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With Dr. Trench's Compl.

REPORT

OF THE

HEALTH OF LIVERPOOL,

DURING THE YEAR 1863,

BY W. S. TRENCH, M.D.,

MEDICAL OFFICER OF HEALTH FOR THE BOROUGH.

LIVERPOOL:

GEORGE M'CORQUODALE AND CO., PRINTERS, CASTLE STREET.

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REPORT.

I wish, before commencing this, the first Annual Report on the Health of the Borough of Liverpool since the publication of the national census of 1861, to advert to some facts of great local interest connected with that document.

There are many ways of estimating the population of districts between the periodic numbering of the people; but as all calculations based on the natural increase of births are inapplicable to large trading seaport towns, it is usual to assume that the annual rate of increase will be approximately the same as that ruling in the intervals between the last and previous census. Then by a formula such as is subjoined *, the problem is easily worked out, and the product generally found sufficiently true and correct for all practical purposes. The calculations in the following report are based on this principle of approximate geometrical ratio; but I hope that I shall be able, through the assistance of the Committee, to obtain during this year a list of the houses comprised in the separate registration districts, by means of which I shall be able to detect and correct any local or general variations in the rate of increase.

My predecessor, Dr. Duncan, an experienced authority on all such questions, computed that in 1859 the population of the borough amounted to 454,000, in 1860 to 463,000, and in 1861 to 472,000, while the census for the same year 1861 gives only 443,930, or 28,070 less than the calculation. This is a variance too important to be passed over unnoticed, since it is large enough to falsify all former and to render doubtful all future conclusions on our rates of mortality. Although there exist in my office no memoranda by which the mode of computation adopted by Dr. Duncan can be known and analysed, yet we have in his report for 1860 the assurance that in his opinion the calculated amount of population was less than it would be by assuming the principle, recognised by all statisticians, of approximate similarity in the rates of increase. This opinion I have found to be correct. The population of the borough in 1841 was 286,487, and in 1851 375,955, and the annual rate of increase, therefore, 1.0275. If

* Let P_x = population at the date x .

P_{x+n} = population at the date $x+n$.

Then $\frac{P_{x+n} - P_x}{P_x} = r^n$ = rate of increase in the interval of n years.

the same geometrical rate had continued in the decenniad between 1851 and 1861, as every statist assumes it will approximately do, then the population of the borough in 1861 would have been 493,116, or 49,178 greater than that given by the census.

It would thus appear that the decrease in the rate of increase of the inhabitants of the borough became suddenly and unprecedentedly great—a fact very unexpected by those best acquainted with the subject, and one which, judging from the numerous new streets erected in the out-townships, from the crowded condition of the houses, and from the difficulty, notwithstanding, of meeting the demand for accommodation, was *primâ facie*, most improbable—so improbable, indeed, as to excite the scepticism entertained by some as to the correctness of the Liverpool returns of population.

The number of inhabited houses mentioned in the census is 65,781, giving an average for each house of 6·7 inhabitants. The population of the borough in 1851 was 375,955, and in 1861, 443,938—the annual increase, therefore, 1·0168. The per-centage rate of increase during the decenniad was 18, and the annual geometrical rate therefore 1·68 or 1·7 per cent. It is the addition of or allowing for this 1·7 which is meant by the term “corrected average” in the weekly reports of the Medical Officer of Health.

The following short table shows the same facts with reference to the several districts of the Borough:—

Population in of	1851.		1861.		Rate of Increase.
Liverpool Parish	258,236	...	269,742	...	1·0043
Out-Townships	117,719	...	174,196	...	1·0399
Scotland Ward.....	61,777	...	81,228	...	1·0277
Rodney and Abercromby Wards	41,997	...	47,410	...	1·0122
Lime-st. and St. Anne's Wards.	40,977	...	41,241	...	1·0006
Everton	25,883	...	54,848	...	1·0780
Kirkdale	9,893	...	16,135	...	1·0501
West Derby.....	22,002	...	36,527	...	1·0520
Toxteth.....	59,941	...	66,686	...	1·0107

In the other Wards the rate is one of decrease.

Vauxhall Ward	27,942	...	24,816	...	1·0119
Paul's and Exchange Wards ...	31,763	...	29,078	...	1·0089
Castle-street and St. Peter's ...	19,825	...	16,827	...	1·0165
Pitt-street and Great George...	33,957	...	29,142	...	1·0154

The first lesson taught by a census is in the readjustment of the calculated rates of mortality in former years, and we accordingly find that the rate between 1851 and 1861 was for the Borough, 29, for the Parish 33, and for the out-townships, 25 in the thousand.

1863.

In the last year, 1863, sickness prevailed so generally over England, that the Annual Report of the Registrar-General will probably contain few towns of the Kingdom where the mortality has not been in excess. Unfortunately, no exception from the rule can be claimed for Liverpool, since the deaths registered in the borough amounted to 15,266—a number greater than in any year since 1849, and 549 above the corrected average of the last decenniad. Yet this effect was not due to the scourge of any especial pestilence, for there had been no visitation of cholera nor any preeminent intensity of an indigenous zymotic to which it could be ascribed. When the sudden addition of an epidemic swells the catalogue of suffering, there is always a distinct period of increase which indicates the proximate causation; but here, looking at the table which illustrates the weekly registry, it is impossible not to be struck with the scarcely varying similarity of the record during the whole 52 weeks, wherein the stream of death, beginning large and full, flowed uninterruptedly in a broad, constant, almost even, current from January to December. It was fed by every class of disease, and owed its dimensions to no single supply.

There were, indeed, two short intervals of time—the first distinguished by an accession of infantile diarrhœa, the second by pulmonary complaints—when the regular progression received a temporary momentum; but otherwise, so persistent were the numerical proportions that they might easily have been assumed as the normal rates of death to population if not corrected by the records of previous years.

In 1859 and 1860, the deaths in the borough were successively 11,824 and 11,236, or 27.5 and 25.7 per thousand; and although the prosperity of trade, the abundance of employment, and the comparatively moderate price of provisions and clothing, make these rather exceptional years in the annals of the town, yet their registry may be justly taken as the standard death-rate when undisturbed by extraneous influences, physical and moral. But in 1861, 1862, and 1863, the number of deaths successively increased to 12,933, 13,525, and 15,266, or 29.1, 29.9, 33.0 per thousand; yet the same vigilance in sanitary arrangements had been maintained, the same regulations zealously enforced, and the same care taken to prevent the originating or spreading of contagious diseases, as in 1860, while the seasons had not presented variability or severity sufficient to render them peculiarly inimical to health. Whence, then are we to derive the *rationale* of this increase, so manifestly due to constant causes? What were the agents which produced and the influences which extended this high rate of mortality?

The first cause was probably the type or constitution of epidemic diseases. In the natural history of disease, there is no circumstance more definitely certain, than that phases of a malady in its severity and consequent fatality change from time to time, and that the congeries of symptoms classified by nosologists under the same nomenclature are of varying intensity. This is

sometimes traceable to meteorological phenomena, sometimes to a low vitality of the people occasioned by want, overcrowding, mental anxiety, and other causes of individual or general depression. Sometimes the physician is obliged to hide his ignorance, and escape the impossibility of an explanation, by referring the fact to a mysterious final cause—the specific character, type, or constitution of the epidemic diseases. However expressed, it is a reality; for fever, scarlatina, measles, diarrhoea, erysipelas, and indeed all the zymotics, may be either trivial illnesses or destructive plagues. There is no doubt, also, that reasons which in the case of separate species are accepted as final, may be applied to the whole genus of disease. Hence it is scientifically correct to say that, apart from apparent physical causation, the tendency to death of all diseases was in 1861, 1862, and 1863, much beyond the average. The curious circumstance of periodically recurrent cycles of healthy and sickly years, however otherwise explicable, seems somehow connected with this variableness in the proclivity of disease to death; and when Dr. Duncan, with a very natural feeling of delight, stated in his report for 1860, that the mortality of Liverpool had for two consecutive years been the lowest on record, we might almost have prognosticated the advent of change.

The second cause of the increased rate of death was probably want, occasioned by commercial distress.

There are social economists who ignore this and other similar exciting causes of disease, and who assume that comparative statistical tables of the rates of mortality between the inhabitants of town and country, or of different cities, or of the same districts in different years, are simply the indices of the observance or neglect of sanitary measures. The error of this idea is its exclusiveness. By bringing all facts to a procrustean bed of theory, they not only do injustice to practical hygiene, but, by taking no cognisance of those moral, political, and physical causes, which, though directly or mediately affecting the well-being and therefore the health of the people, are beyond the control of the physician or legislator, they render their conclusions too restricted and inexact for truthful induction. It would require no deep research to prove the influence on the death rate of Liverpool, of the genialness or inclemency of seasons, of the direction or duration of winds, of the dulness or prosperity of trade, of the political agitation of nations, of the migration of peoples, and the prevalence of distant wars; for all these separate agencies have within the last decade of years modified the result favourably or otherwise. Indeed, Liverpool, the emporium of foreign trade and British industry, the port of intercommunication between the Old and New World, contains a population whose material prosperity and sanitary well-being, are immediately affected by the social and political mutations of other States.

The sickliness of 1861 began so contemporaneously with the American civil war and cotton famine as at once to suggest the coincidence of cause and effect.

It is unnecessary to dwell on the yet unfinished history of this epoch of commercial embarrassment. Suffice it that though the calamity did not burst

on Liverpool with all the fearful violence which struck down the total industry of some other towns, it spread over large portions of our population a chronic pauperism, insufficient to attract to its aid the princely liberality of the nation, but severe enough to deteriorate the well-being of the community. In those years the paupers supplied with relief by the Vestry were—

Year.	Total for Year.	Average per Week.
1859	702,149	13,502
1860	695,747	13,379
1861	729,544	14,029
1862	909,085	17,482
1863	895,851	17,228

If we except the returns for 1863, we have here an instructive parallelism between want and death.

In 1860, when death snatched only 25 in every 1000 of the whole population, the number of paupers requiring relief from the Vestry was 213,338 less than in 1862, when 30 of every 1000 of all the citizens sank into the grave. Even in 1863, though at first sight exceptional, the like coincidence is manifest, for during its last six months the claimants for relief were 426,708, or 10,898 more than during the corresponding period of 1862. This half-year's difference is equivalent to much more than its numerical equation, for it occurred when trade had begun somewhat to revive, and labourers to find work. It therefore showed that though the demand for labour had removed from the list of paupers the strong, the active, and the skilled, there yet remained a greater number of persons than for the same period in 1862 who required relief from the parish.

But besides the paupers, who as a matter of right seek eleemosynary aid, there was in 1861, 1862, and 1863, a vast amount of want in the families of those who are above that class. Strangers, also, and unskilled labourers from a distance flocked to the town in the vain search of employment, increasing thereby the list of the indigent. Benevolence did not altogether neglect, though it went dilatorily on its mission of charity, to this crowd of wretchedness; for in 1861 and 1862 there was a tension of sympathy for the manufacturer, and thousands of pounds were sent to other districts, while want, misery, and sickness abounded in our own streets.

The third and the most urgent cause of the increased rate of mortality is to be sought for in local and physical defects in the sanitary condition of the borough. Of the registered deaths, 9819 occurred in the parish and 5447 in the out-townships, and the rate of mortality was therefore for the borough 33, for the parish 36, and for the out-townships 29 per 1,000.

Here, then, we are able, by comparing the relative sanitary position of the population of separate districts which are not only contiguous but under the same commercial influence, and the same municipal regulations, to discover the operation of injurious agencies. They are such as constantly and anxiously occupy the attention of the Health Committee, viz., the number of poor, especially

of Irish and other destitute immigrants promiscuously collected in certain squalid localities; filth and penury pent up in airless dwellings; frequent change of residence, scattering and receiving thereby the seeds of infectious diseases; the crowding of many families in single houses; the restricted superficial area of streets and blocks of buildings; the preponderance of narrow, ill-ventilated courts and alleys; the construction and position of middens and cesspools. Many of these causes are probably the inseparable and concomitant evils of a highly prosperous commercial community; many owe their origin to the ignorance of former times, when sanitary principles were disregarded and are now so hedged round by the rights of private property that new laws will be required for their removal; many are maintained by the carelessness of tenants and the interested selfishness of owners.

The establishment of a staff of house-to-house inspectors and the weekly report of the Inspector of Nuisances show the energy exercised by the Health Committee in remedying defects within their jurisdiction; while the intention of the Council to apply to Parliament for power to arrange for the opening and ventilation of the worst courts and alleys of the borough indicates a new and long-desired era of sanitary progress. Since the passing of the Sanitary Act, the improvements effected by the Council in sewerage, lighting, and cleansing the streets, in supplying water and establishing baths, closing cellars and removing masses of crowded dilapidated houses, and in promoting all the chief requisites for public health and comfort have been so many and so judicious that surprise may well be expressed that hitherto they have allowed five years to pass without availing themselves of their power to frame bye-laws for regulating the superficial area of land around houses, blocks of buildings, and streets. Already may be seen in the increased rate of mortality of the out-townships the effects of this delay, which threatens to entail upon our descendants an evil scarcely less fatal to health than our ill-ventilated courts and alleys.

The following tables show the rate of mortality in the borough and its several sub-districts during 1863:—

THE BOROUGH.

In the March quarter the deaths were	3640
„ June quarter „ „	3481
„ September quarter „ „	3812
„ December quarter „ „	4333

THE PARISH.

In the March quarter the deaths were	2401
„ June quarter „ „	2248
„ September quarter „ „	2407
„ December quarter „ „	2763

THE OUT-TOWNSHIPS.

In the March quarter the deaths were	1239
„ June quarter „ „	1233
„ September quarter „ „	1405
„ December quarter „ „	1570

The death rates of the borough and sub-districts were—borough, 33.0 per 1000; parish, 36.0; out-townships, 29.0; Scotland ward, 29.6; Vauxhall ward, 34.7; Paul's and Exchange wards, 33.9; Castle-street and St. Peter's wards, 20.6; Pitt-street and Great George wards, 29.8; Rodney-street and Abercromby wards, 20.1; Lime-street and St. Anne's wards, 31.8; Everton and Kirkdale, 26.0; West Derby, 24.0; Toxteth, 32.0.

In calculating the district rates of mortality, the deaths in the workhouses and hospitals have not been included.

In fixing amounts of population, 2,400, being the average number of residents in the workhouse during the year of the census, have been removed from Rodney-street and Abercromby wards.

The first group of diseases which occasioned these rates of death, and which, therefore, demand especial notice, are zymotics—so called from their tendency to spread like a fermenting taint among the people. This peculiar faculty of extension from centres of origin, makes their history at all times very interesting, not only because they are thus apt to become epidemic, but also because the general laws of their propagation being known, they can be materially modified by sanitary regulations. During the last decenniad they caused 25.9 per cent. of all the deaths of the borough, and they are generally supposed to account for 21 to 24 per cent. of the mortality of the country, but the borough registry of last year places their influence as high as 29.3. In analysing the causes of this serious excess we must draw a distinction between those diseases of the class which are directly controlled by atmospheric purity and those which originate and spread their contagion independently of external and physical conditions. Among the first may be ranked typhus fever and diarrhœa; among the second are small pox, measles, hooping cough, and scarlatina. These, though clinging closely to confined neighbourhoods, are less dependent than typhus and diarrhœa on the foul and poisonous emanations of noisome impurities for the pabulum of their existence. Their prevalence is mostly due to overcrowding, to the influx of strangers to infected localities, and to the incautious communications with the sick. The migratory habits of our poor, and the vast stream of people flocking to the banks of the Mersey on pleasure, business, or in transit to other lands, by providing a succession of fresh victims, maintain the constant activity of the contagion. Hence, Liverpool is never free from the presence of these zymotics; for the hygienic laws necessary for the removal of their causation would too narrowly restrict the freedom of the subject. The simple principle of contagion will not, however,

always explain their rapid propagation; since the facilities of intercourse and the frequency of contact with the sick, are not greater when they are increasing or at their height, than when stationary or declining; nor can we explain why the contagious principle grows occasionally more virulent or is conducted with greater facility by the atmosphere, nor why the susceptibility of the population increases, nor why the tendency of the organization to fall into this peculiar pathological state augments.

Typhus fever has a very different natural history. Not only are the streets, courts, alleys, and houses in which it first breaks out, and in which it becomes most prevalent and fatal, invariably the seats of removable impurities, but its progress and extension can be immediately checked by good food, cleanliness, adequate space, and ventilation. There occurred in the borough 1165 deaths from typhus (under which generic term are included the three kinds of continued fever), and 139 deaths from infantile remittent, which most physicians regard as modified typhus. If we take Dr. Murchison's rate of one death in ten, then 11,650 residents in the Borough suffered from typhus during 1863, and, besides those who died, 10,000 were prostrated for weeks and months by its attacks. But in order fully to realise the extent of the misery thereby occasioned, we must remember that typhus may be termed the disease of adolescence and middle age, so great is the proportion of its victims among adults in the prime of life. Therefore, the misery and indigence occasioned by the sickness and death of parents and heads of families must be added to the reckoning, and the sad total carried to the credit of a disease which science and experience prove to be always fostered and disseminated by removable nuisances. The most fruitful nurseries of typhus in Liverpool are unventilated courts. This is at once shown by an analysis of the deaths. 697 occurred in private houses, 6 in hospitals, and 462 in the workhouses. Of the 697, 201, or 5·7 in every 20, belonged to courts; an immense proportion, if the area of courts to the whole town is considered. But of the 462 dying in the workhouses we may assume that, being all paupers, more than three-fourths, or 15 in every 20, came also from courts and alleys.

The other most common sources of typhus are bad drains, noisome middens, and overcrowded close apartments. The following list of streets, arranged consecutively according to their position in the death rate from fever, will to any one acquainted with the town, at once show the influence of such causes:—Norfolk-street, 10 deaths from typhus; Mann-street, 10; Hornby-street, 8; Upper Frederick-street, 8; Burlington-street, 7; Blenheim-street, 7; Gore-street, 7; Ashley-street, 6; Eldon-street, 6; Woodstock-street, 6; Blundell-street, 6; Jenkinson-street, 6; Addison-street, 5; Charter-street, 5; Gerard-street, 5; Greenland-street, 5; Watkinson-street, 5; Simpson-street, 5; Wolfe-street, 5.

The worst districts and streets of the town are not accurately portrayed in the death registry. In them fever is perennial, but recorded deaths are rare; for the residents being too poor to maintain themselves or their families during sickness, are speedily removed to the parish workhouse. Brick-street may be

instanced as an illustration of this state of things. In the registry it accounts for only three deaths from fever, though a succession of victims succumbing to the fatal miasm were periodically carried to the hospital. From its noisome courts, and especially from No. 6 Court, an unventilated and close nook, to which neither storms nor frost can impart the freshness of pure air, the poisonous leaven of typhus was disseminated to neighbouring localities. From Brick-street the contagion was traced to Norfolk-street, Blundell-street, Jordan-street, Simpson-street, Jamaica-street, and Greenland-street, where it caused the deaths of many respectable inhabitants. There are many other centres of contagion which are not prominent on the registry, such as No. 6 Court Thomas-street, Duckinfield-street, Wright-street, &c. It is a melancholy circumstance that the dire penalties which nature exacts for the breach of economic laws are not restricted to the offenders, but fall with equal weight on the innocent—not sparing even those who, in their social and selfish exclusiveness, think they have no interest in improving the filthy miserable domiciles of the poor. No man, however surrounded by all the elegances and comforts which wealth confers, can live free from danger while within reach of the visits of his domestics there are cellars, streets, courts, and alleys from which typhus is never absent. The knowledge of such facts stimulates and encourages the Committee to persevere in the correction and removal of nuisances so prejudicial to health; while it must awaken the public to the necessity of measures which at first sight may seem arbitrary and despotic. There are, no doubt, great difficulties and much of private and personal hardship inseparably connected with sanitary improvements, but on the per-contra sheet are written sickness, death, bereavements, and injury to contiguous property. If we examine even very recent topographical maps of Liverpool, we see how large houses have been transformed into crowded rookeries; how gardens and open spaces once the air conduits of the town have been covered with courts and houses, close, confined, unventilated, and poisoned by the exhalations of mid-dens. These places are the hotbeds of contagious disease, and the protection of the public requires that their nuisances be corrected or removed.

It will be seen by the following table, which illustrates the quarterly mortality of the principal zymotics, that while typhus, scarlatina, and hooping cough were always in excess, there were periods when small-pox, measles, and diarrhœa could be justly termed sporadic:—

Diseases.	March Quarter.	June Quarter.	September Quarter.	December Quarter.
Small pox	6	28	31	35
Measles	28	22	57	215
Scarlatina	213	151	200	176
Hooping cough	199	194	215	284
Diarrhœa	38	57	429	80
Typhus	272	275	248	370
Zymotics	905	884	1353	1343

The track of small-pox in the death registry is very suggestive. During the first quarter it is seen chiefly in the wards of the parish, where the marks it leaves are few, not exceeding six, but with change of district came intensity of force, and when the contagion in the June quarter reached the out-townships, there began the record of an epidemic, numbering during the year 100 victims.

In the second or June quarter, the deaths in the out-townships were 16, in the third or July quarter 17, and in the December quarter 24, amounting during these periods to 57 against 47 in the parish. This loathsome and terrible disease—which scars and mutilates those whom it spares to life—is, humanly speaking, so perfectly arrested by Jenner's immortal discovery, that there is no hesitation in attributing its epidemic prevalence to almost criminal neglect, or, in asserting what the registry has proved, the ignorance and carelessness of the residents in the out-townships in not availing themselves of the advantages of vaccination for the safety of their children. The efforts made by the parochial authorities to induce the people to do their duty in this respect have been constant and praiseworthy.

The increase of measles and hooping cough during the December quarter, may have arisen from the coldness and variableness of the weather, which at that time also augmented the death rate of pulmonary complaints.

The epidemic of infantile diarrhoea, which, as is not unusual, prevailed for a few weeks during July, August, and September, when the temperature was high and the fall of rain considerable, must not, however, be altogether attributed to climaterial causes, for the fact that the worst habitats of the disease were in the order of succession Hornby-street, Addison-street, Mann-street, Henderson-street, Eaton-street, Chisenhale-street, Eldon-street, Albert-street, is conclusive proof that much of the mischief was due to poisonous effluvia and contaminated air. Of the other zymotics, diphtheria accounts for 84 deaths, croup for 166, erysipelas for 55, purpura and scurvy for 8, cholera and cholera infantum for 42, syphilis for 76, puerperal fever for 31, and rheumatic fever for 13.

The next class is designated in our nosology "Diseases of variable seat." It includes scirrhus, fungus, and every kind of cancer, as well as many other painful and malignant diseases, the laws of whose causation are unknown, their cure most hopeless, their ravages as great and cruel in the homes of the rich and the pure air of the country as in the close and squalid purlieus of a city's wretchedness. It is only necessary to record that, including dropsy, which is properly only a symptom of internal disease, this class occasioned 411 deaths.

The third or tubercular class of diseases, including scrofula, phthisis, tabes mesenterica, and hydrocephalus, occasioned 2170 deaths, or 14.2 per cent. of the whole mortality of the borough. This proportion is within the average, which during the last decenniad amounted to 16 per cent. But, paradoxical as it may appear, this lessened rate, in itself a subject of congratulation, denotes a sickly rather than a healthy year; for experience and observation have shown that the fatal action of zymotics and tubercular diseases is so far

reciprocal that the diminution of the one invariably indicates the excess of the other. This curious fact is illustrated by the following table :—

Years.	Deaths from all causes.	Zymotics.	Per 100.	Tubercular.	Per 100.
1853	11,274	2538	22.5	2047	18.1
1854	14,034	4796	34.1	2202	15.6
1855	12,505	3219	25.7	2072	16.5
1856	11,574	3040	26.2	1881	16.2
1857	12,951	3524	27.2	1971	15.2
1858	13,937	4265	30.6	2070	14.8
1859	11,824	2755	23.3	2008	16.9
1860	11,236	1911	17.0	2014	17.9
1861	12,933	2928	22.6	2003	15.4
1862	13,525	3696	27.3	1889	13.9

Phthisis, the most important of this group of diseases, accounted for 1587 deaths, or 10.3 per cent. of the mortality from all causes. It is perhaps impossible to estimate the exact force of any single power in the generation of tubercles, for there are always numerous associated actions, such as the nature of the subject, the varying alterations of seasons, weather, localities, social and moral conditions, and numerous concurring and intercurrent qualities, tending to the same result. But when the scrofulous diathesis is widely prevalent in a population, we are justified in regarding it as due, not to partial and subordinate, but to general agencies, deteriorating the health of the community. Among these the most important is climate, which, in its attributes of cold and damp, certainly exercises a very special power in predisposing to this constitutional cachexia. Hence consumption is endemic in Great Britain. But compared with other places in the island, Liverpool is very salubriously placed, being, with the exception of a line of streets running from the Custom-house to Scotland-road, built on sandstone rock, at a moderate elevation, within reach of the breezes of the sea. The other general causes of these diseases are the sedentary and injurious habits of the people, combined with physical errors in the position and construction of their houses. The experiments of physiologists have proved how certainly tubercles may be produced among the lower animals by confinement and vitiated air, while impartial physicians must admit that the same agents acting on the human frame are not only prolific sources of the complaint, but also rational explanations for effects too often falsely attributed to hereditary taint. The curious alternacy between zymotics and scrofulous diseases seems also to depend on the similarity of their origin. The aerial poison, which, chronically and dilutedly imbibed, kills by the slow agency of phthisis, becomes, when concentrated, the exciter and pabulum of typhus and other contagions. The other classes of diseases are registered under the separate organs of the body, and require no special comments on their causation. The following table shows their prevalence during the four quarters of the year :—

Diseases.	March Quarter.	June Quarter.	September Quarter.	December Quarter.
Of brain and nervous system	359	390	344	376
„ Organs of circulation.....	102	124	92	118
„ Respiratory organs	726	581	380	798
„ Digestive organs	156	147	159	121
„ Kidneys, &c.	32	28	25	44
„ Uterus, &c.	23	14	22	38
„ Locomotion	11	17	10	15
„ Integumentary system.....	26	17	21	24

There is, in addition to these, one large group which, not admitting of any distinct pathological classification, is arranged in our nosology under the rather indefinite terms of “atrophy” and “debility.” These account for 1092 deaths, of which no less than 967 were of children under five years of age. Their analysis belongs therefore, very especially, to the most interesting and important of all the questions connected with the sanitary condition of the town, viz., the cause of the great excess in the rate of infantile mortality. There were, during the year, 7601 deaths of children under five years of age, being only 64 less than one-half of the whole mortality of the borough; of these deaths 6346 were under two years of age, and 4496 under one year. The young and tender lives of children are so sensitive to all injurious influences that it would be mere recapitulation of what was written under typhus and diarrhoea to state the physical causes of their high rate of mortality. The deaths of infants may also, under certain restrictions, be regarded as equally just tests of the moral characteristics of the people as of the sanitary condition of their homes; for the fine thread of infantine existence hangs dependant on parental care and watchfulness, and is easily severed by the ignorance, carelessness, neglect, cruelty, and vice of others.

In the published schedule of the inquests of the coroner's court there is a short note intimating that 70 of the 127 deaths of children from suffocation occurred between the Saturdays and Mondays of the year, or, in other words, on days when mothers had too probably partaken of the Saturday night's orgies of their husbands. This is a horrible but still only a single example of the effects of one vice—that of drunkenness. How portentous would be the catalogue if a record were written of all infantile deaths produced or hastened by negligence, ignorance, cupidity, cruelty, and crime.

Of the total deaths from all causes in the borough, 7707 were of males, and 7559 of females. The ages at death were—below 5 years, 7601; from 5 to 15 years, 717; from 15 to 60 years, 5292; above 60 years, 1644; unknown, 12. Of 20 deaths above 90 years of age, 17 were females. One man and two women were upwards of 100 years old. The oldest was a woman, age 112.

The number of sudden and violent deaths, given as such in the returns of the Registrars, was 824. As one of the tables accompanying this report conveys every information on a subject especially interesting to the jurist and moralist,

but of little moment in a sanitary point of view, I need only remark that suicide was more common in the June than in any other quarter of the year, and that hanging was the chief form of self-destruction. Murders and manslaughters were more numerous in the September and December quarters.

The following meteorological table shews the mean monthly reading of the barometer and thermometer and the monthly fall of rain in 1863, and contrasts these with the average means of the previous 17 years :—

MONTH.	Mean Monthly Reading of Barometer for 1863.	Mean Monthly Temperature for 1863.	Average MeanMonthly Temperature for 17 years.	Average Monthly Fall of Rain for 17 years.	Fall of Rain for each Month in 1863.
January.....	29.682	42.4	40.0	1.71	3.34
February	30.224	45.1	41.6	1.29	0.32
March	29.843	46.3	43.6	1.58	0.60
April	29.952	49.6	47.9	1.69	1.32
May	30.027	52.7	54.2	1.73	1.53
June	29.849	58.6	60.0	2.32	3.70
July	30.136	61.4	62.7	2.77	1.53
August	29.849	61.6	62.2	3.12	3.18
September.....	29.769	59.4	58.0	2.49	5.01
October	29.713	51.9	52.2	2.98	5.06
November	29.942	47.9	44.9	2.16	2.97
December	30.034	46.0	42.3	1.91	1.65

LODGING HOUSES.

There are two tables accompanying this report which illustrate the working of lodging-house inspections. They show the number of inspections to have been 45,071, of which 12,486 were during the night; having for their result 372 notices to register, 420 notices to limewash registered houses, 164 informations for violation of the bylaws, and the addition of 111 houses to the register. The number of houses removed from the register during the year was 281, leaving 1,118 registered houses on the 31st December.

Before closing this report it will not be out of place to show by one district of the borough the effects of sanitary improvements. St. George's district, including Castle-street and Saint Peter's wards, accounted for 29.1 deaths in the 1,000 of the population of 1853—a year of average healthiness. In 1863 (a sickly year) it does not answer more than 20.6 in the 1000. The causes of this are simple and apparent—namely, the removal of a large mass of pest-breeding streets and houses, and the leaving wide spaces for the free circulation of the air. If the same improvements, with similar results, had occurred in the neighbouring districts of Vauxhall, the saving of lives in one year would have been 347; and if the whole borough had been rendered by sanitary measures as healthy as one of its central districts, the saving of life in one year would have been 5857.

LODGING-HOUSES.

REGISTRATIONS AND INSPECTIONS.

Number of Per- sons belonging to the Family and Registered as living in the House.	Number of Per- sons belonging to the Family and found on Nightly Visits.	Difference be- tween the Num- ber Registered and Number found on Nightly Visits.	Number of Lod- gers allowed by the Medical Officer of Health		Number of Lod- gers found above the Num- ber allowed in the 46 houses, on Nightly Visits.	Number of Houses found overcrowded on Nightly Visits.	Below the Number Registered.	Number of Un- registered Houses Visited during the Night						
			Day.	Night.										
12,486	47,199	4,185	109,192	55,427	52,765	46	252	772						
Number on the Register, 31st Dec., 1862.	Registered during the Year under the Com- mon Lodging House Act.	Number on the Register, 31st Dec., 1863.	Inspections of Registered Houses.		Inspections of Unregistered Houses.		Total Inspections.	Number of Fever Cases in Registered Houses during the Year.	Number of Deaths from Fever.	Total Number of Deaths in Registered Houses during the Year, Fever Cases included.	Houses Sketched and Measured.			
			Day.	Night.	Day.	Night.								
1,007	392	281	1118	31,699	11,714	43,413	883	772	1,655	45,068	24	3	106	210

NOTICES AND INFORMATION.

INFORMATION FOR										RESULTS OF INFORMATION.				
Notices to Register.	Notices to Lime-Wash.	Notice to apply for Tickets.	Mixing Sexes.	Not Regis- tering.	Not Exhibiting Tickets.	Over- crowding.	Not Washing Floors.	Not Sweeping Floors.	Not Lime- washing.	Refusing Ad- mittance.	TOTAL.	With- drawn.	Fined.	Acquitted.
372	420	410	12	28	10	46	23	30	14	1	164	18	102	44

AMOUNT OF FINES.

5 AT		37 AT		35 AT		16 AT		7 AT		1 AT		TOTAL FINED.		Withdrawn and Acquitted.
1/-	1/-	2/6	2/6	5/-	4/6	10/-	4/6	20/-	4/6	40/-	4/6	£48 18 0	102	
1/-	1/-	2/6	2/6	5/-	4/6	10/-	4/6	20/-	4/6	40/-	4/6	£48 18 0	102	62

BOROUGH OF LIVERPOOL.—WEEKLY REGISTRY OF DEATHS DURING 1851.

DEATHS REGISTERED IN LIVERPOOL DURING THE YEAR ENDING 31st DECEMBER, 1863

[illegible]

	1	2	3	
101	101	101	101	101
102	102	102	102	102
103	103	103	103	103
104	104	104	104	104
105	105	105	105	105
106	106	106	106	106
107	107	107	107	107
108	108	108	108	108
109	109	109	109	109
110	110	110	110	110
111	111	111	111	111
112	112	112	112	112
113	113	113	113	113
114	114	114	114	114
115	115	115	115	115
116	116	116	116	116
117	117	117	117	117
118	118	118	118	118
119	119	119	119	119
120	120	120	120	120
121	121	121	121	121
122	122	122	122	122
123	123	123	123	123
124	124	124	124	124
125	125	125	125	125
126	126	126	126	126
127	127	127	127	127
128	128	128	128	128
129	129	129	129	129
130	130	130	130	130
131	131	131	131	131
132	132	132	132	132