REPORT ON EPIDEMICS IN GREAT BRITAIN, 1863.

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[*Read May 2nd*, 1864.]

The report which I last laid before the Society referred to the fourteen months ending 31st November, 1862. The present report refers to the fourth quarter of 1862 and the year 1863. In subsequent reports it will unquestionably be best, as in the report which I am about to submit to the Society for 1863, to include, for the purpose of ready comparison with the detailed reports of the Registrars-General of England and Scotland, the twelve months from the 1st of Jan. to the 31st December. It has been customary for the Secretary to prepare a report on epidemics for the beginning of each Session. I did not feel at liberty to alter this arrangement at the beginning of last session. But as no advantage is obtained by the arrangement, and, from the plan which I have adopted in drawing up the report, a manifest disadvantage arises from the want of correspondence of the periods included in the reports with that included in the annual reports of the Registrar-General, I have postponed reading the report for the present session, until the mortuary returns for the past year were completed. I had hoped by this postponement, moreover, to have been able to preface the report with an account of the status of epidemic disease in England during the decennium 1851-60. The medical officer of the Privy Council, in his fourth annual report, published in 1862, wrote, "Eighteen months ago, with their lordships' authority, I brought under the consideration of the Registrar-General that very great help would be given to the progress of sanitary investigation if he (having regard to the then approaching census of the population, and to the facilities which it would afford for the calculation of accurate death rates) would cause to be prepared a *digest of all the mortuary returns relating to the intercensual period* 1851-1861, with such distinctions of *age and sex*, and such a classification of *causes of death*, as would enable the student to estimate at least with approximate precision, how far each district in England is affected

by the several chief sorts of morbific influence. The Registrar-General with his invariable willingness to assist inquiries of this description, resolved to make the suggested compilation. I have reason to believe that it is now in an advanced state of preparation, and will at no distant period be completed. Ample means will then exist, and be universally accessible, for measuring the amount of mortal injury which different local influences inflict on different sections of our population." This important document I had been given to understand would in all probability be published soon after the opening of the present session of Parliament, and I was anxious to make use of the data which it would yield concerning epidemics in the preparation of the present report. The document was published late in the past quarter, but since its publication I have ascertained that a much more extensive analysis of the mortuary returns of 1851-60 is in course of preparation by the Registrar-General for England, and will be published about June. The latter analysis will differ materially in its arrangement from that which has been prepared for the medical officer of the Privy Council. It will also include data respecting epidemic diseases which the last-named analysis does not contain. Under these circumstances it is necessary that I should postpone any attempt to lay before the Society an account of the status of epidemic disease in England until the publication of the Registrar-General's further analysis of the mortuary returns for 1851-60. In the meantime, however, I shall make use of such data in the analysis already published as may throw additional light upon the epidemiology of the past year.

Before proceeding to the subject matter of this report, I would repeat the remarks which I made at the commencement of my last report. I then said, "In respect of epidemics, this report is necessarily based on the different returns of the Registrar-General of England and Scotland, published during the period to which it relates. The information contained in these returns on outbreaks of epidemic disease, at the time of, or soon after, their occurrence, is very imperfect. No other source of information, however, exists, or if existing, is accessible. I propose to bring the different facts on epidemics together in one connected view. The history thus formed will fall far short of what a scientific annual record of epidemic diseases should be; but the first step towards a more perfect history must be the systematic collation of existing materials."

I may add, that the information contained in these returns is furnished by the local registrars in accordance with the following instructions :—

Instructions to Registrars (*England*).—"If the deaths registered during the quarter have been above or below the average, state whether, in your opinion, the fact is wholly or partially accounted for by sanitary arrangements, by increase or decrease of population, the weather, small-pox, measles, scarlatina, whooping-cough, fever (including typhus, typhoid, relapsing, infantile fever), cholera, diarrhœa (including bowel complaint), dysentery, bronchitis, or other disease. Also with regard to increase or decrease of births, you may mention any circumstance to which it may be attributed. By 'average' must be understood *not* the average of numbers in other quarters of the year, but the average of *corresponding* quarters in four or five previous years."

Instructions to Registrars (*Scotland*).—"If at any time the births, deaths, or marriages registered during the quarter have been above or below the average, state whether epidemics, such as measles, typhus, cholera, etc., have prevailed in the district; or if there is anyoth er fact in the character of the weather, sanitary arrangements, movements of the population, etc., which will account for the circumstance."

The local registrars are alone to be considered responsible for the opinions they express, and the value of their statements epidemiologically is to be determined solely by a comparison with the detailed reports of the Registrar-General. My last report (the first laid before the Society upon the present plan) referred chiefly to 1862, but the detailed mortuary reports for that year are not published.

The health of England in the first three quarters of 1862 was unusually good, so far as an estimate may be formed from the low rate of mortality which prevailed. The health of Scotland was below the average. *Scarlatina*, which had prevailed widely in the northern counties of both England and Scotland in the last quarter of 1861, became active in the southern counties of both countries in the third quarter of 1862. *Measles* broke out in many localities in the northern and southern districts of England, in the winter (first) quarter, and in some instances was very fatal. In Scotland the disease was prevalent in the spring and summer quarters. *Diphtheria* prevailed more or less in every registration district during the nine months. In Scotland the disease, together with sore throat, was epidemic throughout the year. *Whooping-cough* was widely prevalent in England

during the winter quarter; in Scotland, during the winter and spring quarters. *Influenza* was epidemic in Scotland in the last quarter of 1861 and first quarter of 1862. *Small-pox* broke out in many districts of England, and most especially in the eastern, south-western, and northern counties, and in Yorkshire. A remarkable epidemic of *typhus*, which had commenced in 1861, prevailed throughout the nine months in London. None of the outbreaks of the diseases referred to as occurring in England, assumed what may be termed general proportions; they were truly local irruptions.

THE LAST QUARTER OF 1862.

England. In the last quarter of 1862, the rate of mortality rose above the average. Food was cheap; the weather fluctuating. The beginning and end of the quarter were unusually warm; the middle unusually cold. At Greenwich, "the mean temperature of October was, with two exceptions, higher than it had been in the same month since 1847; that of November was lower than it had been in the same month since 1829, two Novembers excepted; and December was warmer than the month had been since 1843, with the exception of three Decembers in that period." A cold period set in suddenly on the 6th of November, and persisted until the 2nd of December, the mean temperature of the period being 4·5° below the average. A period of unusual warmth, in which the daily excess of temperature was 4·5°, followed, and continued to the end of the year. The fall of rain was slightly above the average of the three months.

The death-rate of the quarter was 2·226 per cent., against an average of 2·171. The increased mortality was attributed to the sudden invasion of cold in November, and the abrupt succession of heat. The remarks of the Registrar-General on the mortality of the quarter, require to be quoted at some length:—

"The North-Western counties, Yorkshire, London, the Northern counties, the West Midland, are five divisions in which the highest rate of mortality prevailed. In the first, which contains the districts of the cotton manufacture, the rate (2·66 per cent.) was higher than in any other division. This distinction is not of recent birth; it is not the fruit of adverse circumstances, but has sprung from causes which have been in operation since Liverpool, Manchester, and other towns in what has been called the worst drained part of England, rose into importance as seats of commerce and manufacture. But whatever be the sanitary condition of

the towns and villages they inhabit, human beings must be affected by the atmosphere in which they are immersed, and the effects of which they can but partially control; and as the cotton districts participated with the rest of the kingdom in the benefit of a healthy summer, they have also suffered, like other parts, from a less healthy autumn. The mortality rose from 2·46 per cent., the mean rate of the two previous autumns, to 2·66 per cent., but in London it also rose from 2·22 to 2·44. Further, the mortality did not increase quite so much in Lancashire and Cheshire as it did in Yorkshire.

"The Registrar of Preston sub-district reports that typhus became prevalent there in the early part of October; it excited the most serious apprehensions, and, notwithstanding the greatest efforts to check its progress, forty-eight cases proved fatal. Dr. Buchanan in his report pronounced it to be of the Irish type, "the steady follower on famine"; he found a decline from the normal standard of health among the unemployed operatives of the cotton towns, and that scurvy and other symptoms of a hæmorrhagic tendency had been manifested. On the other hand, the report of the Central Executive Committee (for the relief of distress), dated 19th January, states that the middle of winter had been gained without the outbreak of any serious epidemic, or the appearance of scurvy, diarrhœa, or dysentery, forms of disease that follow prolonged low diet, and the use of coarse food without much variety. The Registrar of Chorlton-upon-Medlock writes that notwithstanding the great number of persons unemployed, no epidemic has prevailed, nor any disease resulting from privation; that the poor are provided for liberally and with "wise economy." Scarlatina and diphtheria, and also diarrhœa, prevailed to a considerable extent in Manchester. An increase of deaths in Ashton-under-line is attributed to scarlatina and measles. Scarlatina caused eighty deaths, being a third part of the total number, in Oldham-above-town; these occurred not only in the working class, but in the general population. In Blackburn and in Witton, which is also in the Blackburn district, the mortality was increased by measles and bronchitis; and at the latter place there was "much sickness in consequence of the damp weather." The mortality in the Chorley sub-district was nearly doubled, chiefly by measles; and the weather, "mild and damp," was considered unfavourable to health.

"It will tend to strengthen the conclusion that the increase

of mortality in Lancashire in the last quarter was not caused directly by famine, nor indirectly by diseases induced or aggravated by it, if it be stated, in addition to facts that have been mentioned above, that of the twenty-six districts, of which that county is composed, while a certain number exhibited an increase of deaths over those of the corresponding quarter in 1861, there was in an equal number of districts an actual decrease. The districts of Bolton, Manchester, Salford, Burnley, and Preston are amongst those that stand in the latter more favourable category. The munificence of the nation, aided by its kinsfolk in other lands who "have brought their food from afar," has hitherto averted the last, direst extremity, the death of a people by famine. Amongst elements of the situation that have been conducive to health, are the cheapness of provisions, a winter in great part unusually mild, increase of maternal care, recreation out of doors, and perhaps, for many men and women who were not robust, a season of needful rest. The future of "the cotton-famine" is still undetermined,—in the language of the Central Executive Committee it may be even "full of gloom and uncertainty," and "to chill the sympathy or arrest the efforts" that have been evoked would be rash,—but that which is past may be subject of congratulation; and it is now known that the history of the distress "is not written in the death-registers of the year that has closed."

The apprehensions of the Central Executive Committee have happily been falsified by events. I gave some account of the outbreak of *typhus* in Preston in the autumn of 1862, in my last report. The disease also manifested itself in Manchester, Salford, Blackburn, Accrington, and Chorley. Dr. Buchanan communicated to the Society a history of the outbreak of typhus in Lancashire in the course of the past session.* I quote the following remarks respecting epidemic diseases in the cotton-manufacturing districts from a report made by that gentleman to the Privy Council, on the sanitary condition of the cotton towns of Lancashire and Yorkshire, *apropos* of the cotton famine:†—

"Epidemic diseases," he says, "fostered as they are by bad diet, bad air, and want of cleanliness, constitute a further index to an exceptional prevalence of those agencies. Putting aside sporadic cases, the following complaints were

* See p. 17 of the present volume of Transactions.
† See Fifth Report of Medical Officer of Privy Council, p. 303.

met with in an epidemic form:—Chicken-pox in a part of Manchester; measles in Ashton, Blackburn, Bury, Chorley, Manchester, and, to a less extent, in Salford, Preston, and Wigan; whooping-cough in Chorley, Manchester, Salford, and Stockport; scarlatina in Ashton, Darwen, Manchester, Oldham, and a month or two before in Stockport; typhoid fever frequent in Bolton, Bury, Chorley, Darwen, and Stockport; four typhus cases seen in Preston, Manchester, and Chorley. Of chicken-pox, whooping-cough, and typhoid no further mention need be made. Measles has been characterised in Ashton and Chorley by the singular amount of diarrhœa accompanying it; there, as well as in Blackburn and Bury, by the unusuality of its long complication. Ophthalmia, as frequently attendant on measles in Chorley, has been before mentioned. Scarlatina in each place of its occurrence has been distinguished by the extreme degree in which it has affected the mucous membranes. Very bad throats, with nasal discharges and glands in the neck greatly swollen, have been commonly observed; and in some places, as at Oldham, have given a highly fatal character to the epidemic. In this town of 72,333 inhabitants, no fewer than 169 deaths were registered between midsummer and December 1st.

"Some typhus [to interpolate one or two passages from the earlier portion of the report] has made its appearance, The prosperous towns of Lancashire have been wholly exempt from typhus fever (of the true Irish type) since 1847-8, when it prevailed epidemically, and was fatal to an extent only exceeded among the starving population of Ireland. In the present year this steady follower on famine has again appeared, and at Preston and Manchester has assumed an epidemic form. Those cases of the summer have multiplied, and some in the autumn. At Preston 227 cases of this form are known to have occurred between midsummer and the end of November; and those attacked have died at the rate of about 23 per cent. In Manchester there have probably been at least 100 attacks and twenty deaths in the same period. The existence of typhus gives perhaps the strongest evidence of a deteriorated physical state among the unemployed operatives."

In this quarter the prevalence of *measles* was reported from thirty registration districts, *scarlatina* from sixty-two, *diphtheria* from sixteen, and *small-pox* from nineteen. The districts affected by measles were most numerous in the west midland (six) and north-western counties (five); by scarla-

tina in the north-western (twelve), south-western (nine), and west midland (eight); by diphtheria in the eastern (three), west midland (three), and north-western (three). The districts affected with small-pox were in the south-western (five) and northern counties (four), and Yorkshire. Ten of the nineteen infected districts were in Yorkshire.

The Metropolis.—The deaths from zymotic diseases in the last quarter of 1862 were largely in excess of the two previous corresponding quarters. The mortality from small-pox (192) was greater than in 1860 and 1861; and the deaths were more numerous in the latter than in the earlier weeks of the quarter. Scarlatina, the most fatal epidemic disease of the three months, caused 1165 deaths. The mortality from this disease in the last quarter of 1861 had been 1145; of 1860, 602. Diphtheria was less fatal than in the like quarter of 1861, and occasioned 202 deaths. The mortality from measles (900) was largely in excess of the corresponding quarters in the four previous years. There was a diminution in the mortality from whooping cough. Finally the deaths from continued fevers amounted to 796. The mortality from these maladies in the fourth quarter of 1861 was 624; of 1860, 558; of 1859, 311; and of 1858, 559. The source of the increased mortality from continued fevers I shall refer to in a subsequent part of this report.

Scotland.—The weather was more boisterous in Scotland during the last quarter of 1862 than in England. There was an unusual prevalence of high winds and an excessive fall of rain. But the march of the temperature presented the same general characteristics as in England. The mean temperature of October and December was above the average, and the weather in both months was comparatively mild. The mean temperature of November was nearly 3 degrees below the average, and lower than the average of December. Severe cold set in in November, accompanied by snow and ice; while in December south-western breezes prevailed, so that the month felt balmy and warm after the stormy November.

The death-rate was considerably above the average, being at the annual rate of 209 as compared with 202 in 10,000 population. There was even a larger amount of sickness among the population than the mortality, great as this was, indicated.

"The sudden changes of weather," says the Registrar-General, "attended with high and piercing winds, and the severe wintry weather during the second week of November,

following as it did months of unusual coolness and humidity, induced much general sickness, in some cases assuming the form of influenza, in others of febrile attacks, and in others affections of the respiratory organs. In some instances, too, it induced outbreaks of diarrhœa. Sore throats were unusually prevalent, in several cases assuming the diphtheritic type; while diphtheria itself seemed to be on the increase, and in some districts largely contributed to the mortality. Croup, too, was unusually prevalent, and in numerous instances appeared to pass into diphtheria; if the croup itself were not in these instances but a symptom of the presence of the latter disease. Over all Scotland, gastric and typhus fevers seem to have been prevalent; and among children, measles in the northern half of Scotland, and scarlatina in the southern, seem to have been the prevalent epidemics. Small-pox in several districts appeared as an epidemic, but in none, in so far as the registrars' note show, does its prevalence and fatality appear to have equalled its outbreak in Edinburgh and Leith. It is greatly to be desired that some legislative enactment were passed for enforcing vaccination as a purely protective measure."

Epidemics in 1863.

1. The Weather.

First Quarter.—England.—The weather was singularly warm. With the exception of eleven days in March, the daily temperature was in excess, on an average, $4\frac{3}{4}$ degrees. The winter was one of the warmest on record. The mean temperature of the three months, viz., December, January, and February was 42·5. "In the preceding ninety-two years," writes Mr. Glaisher, "the warmest winter of all was that of 1795, its mean temperature was 43·2; this was closely approached in the years 1834 and 1846, in each of which the value was 43·1; and these are the only instances of higher temperature since the year 1771." In the year 1848 the temperature of the same period was 42·4 closely approximating to the present. The month of March this year was also warm, which was not the case in the year 1795. The mean temperature of January, February, and March was 42·6. In 1834 the mean temperature of the same months was 42·9; in 1846 it was 43·6; and these are the only instances, as far as trustworthy records extend, of an increase above the average temperature of the first months of 1862. All over the country the weather in Feb-

ruary and March was remarkably fine and mild. The *fall of rain* in the extreme northern parts of England in January was somewhat in defect; about London it was a little over the average, and north of 53 degrees it was in excess, and very much so at northern stations. At Belvoir Castle, in January, primroses, aconites, hepaticas, and rhododendrons were in flower, and thrushes was heard singing as in spring.

In *Scotland* "it can scarcely be said there was any wintry weather." The mean temperature of the quarter was much greater than usual. In January and February the humidity of the atmosphere was above the average, and much rain fell. "Frosts and snow were almost unknown." The mean temperature of January was 1·4, and of February 4·5 above the average of the previous November. January and February are usually the coldest months in Scotland. The mean temperature of the quarter was 40·9. (January, 38·5; February, 41·2; March, 42·9).

Second Quarter.—England.—The mean temperature of April was 49·1, being higher than in any April since 1844. The mean temperature of May was 52·0, being 3·4 lower than in 1862, and of nearly the same value as in 1861. The mean temperature of June was 58·1, being 1·8 higher than in 1862, and is lower than in 1861. The temperature of the five months ending April 1863 (44·2) was as high as any like period on record. The nearest approach to this high temperature was in the period ending April 1796, when the mean was 43·4; in 1854 it was 43·6; in 1846, 43·9; and in 1859, 43·5. The days and nights in April were warm, and the nights in May; and the days in June were cold. The humidity of the atmosphere and barometric readings were about the average.

Scotland.—April was cloudy, windy, and rainy; the barometric pressure low but steady, and the mean temperature (44·4), 0·9 above the average. This increased temperature arose more from the absence of cold nights than the occurrence of hot days. May was cloudy, windy, and rainy, the mean temperature (48·6) being 1·1 below the average. June was also cloudy, dull, and rainy; the barometric pressure being low, and the mean temperature (54·0) 1·6 below the average. The range of temperature was also small.

Third Quarter.—England.—From July 1st to 15th, excepting two days, the temperature of the air was in excess of the average to the amount of $2\frac{1}{4}$ degrees. A cold period followed, which continued till the 1st August, during which

the average daily deficiency amounted to $3\frac{3}{4}$ degrees, and was then followed by a warm period, extending till the 16th August, the excess of temperature amounting to $3\frac{1}{2}$ degrees. On July 19th the temperature fell to 32·0 in the air and to much lower on the ground at most places north of London.

A generally cold period extended from the 17th August to the end of September, a period of forty-five days, during which the daily deficiency amounted to $2\frac{1}{4}$ degrees.

The mean temperature of July was 60·8, being higher than in 1862, when it was 59·1, and lower than in 1861, when it was 60·9.

The mean temperature of August was 61·9, being higher than any August since 1858, excepting the years 1859 and 1861, which were 63·5 and 63·2 respectively.

The mean temperature of September was 53·7, being lower than any September as far back as 1841, with the exception of 1845, when it was 53·6, and 1860, when it was 53·4."

The days were warm in July and August, and the nights also in August; in September, both days and nights were cold. The fall of rain in the quarter was 1·6 inch below the average of preceding forty-seven years.

Scotland.—In July the barometric pressure and range of temperature were unusually high. The mean temperature (56·1) was 0·6 less than the average. The month was one of excessive drought. The amount of northerly wind was beyond all precedent. In *August* abundant rain fell. The mean temperature (55·7) was 1·5 below the average. In September the month was cold, rainy, and windy; the barometric range being beyond all former precedent, and the mean temperature (50·1) no less than 3·0 below the average.

Fourth Quarter.—"Till October 9th the temperature was alternately warm and cold. On October 10th a warm period set in, and continued to the 22nd inclusive, the average daily excess of mean temperature was nearly 5·0; the weather then changed, and till November 13th the weather was variable with respect to warmth, some days being in excess of temperature to a considerable amount, and others below, but the latter preponderated; and the daily deficiency of warmth for the twenty-two days ending November 13th was rather more than 1 degree daily. From this time to the end of the quarter there was an excess of temperature over the average, amounting, for these forty-eight days ending

December 31st, to 4½ degrees daily. The same excess of temperature extended over the country. The period from October 30th to the beginning of December was unusually stormy, even for the time of the year. Successive gales of wind occurred till November 4th. Other severe storms took place all over the country on November 21st and December 2nd and 3rd. On October 30th the heaviest pressure within the preceding twenty years took place, viz., one of 29½ lbs. on the square foot. On December 3rd, at Greenwich, at 7h. 30m. A.M., the barometer reading was 28·79 in., and remained at this reading for 42 minutes, then turned to increase, and was 30·22 in. by noon on the 4th; at Castleton the increase was 1·1 in. in thirteen hours; at Cockermouth, between December 3rd, at 9 A.M., and December 4th, at 9 A.M., was 1·34 in. So that the increase from the 3rd to the 4th all over the country was extraordinary. The variations of atmospheric pressures between October 27th and December 5th were very frequent and to large amounts.

"The mean temperature of October was 51·6, being nearly the same as in 1862, when it was 51·8, and less than in 1861, when it was 54·9.

"The mean temperature of November was 45·7, being higher than any November since 1857, which was 45·8.

"The mean temperature of December was 43·2, being 0·4 less than in 1862; higher than in 1861, which was 41.0; and higher than in any other year back to 1857, which was 45·1."

The nights were warm throughout the quarter. The fall of rain was below the average. In the south midland counties polyanthuses, coloured primroses, violets, carnations, wallflowers, coltsfoot, and monthly roses were blooming when the year came to a close. In the north the leaf-buds of some deciduous trees were much expanded on the 24th of December, and primroses and ranunculas flowered the same month. In the midland counties, violets, primroses, daisies, and hepaticas were blooming towards the new year.

Scotland.—In October the weather was nearly normal. There were large fluctuations of cold, wet, and cloud, and the mean temperature (46·8) was a fraction (6·0) less than the average. In November the mean temperature (43·1) was remarkably high, being 3·5 above the average. In December also the mean temperature (40·8) was high, being 2·1 above the average. The rain was greater than usual, and there was much tempestuous weather, the wind being "violent and continuous far beyond the average of former years;

and lightning so abundant and auroras so deficient as to have in these respects more the appearance of summer."

2. FOOD.

Food in England, with the exception of fresh meat, was cheap throughout the year.

3. THE HEALTH OF THE COUNTRY AND GENERAL MORTALITY.

First Quarter.—Notwithstanding the mildness of the weather, the winter quarter was remarkably unhealthy both in England and Scotland. The rate of mortality during the quarter in England was 2·546 per cent., the average being 2·498. In Scotland the death rate was 2·48 per cent., the average of eight previous years being 2·36. "The long-continued wet weather during the previous year," says the Scottish Registrar-General, "the greater humidity of the atmosphere, and the want of the usual bracing dry frosty weather, no doubt, contributed to weaken the constitutions of the people, and render them more liable to attacks of disease, and sink under it when attacked." The increased mortality arose not from the prevalence of any particular epidemic, but from the greater general increase of all complaints, and the greater fatality of all. In all the English registration divisions the deaths were more numerous, as compared with the corresponding quarter of the previous year, with the exception of the north-western division—that division in which the "staple industry on which a million of persons are dependant was overthrown, and when for a twelvemonth four-fifths of that number had subsisted, unless the pittance had been aided by previous earnings or sale of household stock, on less than fourpence a-day per head." On comparing the deaths of the quarter with the mean number of two corresponding quarters in 1861-62, the increase of deaths for the whole of England was nearly 2 per cent.; for London and the north midland counties, 2·5 per cent.; for the south-eastern and south midland counties, and Yorkshire, 7 per cent.; for the east, south-west, and west midland counties, about 12 per cent.; while for the north-west division the increase (0·3 per cent.) hardly appreciable; and for Lancashire, which constitutes the most important part of it, an actual decrease of mortality was found. If the sixteen most important cotton districts of Lancashire are taken, there was an increase of deaths in five, a decrease in the remaining eleven. The increase was greatest in Chorlton (16 per

cent.) and Oldham (21 per cent.). The decrease was great in Wigan, Warrington, Leigh, and Bury, in which places it was 17 and 18 per cent.; greatest in Preston and Burnley, where it was 20 and 24 per cent. It is suggested that these remarkable facts may probably be explained by the considerations, that, (1) while in 1861-62, during the winter quarter, England enjoyed an average amount of health, Lancashire was more unhealthy than usual; that (2) the great emigration from the famine-stricken districts might diminish the mortality; and (3) that the liberal provision spontaneously made for the relief of the unemployed sufficed to ward off physical distress.

Second Quarter.—The mortality in both England and Scotland still exceeded the average. In England the death-rate was 2·313 per cent. per annum., whilst the average was 2·191. The rate of mortality had not been so high in a spring quarter since 1853. In Scotland the death-rate was 2·31 per cent., the average of the corresponding quarters in the eight previous years being 2·12 per cent. The exaggeration of mortality in Scotland is partly assigned to the prevalence of measles and diphtheria. The exaggeration of the mortality in England is attributed to the sudden increase of cold in the midst of the quarter, after summer-like weather. The mortality in the north-western counties (Lancashire and Cheshire) was 9 per cent. above the mean of the corresponding quarter of 1861-62. But the increase of mortality in these counties was less than in Yorkshire, where the excess was 13 per cent. The distress in the cotton districts was largely mitigated, and forty-seven local committees were able to suspend operations before the close of the quarter. The Registrar-General justly remarks that "It must be regarded as a providential interposition in favour of the under-fed and half-clad workmen and their families, that the period embracing December and four succeeding months was, in the words of the meteorological report, distinguished by a temperature higher than in any corresponding period since 1771."

Third Quarter.—The population north and south of the Tweed continued most unhealthy. The mortality of England still ranged above the average The excess of deaths may be stated in round numbers as at least 23,000. The death-rate was 2·166 per cent., whilst the average summer rate is 1·982. The increase of mortality extended to every division of the kingdom, the highest rate being found in Yorkshire (2·446) and Lancashire (2·431). The death-

rate in the two districts was 2·404 per cent. against an average of 2·239. The mortality of the country districts was, as usual, considerably less; but it was also much in excess of the summer average, for it rose to 1·864 against 1·694. "It is obvious," says the Registrar-General, "that cities are not the only haunts of those diseases that are propagated by foul air and bad water, and in homes of penury; nor are young rustics proof against the weather. In a thousand instances the water which town populations command within their houses, the countryman in the village or in the wold can only obtain with uncertainty and toil; his rations are meagre, his walls damp, the refuse-heaps are near his door, 'for as a rule no rubbish is removed, but waits patiently the action of mere natural chemistry;' and shut up many hours of the night with his family, he is deprived even of that which is supposed his inalienable birthright, the pure air, which invests his dwelling and seeks on all sides, but in vain, to be admitted." Scarlatina appeared to be the chief epidemic disease of the quarter.

In Scotland the death-rate was 2·09 per cent.; the average of the summer quarter of the eight previous years 1·81 per cent. Scarlatina, measles, and small-pox, all very prevalent, exaggerated the mortality of the quarter.

Fourth Quarter.—England and Scotland were still unhealthy. The mortality of England was at the rate of 2·236 per cent., the average being 2·294. In Scotland the excess of mortality was great. The death-rate for the quarter was 2·32 per cent., the average of the winter quarter in eight previous years being 204. In England the excess of mortality above the average of the third quarter of 1861 and 1862 extended to every registration division of the kingdom, except west, north, the north-west, and the north and Yorkshire.

In the Registrar-General's report for the quarter a remarkable illustration is given of the influence of sanitary measures upon the health of a population. "In Salisbury, out of a population of 9039 only twenty-four deaths were registered in the quarter. This city was formerly one of the unhealthiest small cities in the kingdom; and in the ten years 1841-50, the mortality was at the rate of 28 in 1000: cholera with diarrhœa was fatal in the epidemic of 1849 to 20 in every 1000 of its inhabitants. Aroused into activity by the approach of the second cholera epidemic, a local board of health was appointed, and proceeded to do its work effectively. The open

drains running through the streets were filled up, a *complete system* of drainage was carried out, and works were established which provide a plentiful supply of water. These municipal reforms, commenced in 1853, were completed in 1854; and the death-toll has been levied with less severity ever since the year 1855. The mortality in the ten years 1851-60 fell to 24 in 1000, and though higher in the first was lower in the last five years of this period. The mortality was at the rate of 27 in 1862, and 15 per 1000 in 1863. The full effects of sanitary improvements only become apparent after some years; and the disturbance of the seeds of disease is sometimes followed by epidemics, as was apparently the case in Salisbury, where the mortality was at the rate of 29 and 27 in 1000 during 1854 and 1855; while in 1856 the mortality fell to 22, and after some fluctuation to 18 in 1860 and 1861. This happy healthy state was disturbed by epidemics of measles and whooping-cough in 1862, when 240 people died from all causes, and the mortality was at the rate of 27 in 1000. In the year 1863 the vigilance of the Board of Health was again rewarded, and the mortality fell to 15 in 1000; thus justifying the sanguine registrar when he says:—

'In my previous report I stated that in my opinion the low rate of mortality was owing to the completeness of the sanitary improvements lately carried into effect, and I attribute the continued favourable state of the public health in this district to the same cause. It is a remarkable fact, that in a population of 9039 the deaths have been only 44 in a half year.'

At the rates still prevailing in other towns the deaths in a half year would have been 113; thus 79 lives were saved. The sick city, healed in his county, is a cheering memorial near the ashes of Lord Herbert, which lie above Salisbury on a tributary of the Avon. But, as experience proves, the health of a city, like the sacred fire on the altar, requires the constant vigilance of its guardians, otherwise its flames expire."

The mortality of the year 1863, in every registrar's division of England, except Wales, was above the average. The Registrar-General attributes this increase of mortality, which, he remarks, is not to be regarded without regret and alarm, as arising chiefly from the prevalence of fever and scarlatina. The prevalence of continued fever, except in the metropolis, to an extent to affect in so serious a manner the mortality returns, is not shown in the returns of the

local registrars. The death-rate for the whole of England was 2·314 per cent.; the average of the previous ten years being 2·211. The mortality of the year 1863 in Scotland is the highest recorded since the Registration Act came into operation. The death-rate for the year was 230 in every 10,000 persons: the death-rate of the eight previous years being only 209. In the town districts the death-rate was 272 in every 10,000 population; in the country, the rate was 183. The excessive increase of mortality is thus accounted for:—"During 1863 there has not been nearly the usual amount of change, variation, or daily and monthly range of temperature. In fact, there has not been a sufficiency of variation of temperature to strengthen the animal constitution against the tendency to debility, caused by the unusual mildness and dampness of the atmosphere. Sudden changes of temperature, as all are aware, are hurtful; but experience of this and former seasons fully demonstrates, that a certain amount of variation of temperature is essential to health. To the circumstance of two years having followed each other when such atmospheric vicissitudes have been smaller than usual, while, at the same time, there has been a greater fall of rain, and more atmospheric humidity, may in great part be attributed the high mortality which has prevailed during every month of the year 1863."

The mortality of London in 1863 was slightly above the average of the preceding twenty-four years. The death-rate was 2·452 per cent., an excess of 0·29 above the year stated. The chief cause of the excess was the zymotic class of the disease, which killed 21,005 persons. The following observations of the Registrar-General on the mortality of London deserve to be noted:—

"If we take the two decenniads, the mortality in the first (1840-9) is at the rate of 25·16, in the second (1850-9) at the rate of 23·63 per 1000 of the population; thus showing a progressive improvement of 1·53 deaths less in 1000 living during the second decenniad. Dividing the twenty years into quinquenniads, the rates of mortality were 24·44, 25·88, 24·17, and 23·08; and in the last four years 23·44.

"The mortality was low (22·49) in 1860, and since then has slowly increased to 24·52. This fact should arouse the vigilance of the Boards of Works, for if they cease to carry out the recommendations of their health officers, the ground gained will be lost, and London will no longer be the healthiest large city in the world.

"It must be borne in mind that the loss of life in London

was formerly much greater in proportion to the population than the loss of life among the English in India; and that its present salubrity is as much the creature of art, imperfect it is true, as the fertility of the soil of Holland, which the sea once covered. If the sanitary dykes be neglected, the three millions of people may again be overwhelmed by cholera, dysentery, and the plague, which are now relegated to the filthy cities of the Mediterranean and of the tropics.

"What London wants is a constant supply of pure water, well-aired dwellings, drainage, and the removal of all the manure to the fields. Grand engineering works sometimes dazzle the understanding, and are accepted as substitutes for substantial efficiency, but they are only of use so far as they discharge these humble but useful functions."

4. THE PREVALENCE OF EPIDEMIC DISEASES.

I proceed now to sum up the facts showing the prevalence of epidemic diseases during the year. The following epidemic affections find the chief place in the reports of the local registrars in accordance with the instructions I have quoted, and they constitute the most prevalent epidemic maladies of the year, viz., scarlatina, small-pox, measles, diphtheria, continued fevers, whooping-cough.

Scarlet Fever.

England.—The prevalence of scarlet fever as an epidemic was reported in England from 61 districts in the first quarter; 75 in the second; 116 in the third; and 121 in the fourth. The distribution of the districts in the different groups of counties was as follows: S.W., 71; N.W., 56; Y., 51; E., 43; W.M., 40; S.M., 27; S.E., 26; N., 25.

The average mortality from scarlatina during the decenniad 1851-60 was 88 in every 100,000 living at all ages; and 419 at less than five years of age. The range of mortality was *at all ages* from 0 in the Scilly Isles to 187 in Bolton, Lancashire; at *less than five years of age*, from 0 in the Scilly Isles to 870 in Liverpool. In 113 of the districts infected epidemically by scarlatina in 1863 the mortality from the disease during 1851-60 was below the average, and in 51 it was above the average.

The Metropolis.—In the metropolis the deaths from scarlet-fever steadily rose from 880 in the first quarter, to 1055 in the second; 1519 in the third; and 1621 in the fourth. The total mortality from the disease in the year was 5075—the largest mortality since the formation of the Registrar-General's department in 1837.

Scotland.—In Scotland the prevalence of scarlet-fever was reported from 21 districts in the first quarter; 14 in the second; 31 in the third; and 48 in the fourth. The distribution of the districts was as follows: S.W., 40; S., 19; E.M., 18; S.E., 13; W.M., 10; N.E., 9; N., 4; N.W., 1.

Scarlatina was the most fatal of the epidemic diseases in the eight towns during the year, causing 1727 deaths, or 6·3 per cent. of the general mortality. Dundee and Glasgow were the two towns where this epidemic chiefly raged; and its fatality was so great in them, that 10·9 per cent. of the deaths in Dundee, and 9 per cent. of the deaths in Glasgow were caused by scarlatina. In all the other towns the mortality from that disease was comparatively low, excepting in Greenock, where the scarlatina deaths amount to 3·3 per cent. of the mortality.

The most prevalent and fatal epidemic disease during 1863, so far as an opinion may be formed from the data at present accessible, was scarlet fever. If the mortality from the disease in London were to be taken as a criterion, the nation suffered in 1863, or is now suffering, from an altogether exceptional outbreak of this deadly malady. The mortality from scarlet-fever in London in 1863 was the greatest which has occurred from the disease, as has been already stated, since the establishment of the present system of registration of deaths. The fatality and prevalence of the malady would appear to increase in the metropolis with the increasing population. The average annual mortality from the disease in the first quinquennium of the period referred to was 1162; in the second, 1868; in the third, 2298; and in the fourth, no less than 3604. The annual average for the whole period was 2260. The periods of unusual activity of the disease, moreover, not only become more frequent but more protracted. The years of excessive mortality were as follows: 1839, 1844, 1848, 1852,53,54, and 1858,59,60,61,62,63. In these years the mortality exceeded the average of the 25 years. The mortality in 1863 was more than double this average.

The returns of deaths from scarlet fever in England generally, include two periods, one of five years, from 1838 to 1842 inclusive; and one of sixteen years, from 1847 to 1862 inclusive. The total number of deaths in the two periods amounted to 310,720; the annual average mortality of the twenty-one years being 14,796. In the first quinquennium of the period (1838-42) the average yearly mortality was 12,582; in the second (1847-51) it was 15,065;

in the third (1852-56), 16,720; and in the fourth (1857-61), 14,089. Or, to institute a more accurate comparison between the different quinquenniums, in the first the average annual mortality per 100,000 population living, at all ages, was 81; in the second, 84; in the third, 129; and in the fourth, 74. The remarkable falling off in the mortality from the fourth quinquennium, was contemporaneous with the naturalisation, so to speak, of diphtheria among the population.

The periods of excessive mortality from scarlet fever in England generally, were 1840, when the death-rate from the disease reached 128 per 100,000 population; 1848, when the death-rate was 118; 1852, when the death-rate was 103; and 1858, when the death-rate was 121. In 1859 the mortality averaged 97 per 100,000 population.

Of the fatality of the outbreak of scarlet fever in 1863, the following illustrations may be quoted :—

	Total Mortality.	Scarlet Fever.
East Maidstone (Kent)	81	26
Newport (Isle of Wight)	—	$\frac{1}{6}$ total mort.
Basingstoke (Hants)	67	23
Brentford	—	$\frac{1}{3}$ „
Oxford	—	$\frac{1}{4}$ „
St. Anslett (Grampound)	56	29
Truro (St. Agnes)	74	33
Falmouth	148	43
Penzance	207	71
Bristol	116	33
Clifton	210	84
Burton-upon-Trent	150	47
Tamworth	170	74
Worcester	309	131
Foleshill (Warwick)	99	23
Coventry (Holy Trinity)	114	31
Bath	82	25

Small-pox.

England.—The prevalence of small-pox was reported in England from 37 districts in the first quarter, 76 in the second, 26 in the third, and 27 in the fourth. The distribution of the districts was as follows:—E., 73; N.W., 23; N., 17; E., 14; S.E., 14; S.W., 9; N.M., 9; S.M., 5; W.M., 2.

The average mortality from small-pox at less than five years of age in the decennium 1851-60 was 103 in every 100,000 living. In 56 of the infected districts in 1863, the mortality from small-pox during 1851-60 was less than the average, and in 35 it was in excess of the average. The average of mortality from small-pox among young children is from 0 in many places to 463 in Plymouth.

The Metropolis.—The mortality from small-pox was 422 in the first quarter; 788 in the second; 512 in the third; 290 in the fourth; and in the aggregate 2012—the largest mortality from the disease since 1838.

Scotland.—In Scotland the prevalence or presence of small-pox was reported from 23 districts in the first quarter; 49 in the second, 36 in the third, and 35 in the fourth. The distribution of the districts was as follows:—S., 37; N.E., 27; E.M., 27; W.M., 26; S.W., 13; S.E., 12; N.W., 1; N., 1.

Small-pox cut off 816 persons in the eight towns during the year, and thus constituted 3 per cent. of the total deaths. That disease was so prevalent and fatal in Greenock, that 11 per cent. of the deaths were caused by small-pox; while the proportion was 4·5 per cent. of the deaths in Dundee, and 3 per cent. in Aberdeen. Most of the persons who fell victims to this loathsome disease had never been vaccinated.

If the mortality from the wide-spread prevalence of small-pox in Great Britain prove to be as great in proportion as the deaths from the disease in London, the mortality returns of 1863 will be a humiliating illustration of the incoherencies of British state-medicine. Of the source of the recurrent and wide-spread outbreaks of small-pox in Great Britain—imperfect vaccination—no doubt can exist. The introduction of a consistent compulsory system of public vaccination for Scotland and Ireland dates only from last year. The state of public vaccination in England has been fully laid bare by the recent investigations carried on by Drs. Seaton, Sanderson, Stevens, and Buchanan, under the direction of the Medical Department of the Privy Council. The summaries of these investigations, published in Mr. Simon's fourth and fifth annual reports, "complete," to use the words of that gentleman, "for more than half England and Wales, an elaborate picture of the working of a system which the legislature has designed to be the national protection against small-pox. And from the picture thus given, together with much other information which is before their lordships, the conclusion cannot but be drawn that the intentions of the legislature in this respect are but very imperfectly fulfilled; that the public defences against small-pox are in great part insufficient and delusive. That this most unsatisfactory conclusion will not be countervailed by evidence which may hereafter come from districts hitherto not reported on; that, on the contrary, such future reports may rather strengthen than weaken the grounds on which

the conclusion rests, will be evident when the fact is considered, that in a large and very important share of the districts not yet reported (namely, in the metropolis and in Yorkshire, which are now in course of being inspected) small-pox is at this moment alarmingly epidemic."

Apropos of the recent outbreak of small-pox in the metropolis, I would quote the following pertinent observation from Dr. Seaton's Report to the Privy Council on the Epidemic of Small-pox in London in 1859, and the means taken for its control:—"It is probable," he says, "that when the measures herein related were completed, the proportion of vaccinated in the districts of London to which this report refers was larger than it had ever before been. But now that the alarm of small-pox has passed away, it is certain that people will relapse into old habits of indifference and neglect, and that without constant vigilance, a re-accumulation of susceptible persons will take place, and go on till it shall attain the amount which will admit of another of those epidemic visitations from which London is never free for more than two years together."*

The foresight of Dr. Seaton has been fully confirmed by subsequent events, and his observations may be probably as truthfully applied to the outbreak of 1863 as of 1859. Now that the brunt of the recent epidemic has apparently passed, government and the people are becoming indifferent to the question of vaccination. The Council proposes in the name of the Society to memorialise the government on the subject; and it trusts that its efforts may prove as useful as when the Society memorialised the government on the same subject in 1853.

Measles.

England.—The prevalence of measles was reported from 32 registration districts in the first quarter; 37 in the second; 11 in the third; and 20 in the fourth. The disease appears to have been most prevalent in the south-western (29 districts) and north-western counties (19).

The average mortality from measles in England during the decennium 1851-60 was 280 in every 100,000 persons living at less than five years of age. In 46 of the localities reported to be infected by measles in 1863 the mortality of the disease during the decennium referred to was less than the average of the kingdom; in two the mortality was equal to the average; and in 24 the mortality was above the average.

The Metropolis.—The mortality from measles in the me-

* Third Report of Medical Officer of Privy Council, p. 59.

tropolis in the first quarter of 1863 was 576 ; in the second, 606 ; in the third, 221 ; and in the fourth, 295. The total mortality from the disease was 1698. In 1862 the mortality was 2281 ; in 1858 it was 2383.

Scotland.—The prevalence of measles was reported from 41 districts in the first quarter ; 48 in the second ; 21 in the third ; and 14 in the fourth. The disease was most prevalent in the first six months of the year in the east midland (29), south-western (26), southern (23), and north-eastern (21) counties.

Measles proved fatal to 998 persons in the eight towns, and thus constituted 3·6 per cent. of the total deaths. Leith and Edinburgh were the only towns where this proportion was exceeded ; for 7·5 per cent. of the deaths in Leith, and 4·3 per cent. of those in Edinburgh were attributed to measles. "The fact of measles of a fatal type often following epidemics of small-pox," says the Scottish Registrar-General, "has been several times noticed in these reports, and Leith and Edinburgh during the past year afford another example of the close relation which exists in this respect between these two diseases. It may be remembered that, in 1862, Leith and Edinburgh were visited by a severe epidemic of small-pox ; but that epidemic proved twice as fatal in Leith as in Edinburgh. These are the two towns in which measles has been most fatal in 1863, and that fatality has been almost in the same proportion as the previous epidemic of small-pox."

Continued Fevers.

England.—The prevalence of continued fever was reported in England in 9 districts in the first quarter ; 1 in the second ; 8 in the third ; and 8 in the fourth. The distribution of these infected districts was as follows :—S.M., 8 ; E., 6 ; N.W., 5 ; S.E., 2 ; S.M., 2 ; N., 2 ; E., 1 ; S.W., 0 ; W.M., 0 ; N.M., 0.

The average mortality from continued fever at all ages during the decennium 1851-60 was 91 in every 100,000 living. In 16 of the infected districts in 1862 the mortality from this cause in 1851-60 was above the average of the kingdom, in 13 it was below the average.

The Metropolis.—The mortality from continued fevers was 785 in the first quarter ; 624 in the second ; 652 in the third ; and 881 in the fourth. In the corresponding quarters of 1862 the mortality had been 991, 1015, 883, and 796. The total mortality from this cause in 1863 was 2892 ; in

1862, 3635; and in 1861, 1754. In my last report I quoted Dr. Murchison's account of the remarkable outbreak of typhus in 1862, to which the largely increased mortality of continued fevers in the metropolis during that year was due. The history of the epidemic in 1863 is best quoted from the account drawn up by Dr. Murchison for last year's Report of the London Fever Hospital.

"As in former years, typhus fever has been the disease upon the prevalence of which the varying number of admissions during 1863 has mainly depended. The small number of admissions into the hospital in the year 1858-61, and the unprecedented numbers in the two last years, have been due to the almost complete absence of typhus in the former case, and to its great prevalence in the latter. In the year 1858, the number of patients admitted with typhus was 15, and during seven months, only one case was observed; but in the years 1862 and 1863, the typhus admissions numbered 1827 and 1319. The epidemic of typhus which commenced in December 1861, and raged throughout 1862, still continues. In the summer of 1863, it subsided to such an extent as to lead one to hope that it was about to pass away, but late in the autumn it again rapidly increased. The typhus admissions which in January were 123, fell in June to 43, but rose in November to 244. In the last mentioned month also, a considerable number of typhus patients were refused admission for want of room. The epidemic is still confined to the poorest class of the population. A very large proportion of the patients suffering from typhus, admitted during last year, had been out of employment and in a very destitute state for a considerable time prior to their attack. Many of them had only come to London, from different parts of the country, in search of work, shortly before their illness. There was no evidence, however, that they had imported the fever into London. Of the 1319 cases, only 35 were natives of Ireland; all but four of the 35 had resided in London more than three months before their illness, and none were taken ill before their arrival. At the commencement of the epidemic there was a great preponderance of male over female typhus patients. Thus, up to the end of June 1862, there were 669 males to 461 females; but since then the proportion has been reversed, and during the year 1863, 581 males and 738 females were admitted. The localities of the metropolis, whence the typhus patients were derived, were the poorest and most densely crowded. Thus, of the 56 districts into which London is divided, Bermond-

sey furnishes 160 cases; Lambeth, 159; St. George's-in-the-East, 140; Rotherhithe, 94; the poorer parts of Marylebone, 78; City of London, 60; St. Pancras, 54; and Greenwich, 51. On the other hand, Hampstead supplied only one case, and St. George's, Hanover Square, none, although examples of other forms of fever were derived from both of these parishes. The great increase of typhus towards the end of the year was most marked in the southern and eastern divisions of the metropolis. Thus, of 605 typhus patients, admitted during the last three months of the year, 440 were brought from these two divisions, and no fewer than 275 from the three parishes of Lambeth, Bermondsey, and Rotherhithe.

"No instance of relapsing fever has been observed at the hospital during the present epidemic. Indeed, no patient suffering from this fever has been admitted since 1854

"Enteric or pythogenic fever has constituted no part of the present epidemic."

Scotland.—In Scotland the prevalence of continued fever was reported from 16 districts in the first quarter; 13 in the second; 11 in the third; and 24 in the fourth. The distribution of these districts was as follows:—N.E., 16; S.W., 12; S., 11; S.E., 8; E.M., 7; N., 7; W.M., 2; N.M., 1.

"Typhus in its varied forms of gastric, typhoid, typhous, and infantile fever, was the second most fatal of the epidemics, cutting off 1398 persons in the eight towns during the year, thus constituting the high proportion of 5·1 per cent. of the general mortality. This proportion was exceeded in Leith, Aberdeen, Perth, and Greenock—the relative proportions being 9·7 per cent. of the deaths in Leith; 7·3 per cent. in Aberdeen; 6·1 per cent. in Perth; and 5·2 per cent. in Greenock. In Glasgow the proportion was 5·1 per cent. of the deaths; while in Edinburgh, Dundee, and Paisley only 4·2 per cent. of the deaths were attributed to that cause. Nowhere, strictly speaking, can the disease be said to have appeared as an epidemic."

Diphtheria.

England.—The prevalence of diphtheria was reported from 7 districts in England in the first quarter; 7 in the second; 10 in the third; and 23 in the fourth. The distribution of these districts was as follows:—E., 13; S.M., 7; Y., 7; S.E., 4; N.W., 3; W.M., 2; M. and Wales, 1.

The average mortality from diphtheria at all ages during the decennium 1851-61 was 11 in every 100,000 living,

The range of mortality was from 0 in the Scilly Isles to 310 in Howden, Yorkshire. In 15 of the infected districts in 1863 the mortality from the disease in the 10 years referred to was above the average; in 21 it was below; and in 1 it was equal to the average.

The Metropolis.—The mortality from diphtheria (724) was somewhat less than in 1862 (734), but greater than in 1861 (697). The deaths from the disease in the first quarter, were 178; second quarter, 175; third quarter, 192; and fourth quarter, 179.

Scotland.—In Scotland the prevalence of diphtheria was reported from 28 districts in the first quarter; 18 in the second; 26 in the third; and 32 in the fourth. The distribution of the districts was as follows:—E.M., 45; N.E., 20; W.M., 11; S.W., 8; S.E., 6; N., 6; S., 5; and N.W., 3.

Diphtheria still continues to increase. In 1861 the deaths from diphtheria in the eight towns numbered 151, in 1862 they had increased to 285; but during 1863 they amounted to 478, and thus constituted 1·7 per cent. of the general mortality. This disease was proportionally most fatal in Leith, next in Aberdeen, and then in Edinburgh; 2·7 per cent. of all the deaths in Leith, 2·4 per cent. in Aberdeen, and 2·3 per cent. in Edinburgh were attributed to diphtheria.

In both countries, diphtheria prevailed alone or in conjunction with other epidemic diseases, as follows:—

	Districts.
Diphtheria alone	57
„ with scarlatina	34
„ with small-pox	9
„ with measles	7
„ with fever	5
„ with sore-throat	3
„ with croup	3
„ with catarrh	3
„ with whooping-cough	1
„ with measles and croup	1

Sore Throat.

Scotland.—The prevalence of sore throat was recorded in 9 Scottish districts in the first quarter; 2 in the second; 1 in the third; and 4 in the fourth. The distribution of the districts was as follows:—E.M., 6; N.E., 5; N., 2; N.W., 2; S.E., 1.

Whooping Cough.

The prevalence of whooping cough was reported from 7 districts in *England* in the first quarter (S.W., 5; E.C., 1;

S.E., 1); and 1 (E.) in the third quarter. In the *Metropolis* whooping cough was more fatal in 1863 (2229) than in 1862 (2150), but less fatal than in 1861 (3497). In *Scotland* the disease was reported as prevalent in 8 districts in the third quarter (E.M., 5; S.W., 2; W.M., 1); and 7 in the fourth quarter (S.W., 3; E.M., 3; W.M., 1).

"Whooping cough," says the Scottish Registrar-General, "is generally the most fatal disease of childhood; but in 1863 only 976 deaths, or 3·6 per cent. of the mortality, were attributed to that cause. In Greenock, however, whooping cough was very fatal, the deaths therefrom constituting 7.6 per cent. of the mortality; while in Glasgow, the next town in which it was most fatal, 4·5 per cent. of the deaths were caused by that disease."

Diarrhœa.

Diarrhœa was reported as prevalent in *England* in 27 districts in the third quarter (N.W., 10; E., 9; N., 2; W.M., 2; S.E., 1; S.M., 1; E., 1; S.W., 1). In the *Metropolis* the mortality from diarrhœa was greater in 1863 (2448) than in 1862 (1735), but less than in 1861 (2625). In *Scotland* the disease was reported as prevalent in one district of the northern counties in the first quarter; and one district of the N.W. counties in the second quarter.

Croup.

Four local outbreaks of croup are recorded in the Scottish returns—1 in the N. counties (second quarter); 1 in the E.M.; 1 in the W.M.; and 1 in the S.W. counties in the fourth quarter. Croup cut off 640 children in the eight chief towns, and thus constituted 2·3 per cent. of the deaths. In the *Metropolis* the mortality from croup in 1862 was greater than it had been from that disease since the commencement of the present system of registration in 1837. In 1863 there was a slight diminution of the mortality from the disease, the deaths numbering 927.