th | 20th | 3·2 | N. | St. Marylebone | 29th | 2·6 | N. |
| 26th æq. | 7th | 13·3 | W. | Kensington | 30th | 1·2 | W. |

* See footnote to page 4.

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

I 1. I. Period: September 1882 to September 1883.

(12 months of extreme Ebb of Small-pox in London.)

In this period small-pox fell to a lower level than in any previous period since 1876. In every district but one (St. Marylebone N.) there was less fatal small-pox than in the previous period, and for the whole metropolis the small-pox death-rate amounted to but 4 per 100,000 population.

During this third cycle of the now expiring epidemic, the South group of districts suffered most, but with a rate of only 5·9. Next came the Central and North groups, with rates of 3·9 and 3·5 respectively; the East group had a rate no higher than 2·8, and the West group a rate of 0·3 per 100,000 only.

In this period three of the M. A. B. hospitals were in use for small-pox. *Homerton* N. received 300 (=48·4); *Deptford* S. 250 (=40·3); and *Stockwell* S. 70 (=11·3) of the total M. A. B. cases. *Homerton* N., which was kept going throughout the period, drafted in the early part of it a few convalescents to *Deptford*. *Deptford* S. was in use from September 1882 to August 1883, but was used sparingly after March: while in chief use its operations were greater than those of *Homerton*. *Stockwell* S. was used very sparingly indeed from September 1882 to May 1883, and not again until the end of the period. Its average fortnightly admissions were only $\frac{1}{4}$ to $\frac{1}{3}$ those of *Deptford* and *Homerton*. *Fulham* W. and *Hampstead* N. remained closed throughout the period.

Table I. (giving for this and for antecedent periods the small-pox death-rates of the several districts and the operations of the M. A. B. hospitals) shows, in its fourth column, the further loss of small-pox (already referred to) in all but one district of the metropolis. Also it shows only three districts with rates above 10 per 100,000, namely, Camberwell S., Greenwich S. (containing *Deptford* H.), and Hackney N. (containing *Homerton* H.). For the rest, the rates of 17 districts vary from 6·8 to 0·6, while in ten districts there were no deaths from small-pox in the period. Among these ten were Fulham W. and Hampstead N. Chart I. (facing page 42), giving the *attack*-rates of the several districts, is generally confirmatory of the above indications as to the districts most retentive of small-pox at this period of extreme decadence of small-pox, and it shows as before the relations of districts one to another, and to the small-pox hospitals.

## I. Period: September 1882 to September 1883.

(12 *months of extreme Ebb of Small-pox in London.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those containing Small-pox Hospitals in Caps.

| F. 12 Months, Sept. 1879 to Sept. 1880. | G. 12 Months, Sept. 1880 to Sept. 1881. | H. 12 Months, Sept. 1881 to Sept. 1882. | I. 12 Months, Sept. 1882 to Sept. 1883. | Districts. | *F.—I. 48 Months, Sept. 1879 to Sept. 1883.* | Local Relations in I. Period with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | F. | G. | H. | I. |
| 15·5 | 80·9 | 60·0 | 14·5 | Camberwell - - S. | *170·9* | Deptford on E. edge:—Stockwell, ¾ W. | | | | |
| 11·5 | 162·3 | 75·4 | 11·4 | GREENWICH - S. | *260·6* | CONTAINS DEPTFORD M. A. B. HOSPITAL. | 370 (*27·4*) | 3,200 (*37·4*) | 2,100 (*74·2*) | 250 (*40·3*) |
| 26·8 | 138·4 | 12·3 | 10·2 | HACKNEY - - N. | *187·7* | CONTAINS HOMERTON M. A. B. HOSPITAL. | 460 (*34·*) | 2,500 (*29·3*) | 200 (*7·2*) | 300 (*48·4*) |
| 13·7 | 85·4 | 41·0 | 6·8 | Stepney - - - E. | *146·9* | | | | | |
| 7·1 | 35·9 | 11·0 | 6·7 | LAMBETH - - S. | *60·7* | CONTAINS STOCKWELL M. A. B. HOSPITAL. | 250 (*18·6*) | 1,100 (*12·9*) | 500 (*17·6*) | 70 (*11·3*) |
| 7·3 | 34·2 | 10·5 | 6·6 | Holborn - - - C. | *58·6* | | | | | |
| 10·4 | 59·7 | 8·5 | 5·7 | Mile End - - - E. | *84·3* | Homerton, 1½ N. | | | | |
| 3·2 | 23·2 | 2·6 | 4·5 | St. Marylebone - N. | *33·5* | | | | | |
| 19·6 | 70·1 | 15·4 | 4·2 | Whitechapel - - E. | *109·3* | | | | | |
| 9·3 | 63·5 | 34·8 | 3·6 | St. Saviour - - S. | *111·2* | Deptford, 1½ S.E.:—Stockwell, 1½ S.W. | | | | |
| 9·7 | 66·1 | 51·3 | 3·0 | St. Olave - - - S. | *130·1* | Deptford, ½ S. | | | | |
| 4·5 | 45·4 | 32·6 | 2·6 | Poplar - - - E. | *85·1* | Homerton, 1 N.:—Deptford, 1½ S.W. | | | | |
| 8·5 | 93·3 | 36·0 | 2·1 | St. George's-in-East E. | *139·9* | | | | | |
| 1·9 | 36·9 | 3·9 | 1·9 | City - - - - C. | *44·6* | | | | | |
| 18·9 | 148·5 | 4·7 | 1·6 | Shoreditch - - E. | *173·7* | Homerton, 1½ N.E. | | | | |
| 8·9 | 41·7 | 11·3 | 1·4 | *ISLINGTON** - - N. | *63·3* | (*Highgate H. herein.*) Homerton, 1½ E. | *129* | *689* | *286* | *79* |
| 4·3 | 45·6 | 5·2 | 1·0 | Wandsworth and C. S. | *56·1* | Stockwell, ¼ E. | | | | |
| — | 16·8 | 4·7 | 0·8 | Paddington - - W. | *22·3* | | | | | |
| 6·3 | 26·7 | 10·6 | 0·8 | St. Pancras - - N. | *44·4* | Highgate H. on N.E. edge. | | | | |
| 6·7 | 31·9 | 1·2 | 0·6 | Kensington - - W. | *40·4* | | | | | |
| — | 10·9 | 25·9 | — | Lewisham - - - S. | *36·8* | Deptford, 1¾ N.W. | | | | |
| — | 47·6 | 14·9 | — | Strand - - - C. | *62·5* | | | | | |
| 2·1 | 30·1 | 12·9 | — | Westminster - - W. | *45·1* | | | | | |
| — | 38·3 | 9·9 | — | Woolwich - - - S. | *48·2* | | | | | |
| 9·4 | 122·9 | 9·4 | — | Bethnal Green - - E. | *141·7* | Homerton, 1 N. | | | | |
| 6·8 | 30·6 | 6·8 | — | Chelsea - - - W. | *44·2* | Stockwell, 1¾ S.E. | | | | |
| 4·4 | 22·0 | 6·6 | — | St. Giles and St. Geo. C. | *33·0* | | | | | |
| 9·6 | 37·4 | 5·2 | — | FULHAM - - - W. | *52·2* | FULHAM S. P. HOSPITAL CLOSED | 270 (*20·0*) | 1,750 (*20·4*) | 30 (*1·0*) | — |
| 1·3 | 25·4 | 5·3 | — | St. Geo., H. Square - W. | *32·0* | | | | | |
| — | 13·2 | 4·4 | — | HAMPSTEAD - N. | *17·6* | HAMPSTEAD S. P. HOSPITAL CLOSED. Highgate H., 1 N.E. | — | — | — | — |

* See footnote to page 4.

. 3.

I. Period.—September 1882 to September 1883.

(12 months of extreme Ebb of small-pox in London.)

*Operations of Small-pox Hospitals and facts as to incidence of Small-pox* Attack *upon the inhabitants of certain Districts.*

*Homerton Small-pox Hospital.*—In operation throughout period, but sparingly used. Until March 1883 drafted some convalescents to Deptford.*

| | | | |
|---|---|---|---|
| Fortnightly admissions (*acute cases*). | Greatest number - - | 19 | Average (26 fortnights) 11. Total admissions about 300. |
| | Smallest ,, (Nov. 1882 and Aug. 83) - - - | 2 | |

Hackney N.—No severe prevalence of small-pox; but only two fortnights in the whole period in which Hackney did not contribute cases to M. A. B. hospitals. In this respect unlike every other district except Greenwich S. and *Camberwell* S. In the calendar year 1883. Dr. Tripe records (report for 1883) 126 cases of small-pox occurring in Hackney; with data showing the disease to have been seven times more abundant in certain streets within ¼-mile of Homerton Hospital than in the remainder of the district.

*Deptford Small-pox Hospital.*—In operation from September 1882 to August 1883, but used even more sparingly than Homerton. Did not draft convalescents; received instead drafts from Homerton.*

Fortnightly admissions (*acute cases*):—September to March (11 fortnights), average 14. March to August, average 7. Total admissions about 250.

Greenwich S.—No large prevalence of small-pox. From September 1882 to March 1883 sent to hospital 70 per cent. of the total cases received from district by M. A. B. in period.

*Camberwell* S.—No large prevalence of small-pox. From September 1882 to March 1883 sent to hospital 64 per cent. of the total cases received from district by M. A. B. in period.

*Stockwell Small-pox Hospital.*—Used very sparingly indeed from September 1882 to May 1883; then ceased to admit cases. In operation again (very few cases) September 1883.

Fortnightly admissions (*acute cases*):—Average September to May (15 fortnights), 4. Total admissions about 70.

Lambeth S.—Very little small-pox; of cases received by M. A. B. three-fifths admitted during chief use of hospital.

*Fulham Small-pox Hospital.*—Closed against small-pox throughout period.

*Chelsea*, Fulham, and *Kensington*, W.—Incidence of small-pox alike in hospital area and in remainder of the parishes, viz., 0·01 per cent. of houses in each instance.

*Hampstead Small-pox Hospital.*—Not in use for small-pox throughout period.

*St. Pancras* N.—Incidence of small-pox (houses invaded per 100 in each area) in 1883: on area within one mile of Hampstead Hospital, 0·03; on remainder of parish, 0·05. (Mr. Shirley Murphy, Report M. O. H. St. Pancras, 1884.)

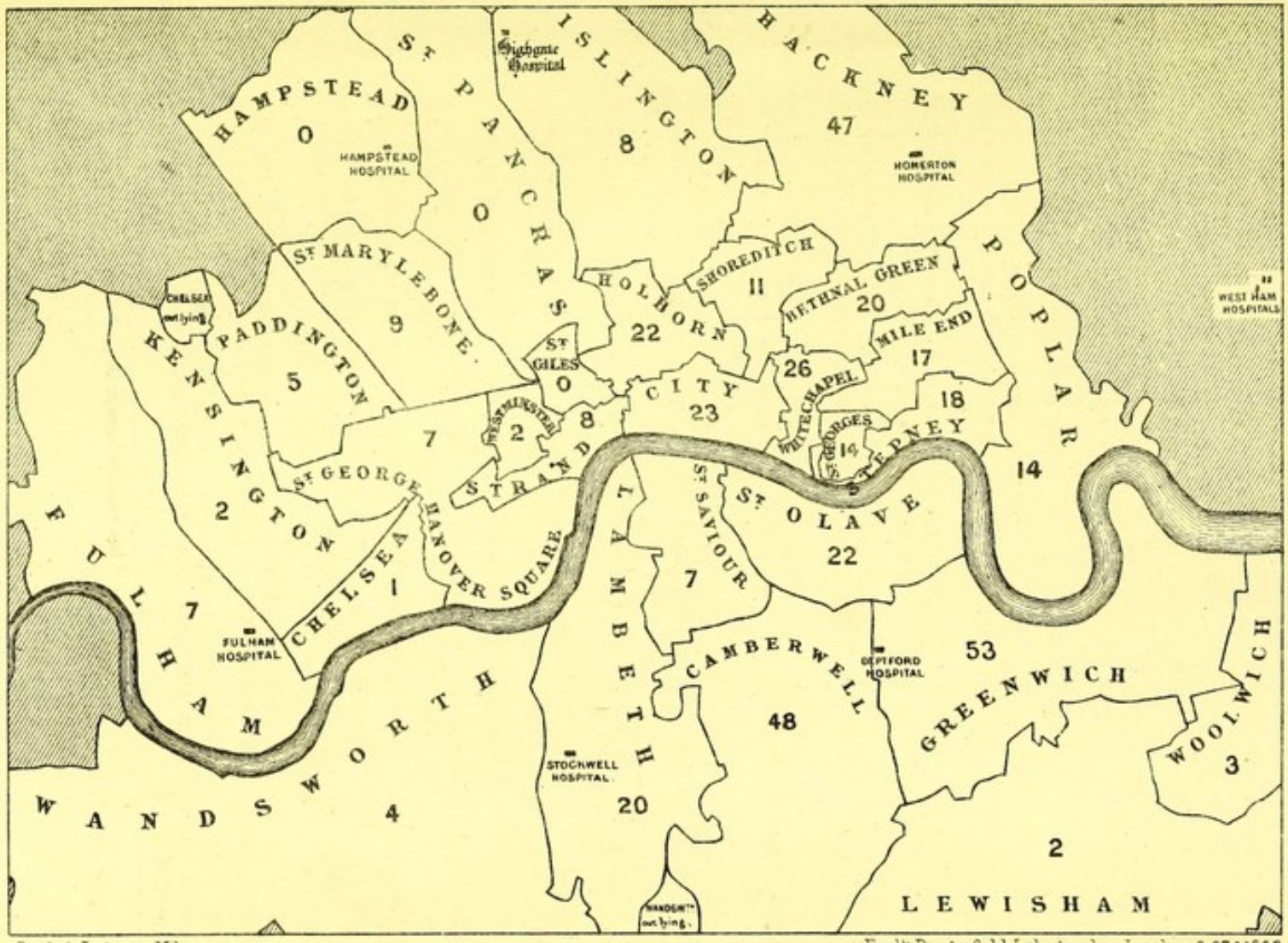
*Highgate (Private) Small-pox Hospital.*—In the above-quoted report, Mr. Shirley Murphy shows admissions to this hospital in the period to have been 79. Also he shows for—

*St. Pancras* N.—Incidence of small-pox (houses invaded per 100 in each area) in 1883: on area 0–½ mile from Highgate Hospital, 0·82; on area ½–1 mile, 0·00; on remainder of parish, 0·02.

* See footnote to page 16.

PERIOD: SEPTEMBER 1882 TO SEPTEMBER 1883.

*Smallpox Attacks per 100,000 population in each area referred to.*




| *Smallpox Hospitals and their Operations. Period I.* | | |
|---|---|---|
| *Name of MAB Hospital* | *Acute Smallpox Admissions to each* | |
| | *Number* | *Per cent.* |
| *Homerton* | *300* | *48·4* |
| *Deptford* | *250* | *40·3* |
| *Stockwell* | *70* | *11·3* |
| *Fulham* | *not in use.* | |
| *Hampstead* | *" " "* | |

*[Highgate 79]*

Scale ½ Inch to a Mile.

Fred^k Dangerfield, Lithographer, London. 8.87. 14668.



To face p. 42.

## I. Period: September 1882 to September 1883.

(*Notes on facts of I. Period in reference to facts of other Periods of low prevalence of Small-pox.*)

The extreme ebb of small-pox observed in the I. period corresponds as regards paucity of the disease with the A. and F. periods. But it is not strictly comparable with these other minima of small-pox, since in A. and F. there were indications, in increase of small-pox in several districts, of commencement of fresh epidemics, whereas in I. there are none. Nevertheless this I. minimum may be examined in the light of the other minima for the purpose of showing alike in a period of extreme ebb and in seasons of commencing flow of small-pox, chief manifestation of the disease in districts closely associated with hospitals in use for small-pox. This has accordingly been done in the subjoined table, where is seen in the I. period of *last ebb* of small-pox, persistence of the disease in a district intervening between two others containing hospitals in use for small-pox, and in the districts containing such hospitals. Similarly the table shows in the F. and A. periods of ebb *with commencing flow* of small-pox, special activity of the disease in the district containing the hospital for the time being chiefly devoted to small-pox.

| Rank in 1861-70. (Worst to Best.) | A. Period. January to end of August 1876. | | | F. Period. September 1879 to September 1880. | | | Districts. | I. Period. September 1882 to September 1883. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Cases received by Hospitals in Period. | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Cases received by Hospitals in Period. | | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Cases received by Hospitals in Period. |
| 23rd | 4th | 3·8 | S. | 4th | 15·5 | S. | Camberwell - - | 1st | 14·5 | S. |
| 12th | 8th | 2·3 | S. *Deptford* not open | 6th | 11·5 | S. *Deptford*, 370 (=27·4). | GREENWICH - - | 2nd | 11·4 | S. *Deptford*, 250 (=40·3). |
| 25th | 30th æq. | — | N. *Homerton* not in use. | 1st | 26·8 | N. *Homerton*, 460 (34·0). | HACKNEY - - | 3rd | 10·2 | N. *Homerton*, 300 (=48·4). |
| 5th | 3rd | 5·1 | E. | 5th | 13·7 | E. | Stepney - - - | 4th | 6·8 | E. |
| 15th | 1st | 16·6 | S. *Stockwell* 250 (100·0). | 15th | 7·1 | S. *Stockwell*, 250 (18·6). | LAMBETH - - | 5th | 6·7 | S. *Stockwell*, 70 (=11·2). |
| 10th | 10th | 0·7 | C. | 14th | 7·3 | C. | Holborn - - - | 6th | 6·6 | C. |
| 7th | — | — | E. | 7th | 10·4 | E. | Mile End - - - | 7th | 5·7 | E. |
| 24th | — | — | N. | 22nd | 3·2 | N. | St. Marylebone - | 8th | 4·5 | N. |
| 3rd | — | — | E. | 2nd | 19·6 | E. | Whitechapel - - | 9th | 4·2 | E. |
| 13th | 5th | 3·5 | S. | 11th | 9·3 | S. | St. Saviour - - | 10th | 3·6 | S. |
| 9th | 7th | 2·9 | S. | 8th | 9·7 | S. | St. Olave - - - | 11th | 3·0 | S. |
| 4th | — | — | E. | 19th | 4·3 | E. | Poplar - - - | 12th | 2·6 | E. |
| 6th | — | — | E. | 13th | 8·5 | E. | St. George's-in-East | 13th | 2·1 | E. |
| 19th | — | — | C. | 24th | 1·9 | C. | City - - - - | 14th | 1·9 | C. |
| 8th | — | — | E. | 3rd | 18·9 | E. | Shoreditch - - | 15th | 1·6 | E. |
| ? | — | — | N. (Highgate H.?) | 12th | 8·9 | N. (Highgate H., 129.) | *ISLINGTON** - - | 16th | 1·4 | N. (Highgate H., 79.) |
| 14th | 2nd | 5·2 | S. | 21st | 4·3 | S. | Wandsworth - - | 17th | 1·0 | S. |
| 26th æq. | — | — | W. | 30th æq. | — | W. | Paddington - - | 18th } | 0·8 | W. |
| 22nd | 19th | 0·4 | N. | 18th | 6·3 | N. | St. Pancras - - | 18th } | 0·8 | N. |
| 26th æq. | 9th | 1·2 | W. | 17th | 6·7 | W. | Kensington - - | 20th | 0·6 | W. |
| 29th | — | — | S. | 30th } æq. | — | S. | Lewisham - - | — | — | S. |
| 20th æq. | — | — | C. | 30th } | — | C. | Strand - - - | — | — | C. |
| 20th æq. | — | — | W. | 23rd | 2·1 | W. | Westminster - - | — | — | W. |
| 18th | — | — | S. | 30th æq. | — | S. | Woolwich - - - | — | — | S. |
| 2nd | — | — | E. | 10th | 9·4 | E. | Bethnal Green - - | — | | E. |
| 16th | 6th | 3·4 | W. | 16th | 6·8 | W. | Chelsea - - - | — | — | W. |
| 11th | — | — | C. | 20th | 4·4 | C. | St. Giles and St. Geo. | — | — | C. |
| 26th æq. | — | — | W. *Fulham* not open. | 9th | 9·6 | W. *Fulham*, 270 (20·0). | FULHAM - - - | — | — | W. *Fulham* not in use. |
| 17th | — | — | W. | 25th | 1·3 | W. | St. Geo. H. Square | — | — | W. |
| 30th | — | — | N. *Hampstead* not in use. | 30th æq. | — | N. *Hampstead* not in use. | HAMPSTEAD - - | — | — | N. *Hampstead* not in use. |

* See footnote to page 4.

## K. Period: September 1883 to September 1884.

**K 1.** (12 *months in which was sudden commencement and rapid extension of epidemic Small-pox in London.*)

In the early part of the K. period, as at the beginning of the F. and A. periods, there was a very insignificant amount of small-pox in London. But in March 1884 small-pox underwent sudden extension in London (as indeed it had done in March 1880), and quickly became epidemic. For a short while the epidemic affected mainly north-east London, but soon the disease extended itself over the metropolis, so that by the end of May all the districts were contributing cases to hospital. During June and some part of July the epidemic acquired very serious proportions; but by August the usual seasonal ebb of the disease became manifest, and this cycle of small-pox quickly declined.

Especially was this sudden epidemicity of small-pox marked in the East and North groups of districts, which suffered respectively, in this K. period, death-rates by small-pox of 36·0 and 31·7 per 100,000. But, as in 1880 so in 1884, indications were not wanting of epidemic rise and fall of the small-pox in the remaining groups. They suffered, however, far less than the others; the Central group having a rate of 15·2, the South group a rate of 9·2, and the West group a rate of only 5·6 per 100,000.

It was during this K. period that modification of the Asylums Board method of dealing with London small-pox, decided on in deference to the Hospitals Commission of 1881–82, took effect. In the Fulham report of 1884 the modifications adopted are described in full, and here they need only brief reference. They consisted essentially in limitation of the number of patients at one time under treatment in each intra-urban hospital to 50, with drafting* of "mild" and convalescent cases to hospital ships in Long Reach, and to hospital camps at Darenth. The new scheme came into operation in February 1884, and to 17th June drafting from hospitals (especially from *Homerton*) to the "*Ships*" was regularly practised, always in the above sense: but after that date "mild" cases of small-pox were despatched direct to the "*Ships*" without passing as before through intra-urban hospitals. The "drafting" was effected by M. A. B. omnibus ambulances, each capable of containing half-a-dozen "mild" or convalescent small-pox cases, which passed daily to and fro between the hospitals and the M. A. B. wharf at Potter's Ferry. Up to 17th June traffic of this sort was especially abundant on the route (through eastern parishes) between *Homerton* Hospital and the wharf in question. (See Chart K. facing page 86.) *Homerton* N. and *Stockwell* S. were in operation throughout the period. *Deptford* S. came into use at end of January, *Hampstead* N. and *Fulham* W. on the 7th and 15th May respectively, and the extra-urban *Plaistow* Hospital (leased from the Poplar Board of Works) at West Ham on May 31st. All were thenceforward in operation till the end of the period. The actual number (and the percentage of total) acute M. A. B. cases received, and the number of "mild" or convalescent cases drafted by each hospital were as follows:—*Homerton* N., 2,000 (47·4 per cent.), drafted 1,500; *Hampstead* N., 380 (9·0 per cent.), drafted 235; *Deptford* S., 350 (8·3 per cent.), drafted 180; *Stockwell* S., 360 (8·5 per cent.), drafted 133; *Fulham* W., 180 (4·3 per cent.), drafted 138; *Plaistow* (at West Ham), 216 (5·2 per cent.), drafted 144; and the *Ships*, 730 (17·4 per cent.). In all, the "*Ships*" received some 3,000 small-pox cases, and drafted to Darenth above 80 per cent. of them.

Table K. (giving for this and for preceding periods the small-pox death-rates of the several districts and the operations of the intra-urban M. A. B. Hospitals)—shows, in its third column, extension of the prevailing small-pox to every district of London. Every single district (except Camberwell, which had been first on the list in the preceding period) has increased its small-pox; most districts very largely. At the head of the list stands Hackney N. (containing *Homerton* H.), with a rate of mortality nearly double that of any other district. Next come four East districts, while fifth, and not far below them, stands Hampstead N. (containing *Hampstead* H.), which in the preceding and several previous periods was bottom on the list. For the rest other East and certain Central districts appear special sufferers, but as yet the epidemic has affected South and West districts to comparatively limited extent. The above facts as to the incidence of the epidemic are generally corroborated by Chart K. (facing page 48), giving the small-pox *attack*-rates of the several districts in the period, and showing the relations of the districts to each other and to the small-pox hospitals.

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* See footnote to page 16.

## K. Period: September 1883 to September 1884.

**K 2.**

(12 *months comprising commencement and rapid growth of Epidemic Small-pox in London.*)

Districts of London, with their several Small-pox Death-rates per 100,000 (after Distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality: those containing Small-pox Hospital in Caps.

| H. 12 Months, September 1881 to September 1882. | I. 12 Months, September 1882 to September 1883. | K. 12 Months, September 1883 to September 1884. | Districts. | Local Relations in K. Period, with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received into Hospitals in Period | | |
|---|---|---|---|---|---|---|---|
| | | | | | H. | I. | K. |
| 12·3 | 10·2 | 92·2 | **HACKNEY** - - N. | *Contains Homerton M. A. B. Hospital* - - | 200 (7·2) | 300 (48·4) | 2,000 (47·4) |
| 9·4 | — | 55·1 | Bethnal Green - - E. | Homerton, 1 N. | | | |
| 36·0 | 2·1 | 44·5 | St. George's-in-East E. | Deptford, 1¾ S. | | | |
| 8·5 | 5·7 | 43·5 | Mile End - - - E. | Homerton, 1½ N. | | | |
| 4·7 | 1·6 | 34·0 | Shoreditch - - E. | Homerton, 1¼ N.E. | | | |
| 4·4 | — | 33·0 | **HAMPSTEAD** - - N. | *Contains Hampstead M. A. B. Hospital.* Highgate H., 1 N.E. | — | — | 380 (9·0) |
| 41·0 | 6·8 | 32·4 | Stepney - - - E. | | | | |
| 15·4 | 4·2 | 25·4 | Whitechapel - - E. | | | | |
| 32·6 | 2·6 | 22·4 | Poplar - - - E. | Homerton, 1 N.:—Deptford, 1¼ S.W.:—West Ham, 1¾ E. | | | |
| 11·3 | 1·4 | 22·3 | *ISLINGTON** - - N. | [*Highgate H. herein.*] Hampstead, 1½ W.:—Homerton, 1½ E. | 286 | 79 | 317 |
| 6·6 | — | 22·0 | St. Giles and St. Geo. C. | | | | |
| 14·9 | — | 17·9 | Strand - - - C. | | | | |
| 10·5 | 6·6 | 16·4 | Holborn - - - C. | | | | |
| 75·4 | 11·4 | 16·0 | **GREENWICH** - - S. | *Contains Deptford M. A. B. Hospital* - - | 2,100 (74·2) | 250 (40·3) | 350 (8·3) |
| 51·3 | 3·0 | 12·6 | St. Olave - - - S. | Deptford, ½ S. | | | |
| 2·6 | 4·5 | 11·6 | St. Marylebone - N. | Hampstead, 1 N. | | | |
| 34·8 | 3·6 | 10·8 | St. Saviour - - S. | Deptford, 1¼ S.E.:—Stockwell, 1½ S.W. | | | |
| 6·8 | — | 10·2 | Chelsea - - - W. | Fulham, ¼ W. | | | |
| 60·0 | 14·5 | 9·6 | Camberwell - - S. | Deptford on E. edge:—Stockwell, ¾ W. | | | |
| 10·6 | 0·8 | 8·4 | St. Pancras - - N. | Hampstead, ¼ N.W. [Highgate H. on N.E. edge.] | | | |
| 11·0 | 6·7 | 7·9 | **LAMBETH** - - S. | *Contains Stockwell M. A. B. Hospital* - - - | 500 (17·6) | 70 (11·3) | 360 (8·5) |
| 5·3 | — | 6·8 | St. Geo., H. Square W. | Fulham, 1¼ W.:—Stockwell, 1½ S.E. | | | |
| 5·2 | 1·0 | 6·2 | Wandsworth - - S. | Stockwell, ¼ E.:—Fulham, 1 N.W. | | | |
| 1·2 | 0·6 | 6·1 | Kensington - - W. | Fulham, ½ W. and S. | | | |
| 25·9 | — | 5·5 | Lewisham - - - S. | Deptford, 1¾ N.W. | | | |
| 3·9 | 1·9 | 3·8 | City - - - - C. | | | | |
| 4·7 | 0·8 | 3·7 | Paddington - - W. | Hampstead, 1½ N.E.:—Fulham, 1¾ S.W. | | | |
| 9·9 | — | 3·7 | Woolwich - - - S. | | | | |
| 5·2 | — | 3·5 | **FULHAM** - - - W. | *Contains Fulham M. A. B. Hospital* - - | 28 (1·0) | — | 180 (4·3) |
| 12·9 | — | 2·1 | Westminster - - W. | | | | |
| | | | | | | | "Ships," 730 (17·4) Plaistow, 216 (5·1) |

* See footnote to page 4.

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

# K 3.

## K. Period: September 1883 to September 1884.

(12 months in which was sudden commencement and rapid growth of epidemic Small-pox in London.)

*Operations of Small-pox Hospitals, and facts as to incidence of Small-pox* Attack *on inhabitants of certain Districts.*

*Homerton Small-pox Hospital.*—In use throughout the period, and with operations, both as regards numbers admitted and promptness of drafting, under the new conditions,* greatly in excess of those of any other hospital. Antecedent to the commencement of the 1884 epidemic, viz., from September 1883 to March 1884, Homerton received nearly 80 per cent. of the total M. A. B. cases; and it began the process of drafting in mid-February, several weeks before other hospitals. In all, Homerton received in the period some 2,000 acute cases, and drafted more than twice as many cases as all the rest of the Hospitals put together.

*Acute cases admitted:—*

| | *Sept.* 1883 *to mid. Feb.* 1884. | *Mid. Feb. to end March.* | *March to Sept.* 1884. |
|---|---|---|---|
| Average fortnightly admissions | 20 | 37 | 130 |
| Average in hospital | 50 | 33 | 34 |

*Hackney N.* was the district earliest in suffering severe small-pox in the epidemic, and it suffered in this period far in excess of all others. (See Chart K.) From September 1883 to middle February 1884 (22 weeks) it had an *attack*-rate of 57 per 100,000; in the succeeding *six weeks* to end of March an *attack*-rate also of 57; and in the remaining 26 weeks to end of September, an *attack*-rate of 413 per 100,000 of its population. The Hackney Union Infirmary Committee, reporting in 1884 on the incidence of small-pox attack on certain areas of Hackney round Homerton Hospital in March, April, and May of that year, give data which, expressed in rates per 100,000 of the populations of the several areas as estimated by Dr. Tripe, read thus:—

| *Areas of Hackney.* | *March.* | *April.* | *May.* | *Total, 3 months.* |
|---|---|---|---|---|
| Within ¼-mile of Hospital | 290 | 190 | 850 | 1,330 |
| ¼–½ mile from " | 60 | 70 | 370 | 500 |
| ½–1 " " " | 20 | 40 | 120 | 180 |
| Remainder of Hackney - | 20 | 20 | 40 | 80 |

*Other Districts of N.E. London.*—Bethnal Green was most like Hackney in early and rapid development of the epidemic; but the amount of its small-pox, as in other East districts, was much less. Thus, in the six months September 1883 to end of March 1884, the *attack*-rates per 100,000 population of the seven districts of the East group were as follows:—*Whitechapel*, 9; *Mile End*, 10; *Poplar*, 14; *St. George's-in-East*, 16; *Stepney*, 27; *Shoreditch*, 28; and *Bethnal Green*, 43:—Whereas Hackney E. in the same six months had a rate of 115 per 100,000.

* See page 44.

*Stockwell Small-pox Hospital.*—Except for three successive fortnights at the end of 1883 and beginning of 1884, when admissions were 11, 17, and 16, the average fortnightly admissions *up to March* were less than five, and the number of patients in hospital correspondingly few. In the last fortnight of March admissions rose to 14 and were subsequently 8, 9, and 37 in successive fortnights. Meanwhile drafting of convalescents had commenced, and the hospital came into full operation for acute cases during the remainder of the period. The greatest number of patients retained in hospital at the end of any fortnight was 41. In all the hospital received in the period about 350 acute cases.

Lambeth S.—The M. A. B. returns show that a few cases were received from Lambeth in December 1883 and January 1884, but no more until April. And the fact as to paucity of small-pox in the parish early in 1884 is endorsed by Dr. Verdon, the M. O. H., who states (Transactions of Society of M. O.'s of H. for 1884, page 129) that the epidemic began in Lambeth on 16th April, between which date and August 140 cases were reported to him. Of this number 31 occurred within ⅛ of a mile of Stockwell Hospital, 19 in a zone ⅛–¼ mile distant from it, 14 in the Lambeth portion of the succeeding ¼–½ mile zone, and only 76 in remoter and more densely populated areas of this extensive parish.

*Hampstead Small-pox Hospital.*—Opened for small-pox 7th May 1884, and in operation to end of period. Drafting practised throughout. Admitted 380 acute cases; drafted 230.

Average fortnightly admissions 35. Average number of patients in hospital 16.

Hampstead N.—Little if any small-pox in Hampstead parish antecedent to commencement of hospital operations. Subsequently small-pox abundant there. Its incidence from 7 May to 6 September 1884 is shown by Dr. Gwynn, M. O. H., to have been as follows:—

| *Houses invaded per 100 in each area referred to.* | | |
|---|---|---|
| Within ¼-mile of Hampstead Hospital. | In rest of Hampstead. | In a poor quarter of the Parish within ¼-mile of W.Ho. but at a distance from Hospital. |
| 10·6 | 0·8 | 1·1 |

*St. Pancras* N.—Incidence of small-pox (houses invaded per 100 in each area) during 1884: on area within one mile of Hampstead Hospital, 2·90; on remainder of parish 0·90. (Mr. Shirley Murphy, Report M. O. H. St. Pancras, 1884.)

*Highgate (Private) Small-pox Hospital.*—In the above-quoted report, Mr. Shirley Murphy shows admissions to this hospital in period to have been 317. Also he shows for—

*St. Pancras* N.—Incidence of small-pox (houses invaded per 100 in each area) during 1884: on area 0–½ mile from Highgate Hospital, 4·31; on area ½–1 mile, 1·16; on rest of parish, 1·30.

**K 3** (*continued*).

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

*Deptford Small-pox Hospital.*—Did not come into operation until the end of January 1884. Thenceforward until May very sparingly used (admitting only 30–40 cases); seemingly drafted few cases. But in May, and especially in June, operations greatly increased, and drafting became the rule. Cases admitted 350; drafted 180. Average fortnightly admissions (May to September) 28; average number in hospital 23.

Greenwich S.—Dr. Roberts, M. O. H. Deptford, states (Transactions of Society of Medical Officers of Health, 1885) that in 1884, 41 cases of small-pox occurred in the area of Deptford 0–¼ mile from the hospital; 27 in the area ¼–1 mile distant from it; and 78 in the remainder of the district. He does not, however, give the populations of the several areas.

*Camberwell* S.—Similarly Dr. Bristowe states (in volume quoted above) that in 1884 to the end of March two cases only of small-pox had been reported to him as occurring in Camberwell, neither of them in Ward No. 4 adjacent to Deptford Hospital. Further, he states that of 239 additional small-pox cases occurring in the district between March and September 1884, no less than 104 (43·0 per cent.) occurred in No. 4 Ward, which has only 20 per cent. of the Camberwell population.

*Fulham Small-pox Hospital.*—Opened for small-pox 15th May, in operation until end of period. Cases admitted 180; drafted (all bonâ fide convalescents) 138. Average fortnightly admissions 18: average number in hospital 14.

*Chelsea*, Fulham, and *Kensington* W.—Increasing small-pox in these parishes before opening of hospital; less in the neighbourhood of the hospital than elsewhere in the three districts. Sudden and heavy incidence of small-pox on neighbourhood around hospital within three weeks of commencement of its operations (see Fulham report 1884). Incidence of small-pox per 100 houses in "pre-hospital period":—on area within one mile of hospital, ·03; on rest of the parishes, ·04. Incidence in "post-hospital period," ·45 and ·21 respectively.

*Plaistow Small-pox Hospital*, at West Ham.—Opened 31st May; in operation to end of period. Cases admitted 216; drafted 144. Average fortnightly admissions 24; average number in hospital 16.

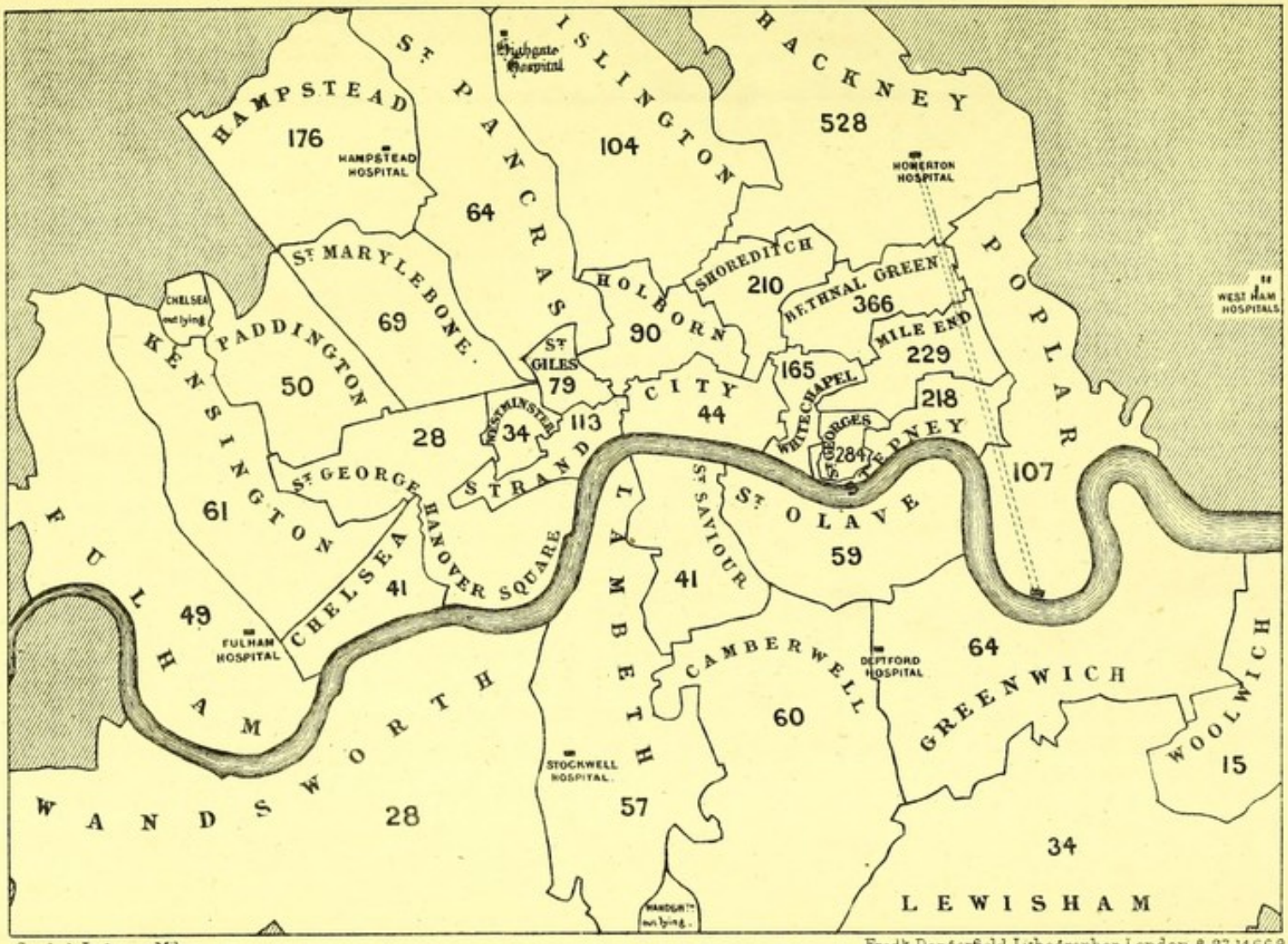
*West Ham*, Essex.—See West Ham report, pp. 57–60.

"*Hospital Ships*" (moored in Long Reach).—Acute cases admitted about 730. Drafted to Camp some 2,600 cases.

*Hospital Camps* (2) (at Darenth).—In operation from April and June respectively to end of period. Received above 3,000 cases.

# K. PERIOD: SEPTEMBER 1883 TO SEPTEMBER 1884.

*Smallpox Attacks per 100,000 population in each area referred to.*




| *Smallpox Hospitals and their Operations Period K.* | | |
|---|---|---|
| *Name of M.A.B. Hospital.* | *Acute Smallpox Admissions to each.* | |
| | *Number* | *Per cent.* |
| *Homerton* | *2000* | *47·4* |
| *Hampstead* | *380* | *9·0* |
| *Stockwell* | *360* | *8·5* |
| *Deptford* | *350* | *8·3* |
| *Fulham* | *180* | *4·3* |
| *Plaistow (West Ham)* | *216* | *5·1* |
| *"Ships" (Long Reach)* | *730* | *17·4* |

*[ Highgate 317 ]*

*N.B. The route followed by omnibus ambulances in conveying away the overflow (referred to in text of K.3) very special in this period to Homerton Hospital, is roughly indicated by dotted lines.*

Scale ½ Inch to a Mile.

Fred^k Dangerfield Lithographer London 8 87 14668.

K4

To face p. 48.

## K. Period: September 1883 to September 1884.

*(Notes on very sudden and severe epidemicity of Small-pox in London.)*

The K. period was notable, in its first half, for quiescence or some further ebb of small-pox, and in its second half for sudden and wholesale development of severe epidemicity of the disease. It differed, therefore, widely from other two periods in this series (A. and F.) of commencing epidemicity of small-pox in London, in both of which the epidemicity developed by slow degrees, and marked manifestation of it was postponed until an ensuing winter season. At the outset of this K. period London was perhaps more completely equipped for dealing with growing small-pox than ever before. Not only had it become the custom of the various districts to send more and more of their small-pox promptly to hospital, but measures had been adopted by the M. A. B. for shipping out of London a large proportion of the small-pox cases; sending them by road and river ambulance for treatment to floating hospitals in Long Reach. And further, steps had been taken, in relation to this new procedure in dealing with London small-pox, for greatly limiting the operations of intra-urban hospitals, for improving in various ways their administrative arrangements, for establishing and for regulating the street ambulance service and the omnibus-ambulances plying between the hospitals and the riverside wharves, whereat patients were embarked for their voyage to Long Reach. Nevertheless, in the teeth of all these carefully considered arrangements and precautions, the epidemic of 1884 developed itself in very sudden and vigorous fashion, and not least in those very quarters wherein the new method of procedure had earliest taken effect, and where the resulting hospital business had been of greatest magnitude.

| Rank in 1863-70. (Worst to Best.) | January to November 1876. | | | September 1879 to September 1880. | | | Districts. | September 1883 to September 1884. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. | | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. |
| 25th | 4th | 18·8 | N. *Homerton*, 350 (=36·8). | 1st | 6·8 | N. *Homerton*, 460 (=34·1). | HACKNEY - - | 1st | 92·2 | N. *Homerton*, 2,000 (=50·0). |
| 2nd | 10th | 7·1 | E. | 10th | 9·4 | E. | Bethnal Green - - | 2nd | 55·1 | E. |
| 6th | 21st | 2·1 | E. | 13th | 8·5 | E. | St. George's-in-East | 3rd | 44·5 | E. |
| 7th | 17th | 3·8 | E. | 7th | 10·4 | E. | Mile End - - - | 4th | 43·5 | E. |
| 8th | 16th | 3·9 | E. | 3rd | 18·9 | E. | Shoreditch - - | 5th | 34·0 | E. |
| 30th | 30th æq. | — | N. *Hampstead* not in use. | 30th æq. | — | N. *Hampstead* not in use. | HAMPSTEAD - - | 6th | 33·0 | N. *Hampstead*, 380 (=9·5). |
| 5th | 7th | 8·5 | E. | 5th | 13·7 | E. | Stepney - - - | 7th | 32·4 | E. |
| 3rd | 6th | 9·8 | E. | 2nd | 19·6 | E. | Whitechapel - - | 8th | 25·4 | E. |
| 4th | 27th | 0·6 | E. | 19th | 4·5 | E. | Poplar - - - | 9th | 22·4 | E. |
| ? | 11th | 6·0 | N. (Highgate H. ?) | 12th | 8·9 | N. (Highgate H., 129.) | *ISLINGTON** - - | 10th | 22·3 | N. (Highgate H., 317.) |
| 11th | 13th | 4·4 | C. | 20th | 4·4 | C. | St. Giles and St. Geo. | 11th | 22·0 | C. |
| 20th æq. | 30th æq. | — | C. | 30th æq. | — | C. | Strand - - - | 12th | 17·9 | C. |
| 10th | 15th | 4·0 | C. | 14th | 7·3 | C. | Holborn - - - | 13th | 16·4 | C. |
| 12th | 18th | 3·1 | S. *Deptford* not open. | 6th | 11·5 | S. *Deptford*, 370 (=27·4). | GREENWICH - - | 14th | 16·0 | S. *Deptford*, 350 (=8·7). |
| 9th | 9th | 7·4 | S. | 8th | 9·7 | S. | St. Olave - - - | 15th | 12·6 | S. |
| 24th | 23rd | 1·9 | N. | 22nd | 3·2 | N. | St. Marylebone - | 16th | 11·6 | N. |
| 13th | 3rd | 13·2 | S. | 11th | 9·3 | S. | St. Saviour - - | 17th | 10·8 | S. |
| 16th | 12th | 5·7 | W. | 16th | 6·8 | W. | Chelsea - - - | 18th | 10·2 | W. |
| 23rd | 5th | 10·2 | S. | 4th | 15·5 | S. | Camberwell - - | 19th | 9·6 | S. |
| 22nd | 25th | 1·7 | N. | 18th | 6·3 | N. | St. Pancras - - | 20th | 8·4 | N. |
| 15th | 1st | 30·0 | S. *Stockwell*, 600 (=63·2). | 15th | 7·1 | S. *Stockwell*, 250 (=18·5). | LAMBETH - - | 21st | 7·9 | S. *Stockwell*, 360 (=9·0). |
| 17th | 19th æq. | 2·7 | W. | 25th | 1·3 | W. | St. Geo., H. Square - | 22nd | 6·8 | W. |
| 14th | 2nd | 17·1 | S. | 21st | 4·3 | S. | Wandsworth - - | 23rd | 6·2 | S. |
| 26th æq. | 14th | 4·3 | W. | 17th | 6·7 | W. | Kensington - - | 24th | 6·1 | W. |
| 29th | 19th æq. | — | S. | 30th æq. | — | S. | Lewisham - - - | 25th | 5·5 | S. |
| 19th | 8th | 7·8 | C. | 24th | 1·9 | C. | City - - - - | 26th | 3·8 | C. |
| 26th æq. | 23rd | 1·9 | W. | 30th æq. | — | W. | Paddington - - | 27th | 3·7 | W. |
| 18th | 30th æq. | — | S. | 30th æq. | — | S. | Woolwich - - - | 28th | 3·7 | S. |
| 26th æq. | 26th | 0·9 | W. *Fulham* not open. | 9th | 9·6 | W. *Fulham*, 270 (=20·0). | FULHAM - - - | 29th | 3·5 | W. *Fulham*, 180 (=4·5). |
| 20th æq. | 21st | 2·1 | W. | 23rd | 2·1 | W. | Westminster - - | 30th | 2·1 | W. |

* See footnote to page 4.

## L1. L. Period: September 1884 to September 1885.

(12 *months of further and more severe Epidemic prevalence, and of decadence, of Small-pox in London.*)

During the L. period, corresponding to the second successive cycle of vigorous small-pox of previous epidemics, small-pox was greatly more fatal in London than in the preceding period. In this it differed altogether from the H. and D. periods of previous epidemics with which in other respects it was in accord. In it the seasonal rise, culmination, and decline of small-pox was very marked, and no less than 28 out of the 30 metropolitan districts exhibited greater mortality than in K. period. Under the circumstances there appeared ground for misgiving respecting renewal of epidemic small-pox in the next ensuing season, 1885–86; but misgiving of this sort proved unfounded, for by the beginning of winter, 1885, the epidemic had come practically to an end in London.

In the second cycle of the epidemic, small-pox fell with especial severity on the East, South, and North groups of districts. They had small-pox death-rates respectively of 62·3, 53·0, and 50·4 per 100,000. The Central and West groups, though suffering much more than in the preceding (K.) period, had much less small-pox than the others; their rates were only 35·7 and 21·0 per 100,000. To this (the final) stage of the epidemic the rates of the several groups were—

| | | |
|---|---|---|
| | N. 82·2 | |
| W. 26·7 | C. 51·0 | E. 98·4 |
| | S. 62·2 | |

At the commencement of the L. period the new method of dealing with small-pox in London adopted by the Asylums Board in the preceding period underwent important modification. Orders were issued that the number of patients at any one time in intra-urban hospitals should in no case be allowed, as before, to reach 50, but should be limited to 25. And this order was duly observed, with the result that from most intra-urban hospitals during the L. period, patients were drafted to the "*Ships*" in Long Reach as soon as they could bear the journey. As at the end of the previous period, patients treated in intra-urban hospitals were mainly severe cases, mild cases continuing as before to be despatched direct from their homes to the "*Ships*" in Long Reach, whence, when "convalescent," they were transferred to the camps at Darenth. In the L. period all the M. A. B. hospitals and camps of the previous period were in use for small-pox. The number and percentage of acute M. A. B. cases received and drafted by each was as follows:—*Homerton* N., 1,053 (=14·0), drafted 757; *Deptford* S., 769 (=10·2 per cent.), drafted 472; *Hampstead* N., 396 (= 5·3 per cent.), drafted 300; *Stockwell* S., 371 (= 5·0 per cent.), drafted 259; *Fulham* W., 416 (= 5·5 per cent.), drafted 299; *Plaistow*, West Ham, 429 (=5·7), drafted 305; "*Ships*," Long Reach, 4,090 (=54·3), drafted (to camp), 6,935.

Table L. (giving for this and for preceding periods the small-pox death-rates of the several districts and the operations of the M. A. B. hospitals) shows, in its third column, every district, except Hackney N. and Bethnal Green E., to have suffered more small-pox than in the preceding (K.) period. In that period Hackney and Bethnal Green headed the list, and even now they have nearly as much small-pox as before. Also, the table shows displacement of Hackney N. (containing *Homerton* H.) and Bethnal Green by certain East and South groups which did not (except St. George's-in-East) in the previous period suffer very severely from small-pox. So, too, with districts of other groups; there is general improvement in position on the list of districts which in the preceding period suffered much with supercession of them by districts which suffered little, and after a fashion suggestive that in this, as in the D. period of a previous epidemic, some very complex influences were at work in determining particular small-pox incidences. Chart L. (facing page 54), giving facts as before, is in a general way corroborative of the indications afforded by the table.

**L 2.**

## L. Period : September 1884 to September 1885.

*(12 months comprising further increase of Small-pox Prevalence, followed by Decadence of the Epidemic in London).*

Districts of London, with their several Small-pox Death-rates per 100,000 (after distribution of Hospital Small-pox Mortality, according to District whence each Case was brought), and with Note of Local Relations of Small-pox Hospitals, and the Amount of Small-pox treated in each. Districts in order of greatest Small-pox Mortality in Period: those containing Small-pox Hospitals in Caps.

| I. 12 Months, September 1882 to September 1883. | K. 12 Months, September 1883 to September 1884. | L. 12 Months, September 1884 to September 1885. | Districts. | K.—L. 24 *Months, September* 1883 *to September* 1885. | Local Relations in L. Period, with Small-pox Hospitals placed within Two Miles of District.—Distance in Miles. | Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | I. | K. | L. |
| 2·6 | 22·4 | 90·0 | Poplar - - - E. | *112·4* | Homerton, 1 N. :—Deptford, 1¼ S.W. :—West Ham, 1⅝ E. | | | |
| 14·5 | 9·6 | 87·9 | Camberwell - - S. | *97·5* | Deptford on E. edge :—Stockwell, ¾ W. | | | |
| 2·1 | 44·5 | 80·6 | St. George's-in-East E. | *125·1* | Deptford, 1¾ S. | | | |
| 6·8 | 32·4 | 71·7 | Stepney - - - E. | *104·0* | | | | |
| 3·6 | 10·8 | 71·7 | St. Saviour - - S. | *82·5* | Deptford, 1¼ S.E. :—Stockwell, 1½ S.W. | | | |
| 10·2 | 92·2 | 69·7 | HACKNEY - - N. | *161·9* | CONTAINS HOMERTON M. A. B. HOSPITAL - - | 300 (*48·4*) | 2,000 (*47·4*) | 1,053 (*14·0*) |
| 3·0 | 12·6 | 69·1 | St. Olave - - - S. | *81·7* | Deptford, ½ S. | | | |
| 11·4 | 16·0 | 66·3 | GREENWICH - - S. | *82·3* | CONTAINS DEPTFORD M. A. B. HOSPITAL - - | 250 (*40·3*) | 350 ( *8·3*) | 769 (*10·2*) |
| 5·7 | 43·5 | 66·3 | Mile End - - - E. | *109·8* | Homerton, 1½ N. | | | |
| — | 22·0 | 63·9 | St. Giles and St. Geo. C. | *85·9* | | | | |
| 1·4 | 22·3 | 58·7 | *ISLINGTON** - - N. | *81·0* | (*Highgate H. herein.*) Hampstead, 1½ W. :—Homerton, 1½ E. | *79* | *317* | *203* (to Jan. 1885) |
| 1·6 | 34·0 | 53·7 | Shoreditch - - E. | *87·7* | Homerton, 1¼ N.E. | | | |
| — | 33·0 | 46·2 | HAMPSTEAD - - N. | *79·2* | CONTAINS HAMPSTEAD M. A. B. HOSPITAL. Highgate H., 1 N.E. | — | 380 ( *9·0*) | 396 ( *5·3*) |
| 0·8 | 8·4 | 44·8 | St. Pancras - - N. | *53·2* | Hampstead, ¼ N.W. (Highgate H. on E. edge.) | | | |
| — | 55·1 | 43·3 | Bethnal Green - - E. | *98·4* | Homerton, 1 N. | | | |
| 6·7 | 7·9 | 39·0 | LAMBETH - - S. | *46·9* | CONTAINS STOCKWELL M. A. B. HOSPITAL - | 70 (*11·3*) | 360 ( *8·3*) | 371 ( *5·0*) |
| 6·6 | 16·4 | 38·2 | Holborn - - - C. | *54·6* | | | | |
| — | 3·5 | 34·8 | FULHAM - - - W. | *38·3* | CONTAINS FULHAM M. A. B. HOSPITAL - - | — | 180 ( *4·3*) | 416 ( *5·5*) |
| — | 3·7 | 32·2 | Woolwich - - - S. | *35·9* | | | | |
| 4·2 | 25·4 | 25·2 | Whitechapel - - E. | *47·6* | | | | |
| 0·6 | 6·1 | 25·1 | Kensington - - W. | *31·2* | Fulham, ½ W. and S. | | | |
| — | 10·2 | 22·7 | Chelsea - - - W. | *32·9* | Fulham, ¾ W. | | | |
| 1·0 | 6·2 | 22·3 | Wandsworth - - S. | *28·5* | Stockwell, ¼ E. :—Fulham, 1 N.W. | | | |
| 4·5 | 11·6 | 21·9 | St. Marylebone - N. | *33·5* | Hampstead, 1 N. | | | |
| — | 5·5 | 20·5 | Lewisham - - - S. | *25·0* | Deptford, 1¾ N.W. | | | |
| — | 17·9 | 17·9 | Strand - - - C. | *35·8* | | | | |
| 1·9 | 3·8 | 15·6 | City - - - - C. | *19·4* | | | | |
| — | 6·8 | 15·5 | St. Geo., H. Square W. | *22·3* | Fulham, 1¼ W. :—Stockwell, 1¾ S.W. | | | |
| 0·8 | 3·7 | 11·2 | Paddington - - W. | *14·9* | Hampstead, 1½ N.E. | | | |
| — | 2·1 | 10·7 | Westminster - - W. | *12·8* | | | | |
| | | | | | | | [Plaistow H., West Ham 429 ( *5·7*)<br>"Ships," Long Reach, 4,090 (*54·3*)] | |

* See footnote to page 4.

## L 3.

App. No. 1.

Statistics of Metropolitan Small-pox Incidence: by Mr. Power.

L. Period: September 1884 to September 1885.

(12 months comprising the Second Cycle and the Decadence of the Small-pox Epidemic in London.)

*Operations of M. A. B. Small-pox Hospitals, and facts as to incidence of Small-pox* ATTACK *on inhabitants of certain Districts.*

*Homerton Small-pox Hospital.*—In operation throughout period with limitation of patients in hospital to 25, and used mainly for accommodation of severe cases. Drafting of cases at an earlier period of their "convalescence" than aforetime. Acute cases admitted, 1,053; drafted, 757. Average fortnightly admissions (to July) 49; average number in hospital 23. [Limit of 25 exceeded on six occasions only of 20 fortnightly returns.] Hospital closed in September.

Hackney N.—Suffered heavily from small-pox, especially in the autumn of 1884, during increase of hospital operations. On two subsequent occasions, viz., in February and May 1885 it suffered increase of its small-pox each time in sequence to sudden increase of the number of cases passed through Homerton Hospital. Dr. Tripe (in his Annual Report, 1885) shows that in the L. period certain areas of Hackney suffered small-pox attack as follows:—

Area 0—½ mile from hospital, with 21 per cent. of Hackney houses, suffered 48 per cent. of the total small-pox of the parish.

Area ½—1 mile from hospital, with 31 per cent. of Hackney houses, suffered 27 per cent. of the total small-pox of the parish.

Area 1 mile and upwards from hospital, with 48 per cent. of Hackney houses, suffered 25 per cent. of the total small-pox of the parish.

*Deptford Small-pox Hospital.*—In operation throughout period with limitation of patients in hospital to 25, and used mainly for severe cases. Drafting practised throughout of cases at early stage of their convalescence. Acute cases admitted, 769; drafted 472. Average fortnightly admissions (to July) 36; average number in hospital 23. [On seven occasions the number in hospital at date of fortnightly return exceeded 25, but only once did it reach 30.]

Greenwich S. did not suffer any considerable winter increase of small-pox until December 1884. In that month, in sequence to increase of hospital operations at Deptford, it suffered in successive fortnights double and treble its former amount of small-pox. Somewhat similar sudden increase of Greenwich small-pox was seen in April 1885 to follow increase of operations of Deptford Hospital.

*Camberwell* S.—Dr. Bristowe has shown (Transactions, Society Med. Offrs. Health) that between September 1884 and 7th February 1885, No. 4 Ward, adjacent to Deptford H., and containing 20 per cent. of the Camberwell population, had above 40 per cent. of the Camberwell small-pox.

*Fulham Small-pox Hospital.*—In operation from October 1884 to end of period under like conditions with the other hospitals. Total admissions (severe cases 295, mild cases 121), 416; drafted 299. Average of admissions (24 fortnights) 17; number in hospital never so many as 25; on three occasions only above 20.

*Chelsea*, FULHAM, and *Kensington* W.—Invasion per 100, by small-pox, of houses in several areas during L. period was as follows:—

| Houses distant from Fulham Hospital:— | | | | Houses in Area 0—1 Mile from Hospital. | Houses in remainder of the three Parishes. |
|---|---|---|---|---|---|
| 0—¼ Mile. | ¼—½ Mile. | ½—¾ Mile. | ¾—1 Mile. | | |
| 7·25 | 2·02 | ·91 | ·60 | 1·29 | ·59 |

*Hampstead Small-pox Hospital.*—In operation under conditions similar to those at the other M. A. B. hospitals from September 1884 to July 1885, when closed. Admitted 396; drafted 300. Average admissions (20 fortnights) 20; average number in hospital 14. At date of only two returns was number in hospital as high as 22.

HAMPSTEAD N.—Small-pox persisted in Hampstead until end of July, when it rather suddenly died out. Dr. Gywnn, in a paper to the Society of Officers of Health, gives the incidence of the disease, September to December 1884, as follows:—

| Houses invaded per 100 in each Area referred to. | | |
|---|---|---|
| 0—¼ Mile from Hampstead Hospital. | In remainder of Hampstead. | In a Poor Quarter of Parish, 0—¼ Mile from W. Ho., but distant from Hospital. |
| 10·6 | 0·8 | 1·1 |

*Stockwell Small-pox Hospital.*—In operation under conditions similar to those at other M. A. B. Hospitals until end of July 1885, when closed. Admitted 371 cases; drafted 259.

Average admissions fortnightly about 18; average inmates in hospital 18. Limit of 25 only once exceeded.

LAMBETH S.—Dr. Verdon, in his annual report for 1885, speaks of an exceptionally heavy incidence of small-pox in the area of Lambeth within half-a-mile of Stockwell Hospital.

*Plaistow Small-pox Hospital at West Ham.*—In operation under conditions similar to those at other M. A. B. hospitals until May 1885. Admitted 429; drafted 305.

*West Ham, Essex.*—See report, pp. 57-60.

**L 3** (*continued*).

App. No. 1.

Statistics of Metropolitan Small-pox Incidence; by Mr. Power.

*Hospital Ships in Long Reach.*—In operation throughout period.

Cases admitted to "Ships" direct from their homes in London 4,090; average per fortnight 157.

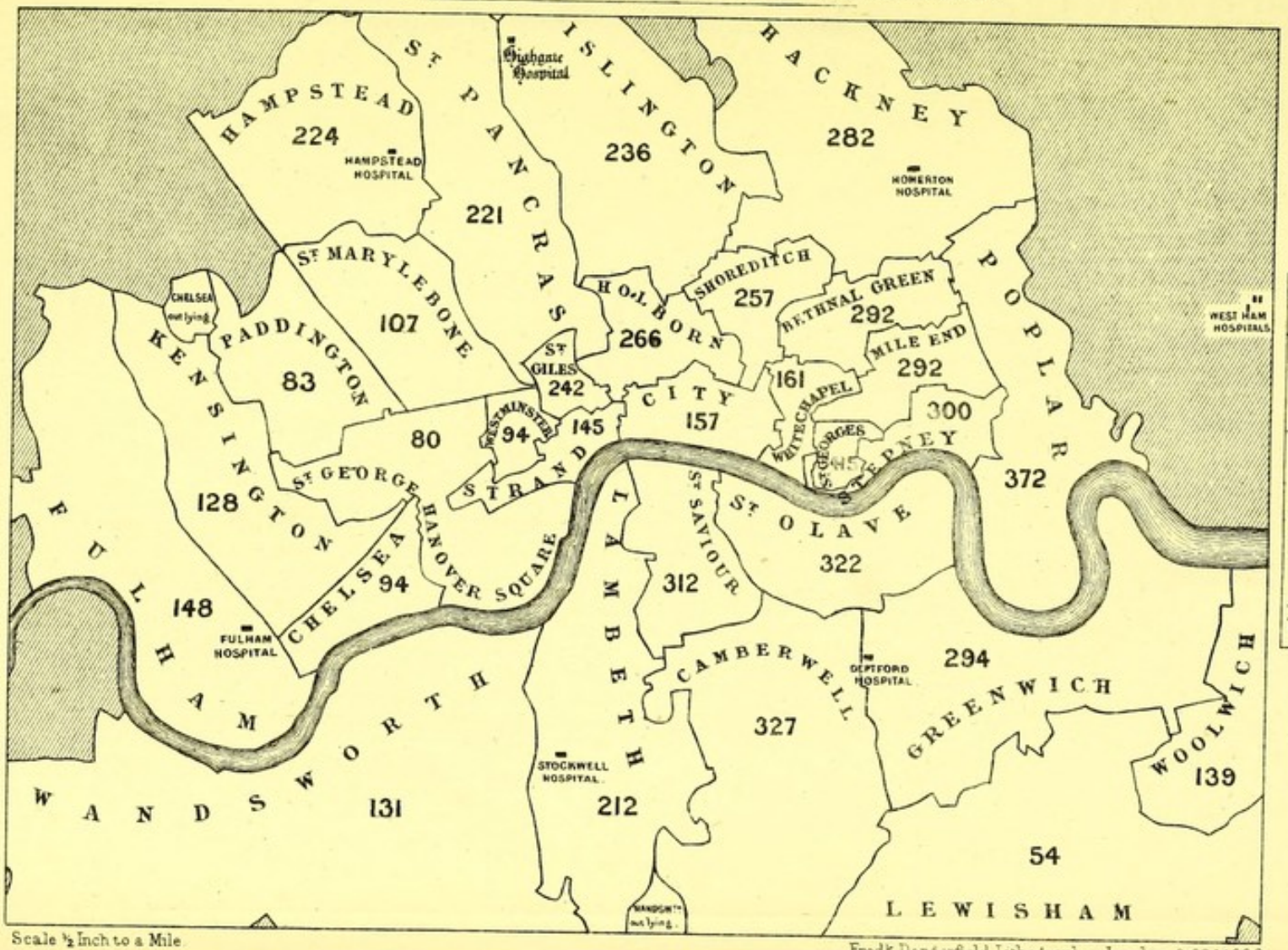
Cases drafted to "Ships" from intra-urban hospitals 2,400; average per fortnight 92.

Transfers from Ships to Camps 6,900; average per fortnight 266.

*Hospital Camps at Darenth* in use throughout period. Received above 7,000 cases.

# L. PERIOD: SEPTEMBER 1884 TO SEPTEMBER 1885.

*Smallpox Attacks per 100,000 population in each area referred to.*




Scale ½ Inch to a Mile.

Fred^k Dangerfield Lithographer London 8.87.14668.

*Smallpox Hospitals and their Operations. Period I.*

| Name of M.A.B. Hospital | Acute Smallpox Admissions to each | |
|---|---|---|
| | Number | Per cent. |
| Homerton | 1053 | 14·0 |
| Deptford | 769 | 10·2 |
| Fulham | 416 | 5·5 |
| Hampstead | 396 | 5·3 |
| Stockwell | 371 | 5·0 |
| Plaistow (W^m Ham) | 429 | 5·7 |
| Ships (Long Reach) | 4090 | 54·3 |

[Highgate 203 to Jan^y 85.]

L.4.

To face p. 54.

## L. Period: September 1884 to September 1885.



(*Notes on* 1884–85 *Epidemic to date.*)

The small-pox of the L. period, like that of the K. period preceding it, behaved somewhat differently from the small-pox of corresponding periods in previous epidemics. In the L. period, as in other second cycles of epidemics, small-pox was very much more prevalent and fatal than in the cycle immediately preceding it. But the L. period differed from the corresponding cycles of previous epidemics in that it was the last cycle of pronounced small-pox in the epidemic to which it belonged. This 1884–85 epidemic was, in fact, much less prolonged than antecedent epidemics. It lasted little over 18 months. By September 1885 small-pox was expiring, and by the beginning of 1886 had all but died out of London.

In the L. period which thus comprised the acme and decadence of an epidemic, the various influences determining the chief incidences of its small-pox were both conflicting and complex. Not least important among them was an extraordinary prevalence of the disease in the parish of West Ham just outside the east boundary of the metropolis (see West Ham report, page 97). The West Ham small-pox, which had grown up in the preceding period, especially in the neighbourhood of the West Ham Small-pox Hospitals, extended itself in the winter of 1884–85 with greatly increased virulence in the houses of a populous area of Essex that is practically continuous with East London. By their contiguity to West Ham and its current small-pox, certain metropolitan districts must needs have been affected in the same way that they would have been affected by contiguity to an intra-metropolitan district severely smitten by small-pox. Especially was this seen in the case of Poplar, which is coterminous with West Ham for several miles. Nevertheless, over the whole period of the epidemic not one of these East districts was able to displace Hackney N. containing the M. A. B. Hospital in chief use for small-pox; and few of them were far in front of certain South districts (distant from West Ham and separated from it by the Thames) which had been accommodating in their hospitals an appreciable, though far smaller, amount of small-pox than *Homerton*. The facts are shown in the subjoined table, which exhibits also similar facts for previous epidemics. And it is followed by a further table contrasting the position as regards small-pox mortality of the several metropolitan districts in the ten years under discussion with their rank in the ten years 1861–70, before M. A. B. hospitals were established.

| Rank in 1861–70. (Worst to Best.) | January 1876 to September 1879. | | | September 1879 to September 1883. | | | Districts. | September 1883 to September 1885. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. | | Rank. (Worst to Best.) | Small-pox Death-rate per 100,000. | Locality of Districts, and Number and Percentage of M. A. B. Acute Small-pox Cases received by Hospitals in Period. |
| 25th | 1st | 283·6 | N. *Homerton*, 4,650 (=30·4). | 2nd | 187·7 | N. *Homerton*, 3,460 (=25·9). | HACKNEY | 1st | 161·9 | N. *Homerton*, 3,053 (=26·0). |
| 6th | 7th | 171·7 | E. | 7th | 139·9 | E. | St. George's-in-East | 2nd | 125·1 | E. |
| 4th | 3rd | 224·9 | E. | 11th | 83·1 | E. | Poplar | 3rd | 112·4 | E. |
| 7th | 5th | 175·1 | E. | 12th | 84·3 | E. | Mile End | 4th | 109·8 | E. |
| 5th | 2nd | 269·2 | E. | 5th | 146·9 | E. | Stepney | 5th | 104·0 | E. |
| 2nd | 12th | 111·0 | E. | 6th | 141·7 | E. | Bethnal Green | 6th | 98·4 | E. |
| 23rd | 6th | 173·6 | S. | 4th | 170·9 | S. | Camberwell | 7th | 97·5 | S. |
| 8th | 19th | 69·4 | E. | 3rd | 178·7 | E. | Shoreditch | 8th | 87·7 | E. |
| 11th | 23rd | 59·4 | C. | 27th | 33·0 | C. | St. Giles & St. Geo. | 9th | 85·9 | C. |
| 13th | 4th | 183·4 | S. | 9th | 111·2 | S. | St. Saviour | 10th | 82·5 | S. |
| 12th | 8th | 170·1 | S. *Deptford*, 2,000 (=13·1). | 1st | 260·6 | S *Dept.* & "*Atlas*," 5,920 (=44·4). | GREENWICH | 11th | 82·3 | S. *Deptford*, 1,119 (=9·5). |
| 9th | 10th | 138·9 | S. | 8th | 130·1 | S. | St. Olave | 12th | 81·7 | S. |
| ? | 26th | 48·0 | N. (Highgate H. ?) | 13th | 63·3 | N. (Highgate H., 1,183.) | *ISLINGTON** | 13th | 81·0 | N. (Highgate H., 520 to Jan. 1885.) |
| 30th | 21st | 66·0 | N. *Hampstead*, 3,600 (=23·6). | 30th | 17·6 | N. *Hampstead* not in use. | HAMPSTEAD | 14th | 79·2 | N. *Hampstead*, 776 (=6·6). |
| 10th | 22nd | 63·8 | C. | 16th | 58·6 | C. | Holborn | 15th | 54·6 | C. |
| 22nd | 16th | 100·0 | N. | 22nd | 44·4 | N. | St. Pancras | 16th | 53·2 | N. |
| 3rd | 11th | 132·1 | E. | 10th | 109·3 | E. | Whitechapel | 17th | 47·6 | E. |
| 15th | 9th | 166·8 | S. *Stockwell*, 3,300 (=21·5). | 15th | 60·7 | S. *Stockwell*, 1,920 (=14·4). | LAMBETH | 18th | 46·9 | S. *Stockwell*, 731 (=6·3). |
| 26th æq. | 14th | 108·8 | W. *Fulham*, 1,750 (=11·4). | 18th | 52·2 | W. *Fulham*, 2,048 (=15·3). | FULHAM | 19th | 38·3 | W. *Fulham*, 596 (=5·1). |
| 18th | 30th | 32·1 | S. | 19th | 48·2 | S. | Woolwich | 20th | 35·9 | S. |
| 20th æq. | 28th | 44·7 | C. | 14th | 62·5 | C. | Strand | 21st | 35·8 | C. |
| 24th | 18th | 70·9 | N. | 26th | 33·5 | N. | St. Marylebone | 22nd | 33·5 | N. |
| 16th | 15th | 105·6 | W. | 23rd | 45·2 | W. | Chelsea | 23rd | 32·9 | W. |
| 26th æq. | 17th | 88·3 | W. | 24th | 40·4 | W. | Kensington | 24th | 31·2 | W. |
| 14th | 13th | 109·2 | S. | 17th | 56·1 | S. | Wandsworth | 25th | 28·5 | S. |
| 29th | 29th | 35·5 | S. | 25th | 36·8 | S. | Lewisham | 26th | 25·0 | S. |
| 17th | 24th | 56·8 | W. | 28th | 32·0 | W. | St. Geo., H. Square | 27th | 22·3 | W. |
| 19th | 25th | 54·4 | C. | 21st | 44·6 | C. | City | 28th | 19·4 | C. |
| 26th æq. | 20th | 68·1 | W. | 29th | 22·3 | W. | Paddington | 29th | 14·9 | W. |
| 20th æq. | 27th | 45·1 | W. | 20th | 45·1 | W. | Westminster | 30th | 12·8 | W. |
| | | | | | | | | | | [*Plaistow*, 645 (=5·5) *Ships*, 4,820 (=41·0)] |

* See footnote to page 4.

**L 5 (b).**

## Total Comparative Summary.

Further Table (compare page 47) showing for the Decennia 1861–70 and 1876–85 the Average Annual Small-pox Death-rates of each Metropolitan District, and giving for the latter Decennium the operations of the several M. A. B. Small-pox Hospitals.

| 1861–70.* No M. A. B. Hospitals. | | Districts. | 1876–85. Five M. A. B. Small-pox Hospitals in operation. | | |
|---|---|---|---|---|---|
| Rank. (Worst to Best.) | Average Annual Small-pox Death-rate per 100,000. | | Average Annual Small-pox Death-rate per 100,100. | Rank. (Worst to Best.) | Number and Percentage of M.A.B. Acute Cases received by Hospital in 10 years. |
| — | 27·6 | Metropolis. | 29·2 | — | — |
| 25th | 14·0 | HACKNEY - - N. | 63·3 | 1st | *Homerton* H., 11,163 (=27·6). |
| 5th | 37·4 | Stepney - - - E. | 52·1 | 2nd | |
| 12th | 24·4 | GREENWICH - - S. | 51·5 | 3rd | *Deptford* H.,‡ 9,039 (=22·4). |
| 23rd | 14·4 | Camberwell - - S. | 44·6 | 4th | |
| 6th | 34·2 | St. George's-in-East E. | 43·7 | 5th | |
| 4th | 39·6 | Poplar - - - E. | 42·2 | 6th | |
| 13th | 23·6 | St. Saviour - - S. | 38·1 | 7th | |
| 7th | 33·3 | Mile End - - - E. | 36·9 | 8th | |
| 9th | 27·9 | St. Olave - - - S. | 35·4 | 9th | |
| 2nd | 46·8 | Bethnal Green - E. | 35·1 | 10th | |
| 8th | 32·9 | Shoreditch - - E. | 33·1 | 11th | |
| 15th | 21·8 | LAMBETH - - S. | 29·1 | 12th | *Stockwell* H., 5,951 (=14·7). |
| 3rd | 40·5 | Whitechapel - - E. | 29·0 | 13th | |
| 26th æq. | 12·6 | FULHAM - - W. | 19·9 | 14th | *Fulham* H., 4396 (=10·9). |
| 14th | 22·2 | Wandsworth - - S. | 19·9 | 14th | |
| 22nd | 14·7 | St. Pancras - - N. | 19·8 | 16th | |
| ? | ? | *ISLINGTON*† - - *N.* | 19·2 | 17th | (Highgate H. herein; 1,700 cases 5 years, 1880–84.) |
| 16th | 21·2 | Chelsea - - - W. | 18·6 | 18th | |
| 10th | 26·3 | Holborn - - - C. | 17·8 | 19th | |
| 11th | 26·1 | St. Giles and St. Geo. C. | 17·8 | 19th | |
| 30th | 5·4 | HAMPSTEAD - - N. | 16·3 | 21st | *Hampstead* H.,§ 4,376 (=10·8). |
| 26th æq. | 12·6 | Kensington - - W. | 16·1 | 22nd | |
| 20th æq. | 14·9 | Strand - - - C. | 14·3 | 23rd | |
| 24th | 14·1 | St. Marylebone - N. | 13·8 | 24th | |
| 19th | 17·7 | City - - - - C. | 11·8 | 25th | |
| 18th | 18·2 | Woolwich - - - S. | 11·6 | 26th | |
| 17th | 19·6 | St. Geo., H. Square - W. | 11·1 | 27th | |
| 26th æq. | 12·6 | Paddington - W. | 10·5 | 28th | |
| 20th æq. | 14·9 | Westminster - W. | 10·3 | 29th | In 1884–85: *Plaistow H.*, at West-Ham, 645 (=1·7). *Hospital Ships* at Long Reach, 4,090 (=11·9). |
| 29th | 12·3 | Lewisham - - - S. | 10·1 | 30th | |

* See preface to this memorandum and preliminary table, pages 5–7.
† See footnote to page 4.
‡ Including cases received in 1881–82 on board "Atlas" moored at Deptford.
§ Hampstead Hospital not receiving small-pox during epidemic 1881–82.

## No. 2.



Report on the Behaviour of Small-pox in the Borough (Urban Sanitary District) of West Ham during the Epidemic of 1884–85; by Mr. W. H. Power.

I have inspected the hospital at Plaistow, which in 1884 was hired by the Metropolitan Asylums Board from the Poplar District Board of Works for use as a small-pox hospital for London patients. And I have inquired respecting the behaviour of small-pox in the West Ham Urban District during the epidemic of 1884–85, with especial reference to the concern that this and other two Plaistow small-pox hospitals may have had in the small-pox incidences witnessed.

For a general description of the Poplar hospital I refer to a letter* dated 20th January 1881, from the clerk to the Poplar District Board of Works addressed to the Asylums Board, a copy of which letter is appended to this report. Attached to the letter is a block plan* of the site, and I annex a map* of West Ham (6 inches to the mile) showing the relation of this and two other Plaistow small-pox hospitals to the Urban Sanitary District.

It will be seen that the Poplar hospital, the West Ham Guardians' hospital, and the Cottage small-pox hospital of the West Ham Urban Sanitary Authority, are situated near together on the extreme eastern border of West Ham parish (the Urban Sanitary District) about 100 yards or so N. and N.W. of the Barking high road. The Poplar hospital is bounded on three sides by roads, two of which have become built upon on their sides furthest from the hospital. South of the hospital, and within 30 feet of it, is a cottage in a triangular garden which is on one of its sides coterminous with the hospital boundary. The site of the hospital is only about three-quarters of an acre, and barely suffices for the hospital buildings crowded upon it. Thus the external wall of the northern pavilion is only 20 feet from Southern Road, while the western extremities of both pavilions are not 10 feet from Short Street, North. East of the hospital certain "receiving rooms" are less than 20 feet from Western Road; on the south the external wall of the administrative block is on the extreme boundary of the hospital site.

The Poplar hospital, though consisting of two separate pavilions each of two storeys, has only single administrative offices, and so far has never been made to accommodate at one and the same time patients suffering from different infectious diseases. Indeed it has since its erection in 1879 only been utilised on three separate occasions. As the Poplar District hospital, it received between May 1881 and May 1882, 165 small-pox cases; and between October 1882 and May 1883, 22 cases of scarlet fever. As a metropolitan small-pox hospital under the Asylums Board it had (according to Metropolitan Asylums Board returns) under treatment between 31st May 1884 and May 1885, 645 small-pox cases.

The small-pox epidemic of 1884–85 has fallen on the West Ham Urban Sanitary District with very peculiar severity. In a population estimated in 1885 at 160,000, it caused in the two years 650 deaths, a rate annually of 2 in every 1,000 of the inhabitants. Small-pox in West Ham, as in the metropolis, began to be abundant about March 1884, and during April, May, and early June attained epidemic prevalence. Then for a while, as indeed is usual in London during the summer season, the disease abated somewhat in this district; but

* Not reproduced here.

with autumn it acquired increased activity, and during winter and ensuing spring attained an epidemic intensity not often witnessed at the present day in this country. In six consecutive months, November 1884 to end of May 1885, small-pox caused above 400 deaths in West Ham, a rate of mortality equal to 5 per 1,000 annually of the population.

The small-pox epidemic in question has not equally affected all parts of the West Ham Urban Sanitary District. It has fallen with exceptional severity on Plaistow, especially on that part of it in the neighbourhood of the three small-pox hospitals. On the map I refer to, the circle of three-quarter mile radius,* with its centre at the small-pox hospitals, comprises 5,051 houses in West Ham, with a population (estimated at six persons per house) of 30,306. The remainder of the Urban Sanitary District includes 21,959 houses, with (at a like estimate) 131,754 inhabitants. In the former area, which may be termed the hospital area, the small-pox death-rate during 1884–85, amounted to 6·4, and in the latter to not more than 3·4 per 1,000 of the population. There were not, so far as I can ascertain, any differences in the population of the two areas of a sort to account for the exceptional small-pox mortality witnessed in the neighbourhood of the hospitals.

In reference to the concern of the Metropolitan Asylums Board (Poplar) Hospital, and of other Plaistow small-pox hospitals in this excessive small-pox mortality in their neighbourhood, I annex a table showing fortnight by fortnight the relations in time between use of the hospitals in question and incidences of small-pox mortality on the hospital area, and on the remainder of West Ham Urban Sanitary District.

From this table it would appear that:—

(1.) In the six months, December 1883 to 21st June 1884, corresponding to the rise and culmination of the first part of the epidemic in the metropolis, West Ham became notably affected by small-pox (*a*),† especially, and earliest, in that portion of it situated within three-quarters of a mile of the Plaistow small-pox hospitals. During the period this hospital area suffered a rate of small-pox mortality greater than that of the remainder of the district in the proportion of 10 to 1. This excessive incidence on the hospital area was in no way attributable to the Metropolitan Asylums Board (Poplar) hospital, or to the West Ham Urban Sanitary Authority's Cottage small-pox hospital. The former did not come into use until 31st May, and cannot, therefore, have operated to produce death from small-pox until quite the end of the period in question; and the latter had not yet been established. In so far as any hospital could have been concerned in the spread of small-pox at West Ham, the Guardians' hospital, and it only, could have been concerned. This hospital began to receive cases of small-pox in December 1883, and the first cases received into it were not from its immediate neighbourhood, but from more distant parts of the West Ham Union. Up to 21st June 1884, it had admitted above 100 small-pox cases.

(2.) In the two and a half months, 22nd June to 30th August 1884, a period corresponding to the normal seasonal decline of epidemic small-pox in the metropolis, West Ham suffered about the same amount (*b*)† of fatal small-pox as in the preceding six months. But in this period the small-pox mortality in the hospital area was smaller, whereas in the

* Note.—A circle of three-quarters of a mile radius is here used for the reason that it includes the whole of the built-upon area of Plaistow, and that, while excluding the populous parts of Stratford, West Ham, and Canning Town, it leaves between these places and Plaistow a zone that is comparatively sparsely populated.

† See footnote on next page.

remainder of West Ham Urban Sanitary District it was greater than in the antecedent period. Nevertheless the actual rate of small-pox mortality in the hospital area was greater than that in the remainder of the district in the proportion of nearly 2 to 1. In this period the Metropolitan Asylums Board (Poplar) hospital and the Guardians' small-pox hospital together received (in nearly equal numbers) about three times as many small-pox patients as were in the whole of the previous six months admitted to the Guardians' hospital. Temporary abatement, therefore, at this season, of small-pox mortality in the neighbourhood of these hospitals, was in no way connected with disuse of them for small-pox; the circumstance, however, is of especial interest as being altogether confirmatory of the experience of Fulham, where in the corresponding period of 1884, small-pox declined and for a while even died out in the hospital area, notwithstanding that admissions to the Fulham hospital in the period had increased threefold.

(3.) In the succeeding six months, end of August 1884 to end of February 1885, a period corresponding to that of renewed autumn and winter activity of small-pox in the metropolis, small-pox fastened with peculiar severity on West Ham; and especially on that portion of it situated within three-quarters of a mile of the small-pox hospitals. In this period the amount of fatal small-pox (*c*)* in this Urban Sanitary District was nearly four and a half times greater than in the whole of the preceding eight and a half months. Meanwhile the rate in the hospital area increased again over that of the rest of the district in the proportion of more than 3 to 1. Throughout these six months the Metropolitan Asylums Board (Poplar) hospital and the Guardians' hospital were in active use for small-pox; each receiving 400 or more cases. The Cottage small-pox hospital of the West Ham Urban Sanitary Authority was not yet in use; but towards the end of the period it was prepared for small-pox, and began to receive cases early in March.

(4.) In the next six months, March to September 1885, a period corresponding to that of spring exacerbation followed by rapid decline and practical cessation of small-pox in the Metropolis generally, the epidemic attained its acme in West Ham, and then quickly declined and died out. In this six months* the amount of fatal small-pox (*d*) in the Urban Sanitary District was greater than in all the previous 14½ months put together. Meanwhile the small-pox death-rate in the hospital area and that in the remainder of the district became more closely alike than at any previous period of the epidemic; the rate in the hospital area was greater than that in the remainder of the Urban Sanitary District in the proportion only of 110 to 100. This approximation of the rates of the two divisions of the Urban Sanitary District was due, not so much to diminution of small-pox in the hospital area, as to a very serious growth of the disease beyond, viz., in and about the Canning Town and Victoria Dock district, situated one or two miles S.W. of the Plaistow Hospitals. At the very beginning of this period, the Cottage small-pox hospital of the Urban Sanitary Authority began to receive patients, and then for a while there were three small-pox hospitals at one and the same time in use at Plaistow. But this state of affairs did not continue beyond the middle of May; the operations of the Metropolitan Asylums Board (Poplar) hospital were at no time so extensive as they had previously been; only about 80 cases are recorded as having been received there, and at the end of the month

* Small-pox deaths in Urban Sanitary District in six months (*a*) 23; in two and a half months (*b*) 26; in six months (*c*) 219; and in six months (*d*) 382.

the Asylums Board lease of the building lapsed, and the hospital ceased to receive small-pox patients. Throughout the period (March to September), the Cottage small-pox hospital of the Urban Sanitary Authority and the Guardians' small-pox hospital, continued to receive cases, and the latter remained in limited use for small-pox after closure of the former in November.

| Small-pox Deaths of the Metropolis. | Small-pox Cases admitted to Plaistow Small-pox Hospital. | | | | | Fortnight ending | Small-pox Deaths in 1884-85 of Persons resident at Date of their Attack in West Ham Urban Sanitary District. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Metropolitan Asylums Board (Poplar) Hospital at Plaistow. | | West Ham Guardians' Hospital at Plaistow. | | West Ham Urban Sanitary Authority's Cottage Hospital at Plaistow. | | In Area within three-quarters of a mile of the Plaistow Small-pox Hospital. | | | | In the remainder of the West Ham Urban Sanitary District. | | | |
| | | | | | | | Number of Deaths. | Deaths per cent. of Houses. | | | Number of Deaths. | Deaths per cent. of Houses. | | |
| | | | | | | 1884. | | | | | | | | |
| 8 | — | | 6 | | — | 5th Jan. - | 1 | ·019 | | | — | — | | |
| 7 | — | | 2 | | — | 19th „ - | — | — | | | — | — | | |
| 3 | — | | 6 | | — | 2nd Feb. - | — | — | | | — | — | | |
| 6 | — | | 2 | | — | 16th „ - | — | — | | | — | — | | |
| 12 | — | | 5 | | — | 1st March | 1 | ·019 | | | — | — | | |
| 12 | — | | 8 | 101 | — | 15th „ - | 1 | ·019 | | | 1 | ·004 | | |
| 14 | — | | 13 | | — | 29th „ - | 1 | ·019 | ·310 | | — | — | | ·029 |
| 24 | — | | 12 | | — | 12th April - | 3 | ·059 | | | 1 | ·004 | | |
| 24 | — | | 17 | | — | 26th „ - | 2 | ·039 | | | 1 | ·004 | | |
| 30 | — | | 10 | | — | 10th May - | 3 | ·059 | | | 1 | ·004 | | |
| 66 | — | | 20 | | — | 24th „ - | 2 | ·039 | | | 1 | ·004 | | |
| 103 | 32 | | 11 | | — | 7th June - | 1 | ·019 | | | 2 | ·009 | | |
| 89 | 87 | | 11 | | — | 21st „ - | 1 | ·019 | | | — | — | | |
| 90 | 17 | 166 | 14 | 132 | — | 5th July - | — | — | | | 1 | ·004 | | |
| 61 | 15 | | 16 | | — | 19th „ - | 1 | ·019 | | | 1 | ·004 | | |
| 53 | 3 | | 36 | | — | 2nd Aug. - | — | — | ·156 | | 4 | ·018 | | ·080 |
| 31 | 12 | | 44 | | — | 16th „ - | 1 | ·019 | | | 8 | ·036 | | |
| 35 | 5 | | 24 | | — | 30th „ - | 6 | ·118 | | | 4 | ·018 | | |
| 25 | 10 | | 14 | | — | 13th Sept. - | 1 | ·019 | | | 4 | ·018 | | |
| 24 | 35 | | 29 | | — | 27th „ - | 4 | ·079 | | | 4 | ·018 | | |
| 27 | 38 | | 21 | | — | 11th Oct. - | — | — | | | 7 | ·032 | | |
| 48 | 54 | | 36 | | — | 25th „ - | 3 | ·059 | | | 5 | ·022 | | |
| 66 | 20 | | 45 | | — | 8th Nov. - | 3 | ·059 | | | 3 | ·013 | | |
| 95 | 31 | | 15 | | — | 22nd „ - | 12 | ·237 | | | 5 | ·022 | | |
| 101 | 35 | 397 | 63 | 461 | — | 6th Dec. - | 9 | ·178 | | | 12 | ·054 | | |
| 113 | 24 | | 51 | | — | 20th „ - | 12 | ·237 | 1·836 | | 20 | ·091 | | ·569 |
| | | | | | | 1885. | | | | | | | | |
| 90 | 30 | | 53 | | — | 3rd Jan. - | 8 | ·158 | | | 11 | ·050 | | |
| 112 | 43 | | 43 | | — | 17th „ - | 11 | ·217 | | | 10 | ·045 | | |
| 117 | 32 | | 30 | | — | 31st „ - | 7 | ·138 | | | 17 | ·077 | | |
| 116 | 40 | | 37 | | — | 14th Feb. - | 18 | ·356 | | | 16 | ·073 | | |
| 81 | 20 | | 32 | | — | 28th „ - | 5 | ·099 | | | 12 | ·054 | | |
| 62 | 17 | | 33 | | 27 | 14th March | 6 | ·118 | | | 27 | ·123 | | |
| 47 | 14 | | 42 | | 21 | 28th „ - | 5 | ·099 | | | 30 | ·136 | | |
| 79 | 6 | | 47 | | 17 | 11th April - | 13 | ·257 | | | 29 | ·132 | | |
| 100 | 19 | | 41 | | 22 | 25th „ - | 11 | ·217 | | | 28 | ·127 | | |
| 114 | 6 | | 43 | | 23 | 9th May - | 8 | ·158 | | | 27 | ·123 | | |
| 125 | — | | 28 | | 29 | 23rd „ - | 5 | ·099 | | | 36 | ·164 | | |
| 117 | — | | 42 | | 38 | 6th June - | 7 | ·138 | | | 34 | ·154 | | |
| 76 | — | 82 | 44 | 493 | 31 | 20th „ - | 4 | ·079 | 1·519 | | 17 | ·077 | | 1·383 |
| 67 | — | | 26 | | 17 | 4th July - | 7 | ·138 | | | 21 | ·095 | | |
| 38 | — | | 45 | | 26 | 18th „ - | 3 | ·059 | | | 20 | ·091 | | |
| 33 | — | | 20 | | 12 | 1st Aug. - | 4 | ·079 | | | 12 | ·054 | | |
| 29 | — | | 15 | | 11 | 15th „ - | 2 | ·039 | | | 14 | ·063 | | |
| 14 | — | | 9 | | 8 | 29th „ - | 2 | ·039 | | | 3 | ·013 | | |
| 15 | — | | 12 | | 8 | 12th Sept. - | — | — | | | 6 | ·027 | | |
| 19 | — | | 10 | | 4 | 26th „ - | — | — | | | 1 | ·004 | | |
| 10 | — | | 2 | | 4 | 10th Oct. - | — | — | | | — | — | | |
| — | — | | 2 | | 1 | 24th „ - | — | — | | | — | — | | |
| | | 645 | | 1187 | 299 | | 194 | | 3·840 | | 456 | | | 2·076 |

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