

cation of the much greater number of persons who fall sick, and who, although they escape, are subjected to the suffering and loss occasioned by attacks of disease. Thus it was found on the original inquiry in the metropolis, that the deaths from fever amounted to 1 in 10 of the number attacked. If this proportion held equally throughout the country, then a quarter of a million of persons will have been subjected to loss and suffering from an attack of fever during the year; and in so far as the proportions of attacks to deaths is diminished, so it appears from the reports is the intensity and suffering from the disease generally increased. It appears that the extremes of mortality at the Small-pox Hospital, in London, amongst those attacked, have been 15 per cent. and 42 per cent. But if, according to other statements, the average mortality be taken at 1 in 5, or 20 per cent., the number of persons attacked in England and Wales during the year of the return, must amount to upwards of 16,000 persons killed, and more than 80,000 persons subjected to the sufferings of disease, including, in the case of the labouring classes, the loss of labour and long-continued debility; and in respect to all classes, often permanent disfigurement, and occasionally the loss of sight.

In a subsequent part of this report, evidence will be adduced to show in what proportion these causes of death fall upon the poorer classes as compared with the other classes of society inhabiting the same towns or districts, and in what proportions the deaths fall amongst persons of the same class inhabiting districts differently situated.

The first extracts present the subjects of the inquiry in their general condition under the operation of several causes, yet almost all will be found to point to one particular, namely, atmospheric impurity, occasioned by means within the control of legislation, as the main cause of the ravages of epidemic, endemic, and contagious diseases among the community, and as aggravating most other diseases. The subsequent extracts from the sanitary reports from different places will show that the impurity and its evil consequences are greater or less in different places, according as there is more or less sufficient drainage of houses, streets, roads, and land, combined with more or less sufficient means of cleansing and removing solid refuse and impurities, by available supplies of water for the purpose. Then will follow the description of the effects of overcrowding the places of work and dwellings, including the effects of the defective ventilation of dwelling-houses, and of places of work where there are fumes or dust produced. To these will be added the information collected as to the good or evil moral habits promoted by the nature of the residence. These will form so many successive sections of the report, and will be followed by information in respect to the means available for the prevention of the evils described, and an exposition of the present state of the law for the protection of the public health, and of modifications apparently requisite to secure the desired results.

# I. GENERAL CONDITION OF THE RESIDENCES OF THE LABOURING CLASSES WHERE DISEASE IS FOUND TO BE THE MOST PREVALENT.

The following extracts will serve to show, in the language chiefly of eye-witnesses, the varied forms in which disease attendant on removable circumstances appears from one end of the island to the other amidst the population of rural villages, and of the smaller towns, as well as amidst the population of the commercial cities and the most thronged of the manufacturing districts—in which last pestilence is frequently supposed to have its chief and almost exclusive residence.

Commencing with the reports on the sanitary condition of the population in Cornwall and Devon, *Mr. Gilbert*, when acting as Assistant Commissioner for those counties, reports, that he found the open drains and sewers the most prominent cause of malaria. He gives the following as an instance of the common condition of the dwellings of the labouring classes in Devon, where it will be observed that the registered deaths from the four classes of disease amounted in one year to 5893 cases.

“In Tiverton there is a large district, from which I find numerous applications were made for relief to the Board of Guardians, in consequence of illness from fever. The expense in procuring the necessary attention and care, and the diet and comforts recommended by the medical officer, were in each case very high, and particularly attracted my attention.

“I requested the medical officer to accompany me through the district, and with him, and afterwards by myself, I visited the district, and examined the cottages and families living there. The land is nearly on a level with the water, the ground is marshy, and the sewers all open. Before reaching the district, I was assailed by a most disagreeable smell; and it was clear to the sense that the air was full of most injurious malaria. The inhabitants, easily distinguishable from the inhabitants of the other parts of the town, had all a sickly, miserable appearance. The open drains in some cases ran immediately before the doors of the houses, and some of the houses were surrounded by wide open drains, full of all the animal and vegetable refuse not only of the houses in that part, but of those in other parts of Tiverton. In many of the houses, persons were confined with fever and different diseases, and all I talked to either were ill or had been so: and the whole community presented a melancholy spectacle of disease and misery.

“Attempts have been made on various occasions by the local authorities to correct this state of things by compelling the occupants of the houses to remove nuisances, and to have the drains covered; but they find that in the present state of the law their powers are not sufficient, and the evil continues and is likely so to do, unless the legislature affords some redress in the nature of sanitary powers. Independently of this nuisance, Tiverton would be considered a fine healthy town, situate as it is on the slope of a hill, with a swift river running at its foot.

"It is not these unfortunate creatures only who choose this centre of disease for their living-place who are affected; but the whole town is more or less deteriorated by its vicinity to this pestilential mass, where the generation of those elements of disease and death is constantly going on.

"Another cause of disease is to be found in the state of the cottages. Many are built on the ground without flooring, or against a damp hill. Some have neither windows nor doors sufficient to keep out the weather, or to let in the rays of the sun, or supply the means of ventilation; and in others the roof is so constructed or so worn as not to be weather tight. The thatch roof frequently is saturated with wet, rotten, and in a state of decay, giving out malaria, as other decaying vegetable matter."

The report of *Dr. Barham*, on the sanitary condition of the town of Truro, gives instances of the condition of the town population in that part of the country. He states—

"The perfect immunity from deaths by *febrile* and *acute* diseases, enjoyed by Lemon-street during the long period of three years and a half, is a strong testimony to the value of the breadth of its roadway, the openness of its site, and the judicious construction of the houses; for it has to contend with a great deficiency of sewerage. Fairmantle and Daniell-streets are modern, and are occupied by small traders, and by decent artisans and labourers; the *former* lies rather low, the *latter* is on a considerable elevation; both are fairly drained, and are healthy. Charles, Calenick, and Kenwyn-streets present some of the worst specimens of defective arrangement, rendered worse still by the recklessness of the very poor, which can be met with in Truro. The amount of *pauper sickness* is considerable, the deaths not few. The two latter streets are, in the greater part of their length, but little raised above high-water mark. Passing into *St. Mary's* parish, the proportion of sickness and even of deaths in Castle-street and Castle-hill is, to their extent and population, as great, perhaps, as that of any part of Truro; yet their situation is elevated and favourable. There is, however, no mystery in the causation. Ill-constructed houses, many of them old, with decomposing refuse close upon their doors and windows, open drains bringing the oozings of pigsties and other filth to stagnate at the foot of a wall, between which and the entrances to a row of small dwellings there is only a very narrow passage; such are a few of the sources of disease which the breeze of the hill cannot always dissipate. Similar causes have produced like effects in the courts adjacent to Pyder-street, to the High Cross, and to *St. Clement's*-streets, and in Bodmin-street and Good-wives'-lane, the situations being all more or less confined. The benefits, on the other hand, derived from open rows, and cottages of a better construction are evidenced in Boscawen and Paul's-row, and *St. Clements'*-terrace, which are well ventilated, and consequently suffer less from the scanty provision of drains and other conveniences.

"A detailed account of the public sewers is given in the Appendix, and is believed to be nearly, if not quite, complete. Many of these are of recent date, and owe their existence to the alarm excited when the cholera was near at hand. Some of them are made to discharge themselves into the rivers; and such of these as are swept by a stream of water are unobjectionable in themselves. Several others stop short of this desirable

termination, and, after collecting filth from various localities, deposit a portion in catchpits here and there, and finally open on the surface, frequently in some street or lane, where a neglected deposit of a mixed animal and vegetable nature is allowed to become a probable source of annoyance or mischief. Much of this incompleteness may be removed (as regards the main lines of sewerage) at no great expense; and it is said to be the intention of the commissioners of improvement to remedy the deficiency, when they are free from the debt with which they are now encumbered. Many of the smaller sewers are, however, much too narrow to be effective, and some of them are no better than covered drains. But the greatest evils in this department are unquestionably those which spring from the ignorance, cupidity, or negligence of landlords. It is useless to have a good sewer carried through the centre of a street, if the houses at the sides, and still more those situated in courts and lanes adjoining, have no communicating drains; and it is worse than useless to furnish these backlets with the mere semblance of drains—gutters forming pits here and there—then as they approach the street, perhaps slightly covered so as to produce obstruction more frequently than protection, a concentrated solution of all sorts of decomposing refuse being allowed to soak through and thoroughly impregnate the walls and ground adjoining. One or more of these mischievous conditions is to be found in connexion with a large proportion of the older houses in Truro, excepting the better class; and in many of the courts and backlets all these evils are in full operation. I have repeatedly noticed in the country that the occurrence of fever has been connected with *near proximity to even a small amount of decomposing organic matter*; and it is certain that all measures for effecting improvement in the sewerage of streets, the supply of water, and ventilation, may be rendered nearly inoperative for the obviating of the causes of disease, if a little nidus of morbid effluvia be permitted to remain in almost every corner of the confined court; where the poor man opens his narrow habitation in the hope of refreshing it with the breeze of summer, but gets instead a mixture of gases from reeking dunghills, or, what is worse, because more insidious, from a soil which has become impregnated with organic matters imbibed long before; and now, though, perhaps, to all appearance dry and clean, emitting the poisonous vapour in its most pernicious state. Nothing short of the placing in proper hands a peremptory authority for the removal of what is hurtful, and the supply of what is defective, making the exercise of that authority a duty, can remedy the existing evils.

"The houses occupied by the lower orders do not often exceed two stories in height, and it is rare to find families occupying less than two rooms. The more recent additions to the town—I speak of residences of the humbler class—have mainly consisted of rows of moderate cottages, having, the majority of them, gardens in front, and usually containing four rooms, commonly occupied by a single family. Some instances have, however, occurred of the building of a very inferior class of dwellings, which will be hereafter pointed out.

"No interments now take place in the town, the present burying-ground being at the distance of a third of a mile to the north of the church. The slaughter-houses are all, or nearly all, situated in populous parts, and occasionally constitute a decided nuisance. No manufactories exist which can be looked upon as prejudicial from any effluvia to which

they give rise. The gas-works and smelting-houses are so placed that no mischievous effects can fairly be attributed to them."

The state of the dwellings of many of the agricultural labourers in Dorset, where the deaths from the four classes of disease bear a similar proportion to those in Devon, is described in the return of *Mr. John Fox*, the medical officer of the Cerne union, who, remarking upon some cases of disease among the poor whom he had attended, says,—

"These cases (of diarrhoea and common fever) occurred in a house (formerly a poor-house) occupied by nearly 50 persons on the ground-floor; the rooms are neither boarded nor paved, and generally damp; some of them are occupied by two families. The up-stairs rooms are small and low, and separated from each other by boards only. Eleven persons slept in one room. The house stands in a valley between two hills, very little above the level of the river, which occasionally overflows its banks, and within a few yards of it. There is generally an accumulation of filth of every description in a gutter running about two feet from its front, and a large cesspool within a few feet behind. The winter stock of potatoes was kept in some of the day-rooms, and generally put away in a wet state. The premises had not been white-limed during three years; in addition to this state of things, the poor were badly fed, badly clothed, and many of them habitually dirty, and consequently typhus, synochus, or diarrhoea, constantly prevailed. No house-rent was paid by the occupants. Many, under more favourable circumstances were clean and tidy, and if their wages were sufficient to enable them to rent a decent cottage, I have no doubt they would soon regain their lost spirit of cleanliness. In this same parish I have often seen the springs bursting through the mud floor of some of the cottages, and little channels cut from the centre under the doorways to carry off the water, whilst the door has been removed from its hinges for the children to put their feet on whilst employed in making buttons. Is it surprising that fever and scrofula in all its forms prevail under such circumstances?

"It is somewhat singular that seven cases of typhus occurred in one village heretofore famed for the health and general cleanliness of its inhabitants and cottages. The first five cases occurred in one family, in a detached house on high and dry ground, and free from accumulations of vegetable or animal matter. The cottage was originally built for a school-room, and consists of one room only, about 18 feet by 10, and 9 high. About one-third part was partitioned off by boards reaching to within three feet of the roof, and in this small space were three beds, in which six persons slept; had there been two bed-rooms attached to this one day-room, these cases of typhus would not have occurred. The fatal case of typhus occurred in a very small village, containing about sixty inhabitants, and from its locality it appears favourable to the production of typhus, synochus, and acute rheumatism. It stands between two hills, with a river running through it, and is occasionally flooded. It has extensive water meadows both above and below, and a farm-yard in the centre, where there is always a large quantity of vegetable matter undergoing decomposition. Most of the cases of synochus occurred under circumstances favourable to its production. Most of the cottages being of the worst description, some mere mud hovels, and situated in low and

damp places with cesspools or accumulations of filth close to the doors. The mud floors of many are much below the level of the road, and in wet seasons are little better than so much clay. The following shocking case occurred in my practice. In a family consisting of six persons, two had fever; the mud floor of their cottage was at least one foot below the lane; it consisted of *one* small room only, in the centre of which stood a foot-ladder reaching to the edge of a platform which extended over nearly one-half of the room, and upon which were placed two beds, with space between them for one person only to stand, whilst the outside of each touched the thatch. The head of one of these beds stood within six inches of the edge of the platform, and in this bed one of my unfortunate patients, a boy about 11 years old, was sleeping with his mother, and in a fit of delirium jumped over the head of his bed and fell to the ground below, a height of about seven feet. The injury to the head and spine was so serious that he lived a few hours only after the accident. In a cottage fit for the residence of a human being this could not have occurred. In many of the cottages, also, where synochus prevailed, the beds stood on the ground-floor, which was damp three parts of the year; scarcely one had a fireplace in the bed-room, and one had a single small pane of glass stuck in the mud wall as its only window, with a large heap of wet and dirty potatoes in one corner. Persons living in such cottages are generally very poor, very dirty, and usually in rags, living almost wholly on bread and potatoes, scarcely ever tasting animal food, and consequently highly susceptible of disease and very unable to contend with it. I am quite sure if such persons were placed in good, comfortable, clean cottages, the improvement in themselves and children would soon be visible, and the exceptions would only be found in a few of the poorest and most wretched, who perhaps had been born in a mud hovel, and had lived in one the first 30 years of their lives.

"In my district I do not think there is *one* cottage to be found consisting of a day-room, three bed-rooms, scullery, pantry, and convenient receptacles for refuse and for fuel in the occupation of a labourer, but there are many consisting of a day-room and two bed-rooms, constructed with a due regard to ventilation and warmth, pantry, and fuel house, with a small garden and pig-sty adjoining, and the labourers occupying such cottages, generally speaking, are far superior to others less advantageously situated. Their persons and cottages are always neater and cleaner, they are less disposed to frequent the beer-houses or to engage in poaching, whilst their children are generally sent daily to some school, in many instances chiefly supported by the clergyman of the parish. As a corroboration of my opinion, I need only state that I am frequently employed by the labourers in the good cottages to attend their wives during their confinement, and generally receive my guinea before I leave the house, whilst the labourer less favourably situated invariably applies to his parish for medical relief under such circumstances. I think there cannot be a doubt if the whole of the wretched hovels were converted into good cottages, with a strict attention to warmth, ventilation, and drainage, and a receptacle for filth of every kind placed at a proper distance, it would not only improve the health of the poor by removing a most prolific source of disease, and thereby most sensibly diminish the rates, but I am convinced it would also tend most materially to raise the moral

character of the poor man, and render him less susceptible to the allurements of the idle and wicked."

The tenor of much information respecting the condition of many of the labouring classes in Somerset, where the deaths from the four classes of disease were still higher than in the two other counties, and amounted during the one year to 5417, is exhibited in the sanitary report of *Mr. James Gane*, the medical officer of the Axbridge union, who states that,—

"The situation of this district where the diseases herein mentioned prevail, is a perfect flat called the South Marsh, in the main road between Bristol and Bridgewater. There are numerous dykes or ditches for the purpose of drainage. The cottages of the poor are mostly of a bad description, frequently mud wall, and often situated close to the dykes, where the water for the most part is in a state of stagnation. Oftentimes not more than one room for the whole family; sometimes two; one above the other; with the really poor, the latter is seldom to be met with, (unless it should happen now and then in a parish where a poor-house was built a short time before the formation of the Union). A pigsty where the inmates are capable of keeping a pig is frequently attached to the dwelling, and in the heat of summer produces a stench quite intolerable; the want of space however prevents it being otherwise. The regular poor-house (those mentioned above being detached cottages) in most of the parishes in this district are of a much worse description, several large families existing under the same roof, occupying only one room each family, and having but one entrance door to the dwelling; here filth and poverty go hand-in-hand without any restriction and under no control. The accumulation of filth being attributable to the want of proper receptacles for refuse, and the indolent and filthy disposition of the inhabitants, in no instance have such places been provided. The floors are seldom or never scrubbed; and the parish authorities pay so little attention to these houses, that the walls never get white-limed from one end of the year to the other. The windows are kept air-tight by the stuffing of some old garments, and every article for use is kept in the same room. The necessary is close to the building, where all have access, and producing a most intolerable nuisance. In a locality naturally engendering malaria, the diseases with which the poor are for the most part afflicted are, fevers such as are stated in this report and which sometimes run into a low typhoid state. The neighbourhood in general is considered in as good a state of drainage as it will admit of. The occurrence of disease among the poor population is for the most part at spring and autumn, at those times agues and fevers prevail. Small-pox and scarlet fever are met with at all seasons of the year, but prevail as epidemics, the former in spring and summer, and the latter about autumn or the beginning of winter. I attribute the prevalence of diseases of an epidemic character, which exists so much more among the poor than among the rich, to be, from the want of better accommodation as residence, (their dwelling instead of being built of solid materials are complete shells of mud on a spot of waste land the most swampy in the parish, this is to be met with almost everywhere in rural districts,) to the want of better clothing, being better fed, more attention paid to the

cleanliness of their dwellings, and less congregated together. The health of persons even where a large family is, and where superior cottage accommodation is afforded to them, is much better generally than others less advantageously situated. The influence over their habits will also be very beneficial, they will be less likely to run to a beer-house with their last penny, the comforts of a home after the toils of the day keeps them by their own fire-side; they become better contented, less liable to disease, make better husbands, better fathers, better neighbours, and with each other better friends. There is a subject which I wish particularly to press on the attention of the Commissioners; the presence throughout the country, and to be found in every parish, of low lodging-houses, where persons of the lowest grade of society, beggars, thieves, and such like, take up a temporary abode in passing from one part of the kingdom to another, bringing with them the seeds of infectious diseases and oftentimes the actual disease itself into a neighbourhood previously in a comparative state of health. I have observed, where persons are living in a locality habitually affected with malaria, that when becoming convalescent from any other disease, are often attacked with ague, more particularly among the poorer classes.

"There is a class of persons called the 'second poor,' who for the most part are constantly employed throughout the year as farmers' labourers, and who are in much better circumstances than those to whom I have above alluded; they have much better cottage accommodation, their houses being provided with one, sometimes two day-rooms, two bed-rooms, a pantry, and other conveniences for fuel and for refuse, and whose general health and condition is much better than those less advantageously situated. Therefore detached cottages for the poor, with a moderate sized day-room, two or three bed-rooms, a pantry, receptacles for refuse and for fuel, with casement windows or some such contrivance for ventilation, will be a blessing to them, and very available sanitary regulations. I know of no better method than is to be seen in all cottages for the economical management of fuel, both in cooking and maintaining a proper temperature of the rooms."

The following extract from the report of *Mr. Aaron Little*, the medical officer of the Chippenham union, affords a specimen of the frequent condition of rural villages which have apparently the most advantageous sites:—

"The parish of Colerne, which, upon a cursory view, any person (unacquainted with its peculiarities) would pronounce to be the most healthy village in England, is in fact the most unhealthy. From its commanding position (being situated upon a high hill) it has an appearance of health and cheerfulness which delight the eye of the traveller, who commands a view of it from the Great Western road, but this impression is immediately removed on entering at any point of the town. The filth, the dilapidated buildings, the squalid appearance of the majority of the lower orders, have a sickening effect upon the stranger who first visits this place. During three years' attendance on the poor of this district, I have never known the small-pox, scarlatina, or the typhus fever to be absent. The situation is damp, and the buildings unhealthy, and the inhabitants themselves inclined to be of dirty habits. There is also a great want of drainage."



*Mr. William Blower*, the surgeon of the Bedford union, to whose evidence on the influence of moral causes on the health of the population, we shall again have occasion to refer, states:—

"Throughout the whole of this district, there is a great want of 'superior cottage accommodation.' Most of the residences of the labourers are thickly inhabited, and many of them are damp, low, cold, smoky, and comfortless. These circumstances occasion the inmates to be sickly in the winter season, but I have not observed them to generate typhus, the prevailing form of disease being principally catarrhal; such as colds, coughs, inflammations of the eyes, dysentery, rheumatism, &c. However, when any contagious or epidemic malaria occurs, the cases are generally more numerous."

*Mr. Weale* reports instances of the condition of large proportions of the agricultural population in the counties of Bedford, Northampton, and Warwick. The medical officer of the Woburn union states, in respect to Toddington, that—

"In this town fever prevailed during the last year, and, from the state of the dwellings of the persons I called on, this could not be wondered at. Very few of the cottages were furnished with privies that could be used, and contiguous to almost every door a dung heap was raised on which every species of filth was accumulated, either for the purpose of being used in the garden allotments of the cottagers, or to be disposed of for manure. Scarcely any cottage was provided with a pantry, and I found the provisions generally kept in the bed-rooms. In several instances I found whole families, comprising adult and infant children with their parents, sleeping in one room."

The medical officer of the Ampthill union states:—

"Typhus fever has existed for the last three or four months in the parish of Flitwick, and although the number of deaths has not been considerable as compared with the progress of the disease, new cases have occurred as those under treatment became convalescent, and several are still suffering under this malady. The cottages in which it first appeared (and to which it has been almost exclusively confined), are of the most wretched description: a stagnant pond is in the immediate vicinity, and none of the tenements have drains; rubbish is thrown within a few yards of the dwellings, and there is no doubt but in damp foggy weather, and also during the heat of summer, the exhalations arising from those heaps of filth must generate disease, and the obnoxious effluvia tends to spread contagion where it already exists. It appears that most of the cottages alluded to were erected for election purposes, and have since been allowed to decay; the roofs are repaired with turf dug in the neighbourhood, and the walls repaired with prepared clay, without the addition of lime-washing. Contagious disease has not been remarkable within the Union in any other spot than the one alluded to."

*Messrs. Smith and Moore*, the medical officers of the Bishop Stortford union, state,—

"We have always found the smallest and most slightly-built houses the seats of the lowest forms of disease; and although, during the last

year, no epidemic or infectious disease here prevailed, it is but just to state that, generally speaking, the cottages of labourers in this district are small, badly protected from both extremes of weather, badly drained, and low in the ground."

*Mr. J. S. Nott*, the medical officer of the Witham union, states,—

"As medical officer of my district, I am glad to have an opportunity of recording my opinion of many of the causes of fever that uniformly prevails in the autumn and spring in this neighbourhood. I must first state that the situation of the town is exceedingly low, with two small rivers passing through it, and numerous open sewers intersecting the town and its environs, the effluvia of which is frequently exceedingly offensive, and at all times prejudicial to the general health, and calculated to create, by its malaria, the various kinds of fevers, (typhus and remittent). Part of the town is subject to floods; added to which, the cottages are small and crowded together. A great number of the inhabitants accumulate filth and manure for the purpose of sale. There are also many open slaughter-houses, where the refuse and filth is allowed to accumulate for weeks together without removal; and innumerable pigs are kept and fattened on the back of the premises of a great number of the inhabitants; and altogether it would be difficult to find any town of its size where so little regard is paid to cleanliness and ventilation; but where we do find the exception, roomy and well-ventilated cottages, (and they are but few,) the cases of fever are more manageable, and recover sooner."

The state of Windsor affords an example that the highest neighbourhoods in power and wealth do not at present possess securities for the prevention of nuisances dangerous to the public health. *Mr. Parker*, in his report on the condition of his district, states—

"With regard to the drainage of the towns in the counties of Buckingham, Oxford, and Berks, it may be observed that there is no town in which great improvements might not be effected. In Reading there are commissioners appointed under a local Act to make provision for cleansing the town and removing nuisances; but their duties do not appear to be performed with due regard to the importance of the trust, for the Board of Guardians of the Reading union, by resolutions entered in their minutes, frequently point out nuisances, and remind the commissioners of the filthy condition of many of the courts and back streets. But extensive as the improvements in the state of the drainage of almost every town in these counties might be, there is no town amongst them in which there is so wide a field for improvement as Windsor, which, from the contiguity of the palace, the wealth of the inhabitants, and the situation, might have been expected to be superior in this respect to any other provincial town. Such, however, is not the case; for of all the towns visited by me, Windsor is the worst beyond all comparison. From the gas-works at the end of George-street a double line of open, deep, black, and stagnant ditches extends to Clewer-lane. From these ditches an intolerable stench is perpetually rising, and produces fever of a severe character. I visited a cottage in Clewer-lane in which typhus fever had existed for some time, and learnt from a woman who had recently lost

a child the complaint was attributable to the state of these ditches. Mr. Bailey, the relieving officer, informs me that cases of typhus fever are frequent in the neighbourhood; and observes that there are now seven or eight persons attacked by typhus in Charles-street and South-place. He considers the neighbourhood of Garden-court in almost the same condition. 'There is a drain,' he says, 'running from the barracks into the Thames across the Long Walk. That drain is almost as offensive as the black ditches extending to Clewer-lane. The openings to the sewers in Windsor are exceedingly offensive in hot weather. The town is not well supplied with water, and the drainage is very defective.' The ditches of which I have spoken are sometimes emptied by carts; and on the last occasion their contents were purchased for the sum of 15*l.* by the occupier of land in the parish of Clewer, whose meadows suffered from the extraordinary strength of the manure, which was used without previous preparation."

*Mr. Harding*, medical officer of the Epping union, states,—

"The state of some of the dwellings of the poor is most deplorable as it regards their health, and also in a moral point of view. As it relates to the former, many of their cottages are neither wind nor water tight. It has often fallen to my lot to be called on to attend a labour where the wet has been running down the walls, and light to be distinguished through the roof, and this in the winter season, with no fire-place in the room. As it relates to the latter, in my opinion a great want of accommodation for bed-rooms often occurs, so that you may frequently find the father, mother, and children all sleeping in the same apartment, and in some instances the children having attained the age of 16 or 17 years, and of both sexes; and if a death occurs in the house, let the person die of the most contagious disease, they must either sleep in the same room, or take their repose in the room they live in, which most frequently is a stone or brick floor, which must be detrimental to health."

*Mr. J. D. Browne*, medical officer of the West Ham union states that,—

"The cases of typhus (21 cases in the parish of Walthamstow) have occurred periodically in certain localities, arising partly from want of personal cleanliness, and also from being situated near ditches into which putrefactive matter was deposited, such as the privies and pigsties emptying themselves. The medical officer called the attention of the Board of Guardians, vicar, and parochial officers to the subject; and though it was unanimously admitted that the evil was great, and an anxious desire was expressed in vestry to remove the existing evil, yet the case fell to the ground, there being no funds to meet the exigency. The medical officer feels persuaded that a power should be invested in the Board of Guardians or parochial officers to meet such cases."

*Mr. Thomas H. Smith*, the medical officer of the Bromley union, states,—

"My attention was first directed to the sources of malaria in this district and neighbourhood when cholera became epidemic. I then partially inspected the dwellings of the poor, and have recently completed the survey. It is almost incredible that so many sources of malaria should exist in a rural district. A total absence of all provision for effectual

drainage around cottages is the most prominent source of malaria; throughout the whole district there is scarcely an attempt at it. The refuse, vegetable and animal matters, are also thrown by the cottagers in heaps near their dwellings to decompose; are sometimes not removed, except at very long intervals; and are always permitted to remain sufficiently long to accumulate in some quantity. Pigsties are generally near the dwellings, and are always surrounded by decomposing matters. These constitute some of the many sources of malaria, and peculiarly deserve attention as being easily remedied, and yet, as it were, cherished. The effects of malaria are strikingly exemplified in parts of this district. There are localities from which fever is seldom long absent; and I find spots where the spasmodic cholera located itself are also the chosen resorts of continued fever."

Passing the metropolis and the adjacent districts, I proceed to the evidence as to the condition of the dwellings of the poorest classes in the midland counties.

The report from Mr. Hodgson and the physicians of the town of Birmingham will be considered a valuable public document, as exhibiting the effect of drainage produced by a peculiarly fortunate situation. The houses, of which I requested drawings, are on the whole built upon an improved plan. This town, it will be seen, is distinguished apparently by an immunity from fever, and the general health of the population is high, although the occupations are such as are elsewhere deemed prejudicial to health.

The following extract from *Mr. Hodgkins*, the medical officer of Bilston, in the Wolverhampton Union, describes the condition of the population of a colliery district:—

"Bilston, like Wolverhampton, has not been visited by fever to any extent since the cholera in 1832. The awful destruction which then occurred swept off many of those subjects who might afterwards have been victims of fever; in fact Bilston was, after the cessation of cholera, nearly free from disease of any kind for several months. Influenza has occasionally visited us and swept off a few. Small-pox a few years ago was prevalent, but not very fatal, although many children from negligence on the part of the parents are not vaccinated. Scarlet fever has appeared sometimes, but only in straggling cases. The occupations of the poorer classes are chiefly colliers, labourers, &c., great members of the latter being Irish. The houses of those applying for parochial medical relief which I have visited have been dirty and crowded, the habits of the working classes here being generally improvident and dirty, many parties forming heaps of filth close to their doors; and here, as in Wolverhampton, I am afraid it would require the interference of the law to effect any permanent good. Some years ago a large culvert was carried down the principal street which has made a great improvement in that part, but much yet remains undrained. I would mention a place in High-street especially, near to a court, crowded with Irish, there is a pool of green stagnant water or mud continually; another place called the Berry, behind the King's Arms Inn, and a third in a court in Temple-street, where there appears to be a drain which has been choked up, the stench from which is intolerable."

*Dr. Edward Knight* gives the following description of the sanitary condition of the town of Stafford :—

"During the year ending September 29th, 1839, there have been in the fever-wards connected with the Stafford County General Infirmary 76 cases of fever, of which number 10 have died, and the remaining 66 were discharged cured. The far greater part of these cases commenced in the town of Stafford, some being brought to the infirmary in a dying state, which gives a greater rate of mortality. Although the fever-wards are well arranged, and every comfort and attention provided for the patients, there is a general dislike on the part of the poor to be removed to them from their own houses, except in cases of actual necessity.

"Owing to this, and the filthy state of those parts of the town occupied exclusively by the lower classes, as the 'Broad-eye,' 'Back-walls,' &c, we have generally more or less of infectious diseases during the autumn and winter months in each year, and although such diseases do not extend their ravages to the more respectable inhabitants, the above form but a very small portion of the cases which occur.

"These parts of the town are without drainage, the houses, which are private property, are built without any regard to situation or ventilation, and constructed in a manner to ensure the greatest return at the least possible outlay. The accommodation in them does not extend beyond two rooms; these are small, and, for the most part, the families work in the day-time in the same room in which they sleep, to save fuel.

"There is not any provision made for refuse dirt, which, as the least trouble, is thrown down in front of the houses, and there left to putrefy. The back entrances to the houses in the principal streets are generally into these, the stabling and cow-houses, &c., belonging to them, forming one side of the street, and the manure, refuse vegetable matter, &c., carried into the street, and placed opposite to the poorer houses; so that they are continually subjected to the malaria arising from that, in addition to their own dirt.

"The sedentary occupation of the working classes (shoemaking being the staple trade of the town), their own want of cleanliness and general intemperance, form, also, a fruitful source of disease. One-half of the week is usually spent in the public-houses, and the other half they work night and day to procure the necessary subsistence for their families. There is a great want of improvement in the moral character of the poor; they can obtain sufficient wages to support their families respectably, but they are improvident and never make any provision against illness. A local Act for the improvement of the town empowers the commissioners to remove nuisances; but no notice is ever taken. The situation of Stafford also offers every facility for an efficient drainage; it is nearly surrounded by a large ditch, in which there might be a running stream of water, well calculated to remove all impurities; but it is always choked up, and in a stagnant state. The river 'Sow' is also close to the town. There are not any sewers even in the principal streets, the water being carried off by open channels. In the Lunatic Asylum, which closely adjoins the town, and averages 250 patients, great attention is paid to cleanliness, and we never have any infectious diseases."

In the month of December, 1839, an application was made to

the Board for advice and aid to meet the emergencies created by an epidemic which had broken out in the parish of Breadsall in the Shardlow union (Derbyshire). Mr. Senior, the Assistant Commissioner for the district, accompanied Dr. Kennedy to the spot where the fever was prevalent, and that report\* may be submitted to attention, as containing a picture of the habits of a large proportion of the population of that part of the country, and an exemplification in a group of individual cases of the common causes and effects of such calamities on the labouring population.

The report from Dr. Baker, of Derby, and Mr. Senior's report, comprising the returns from the medical officers of Nottingham, Lincoln, and other rural and town unions within his district, pourtray the sanitary condition of a large proportion of the population included in them.

Proceeding northward, a report from Mr. Bland, the medical officer of the Macclesfield union, gives the following description of the state of the residences occupied by many of the labourers of that town :—

"In a part of the town called the Orchard, Watercoates, there are 34 houses without back doors, or other complete means of ventilation; the houses are chiefly small, damp, and dark; they are rendered worse with respect to dampness perhaps than they would be from the habit of the people closing their windows to keep them warm. To these houses are three privies uncovered; here little pools of water, with all kinds of offal, dead animal and vegetable matter are heaped together, a most foul and putrid mass, disgusting to the sight, and offensive to the smell; the fumes of contagion spreads periodically itself in the neighbourhood, and produces different types of fever and disorder of the stomach and bowels. The people inhabiting these abodes are pale and unhealthy, and in one house in particular are pale, bloated, and rickety."

Mr. William Rayner, the medical officer of the Heaton Norris district of the Stockport union describes the condition of a part of the population of that place :—

"The localities in which fever mostly prevails in my district, are Shepherd's Buildings and Back Water Street, both in the township of Heaton Norris. Shepherd's Buildings consist of two rows of houses with a street seven yards wide between them; each row consists of what are styled back and front houses—that is two houses placed back to back. There are no yards or out-conveniences; the privies are in the centre of each row, about a yard wide; over them there is part of a sleeping-room; there is no ventilation in the bed-rooms; each house contains two rooms, viz., a house place and sleeping room above; each room is about three yards wide and four long. In one of these houses there are nine persons belonging to one family, and the mother on the eve of her confinement. There are 44 houses in the two rows, and 22 cellars, all of the same size. The cellars are let off as separate dwellings; these are dark, damp, and very low, not more than six feet between

\* Vide Appendix C.

the ceiling and floor. The street between the two rows is seven yards wide, in the centre of which is the common gutter, or more properly sink, into which all sorts of refuse is thrown; it is a foot in depth. Thus there is always a quantity of putrefying matter contaminating the air. At the end of the rows is a pool of water very shallow and stagnant, and a few yards further, a part of the town's gas works. In many of these dwellings there are four persons in one bed.

"Backwater-street, the other locality of fever, is proverbially the most filthy street in the town, contains a number of lodging-houses and Irish, who mostly live in dark damp cellars, in which the light can scarcely penetrate.

"It is not to be wondered at that such places should be the constant foci of fevers; there is scarcely a house in Shepherd's-buildings that has not been affected with fever, and in some instances repeatedly: new residents are most liable to be affected, the force of habit, or some other protecting influence seems to render those who have lived there some time less liable to be attacked. The same circumstance has been noticed by others, and M. Louis, who is known throughout Europe, having made this subject one of particular observation, states that it is generally within the first year that new comers take fever, whilst the old inhabitants who are equally exposed to the same exciting causes escape."

The report of Dr. Baron Howard, on the condition of the population of Manchester, and that of Dr. Duncan, on the condition of the population of Liverpool, will make up a progressive view of the condition of the labouring population in those parts of the country. The Report of one of the medical officers of the West Derby union, with relation to the condition of the labouring population connected with Liverpool, will serve to show that the evils in question are not confined to the labouring population of the town properly so called.

"The locality of the residences of the labouring classes are in respect to the surrounding atmosphere favourably situated, but their internal structure and economy the very reverse of favourable. The cottages are in general built more with a view to the per centage of the landlord than to the accommodation of the poor. The joiner's work is ill performed; admitting by the doors, windows, and even floors, air in abundance, which, however, in many cases, is not disadvantageous to the inmates. The houses generally consist of three apartments, viz., the day-room, into which the street-door opens, and two bed-rooms, one above the other. There is likewise beneath the day-room a cellar, let off either by the landlord or tenant of the house, to a more improvident class of labourers; which cellar, in almost all cases, is small and damp, and often crowded with inhabitants to excess. These cellars are, in my opinion, the source of many diseases, particularly catarrh, rheumatic affections, and tedious cases of typhus mitior, which, owing to the over-crowded state of the apartment, occasionally pass into typhus gravior. I need scarcely add that the furniture and bedding are in keeping with the miserable inmates. The rooms above the day-room are often let separately by the tenant to lodgers, varying in number from one or two, to six or eight individuals in each, their slovenly habits, indolence, and consequent accumulation of

filth go far to promote the prevalence of contagious and infectious diseases.

"The houses already alluded to front the street, but there are houses in back courts still more unfavourably placed, which also have their cellars, and their tenants of a description worse, if possible. There is commonly only one receptacle for refuse in a court of eight, ten, or twelve densely crowded houses. In the year 1836-7, I attended a family of 13, twelve of whom had typhus fever, without a bed in the cellar, without straw or timber shavings—frequent substitutes. They lay on the floor, and so crowded, that I could scarcely pass between them. In another house I attended 14 patients; there were only two beds in the house. All the patients, as lodgers, lay on the boards, and during their illness, never had their clothes off. I met with many cases in similar conditions, yet amidst the greatest destitution and want of domestic comfort, I have never heard during the course of twelve years' practice, a complaint of inconvenient accommodation."

The following extract from the report of *Mr. Pearson*, medical officer of the Wigan union, is descriptive of the condition of large classes of tenements in the manufacturing towns of Lancashire:—

"From the few observations which I have been enabled to make respecting the causes of fever during the two months which I have held the situation of house surgeon to the Dispensary, I am inclined to consider the filthy condition of the town as being the most prominent source. Many of the streets are unpaved and almost covered with stagnant water, which lodges in numerous large holes which exist upon their surface, and into which the inhabitants throw all kinds of rejected animal and vegetable matters, which then undergo decay and emit the most poisonous exhalations. These matters are often allowed, from the filthy habits of the inhabitants of these districts, many of whom, especially the poor Irish, are utterly regardless both of personal and domestic cleanliness, to accumulate to an immense extent, and thus become prolific sources of malaria, rendering the atmosphere an active poison. The streets which particularly exhibit this condition are Ashton-street, Hanover-street, Stuart-street, John-street, Lord-street, Duke-street, Princess-street, and the short streets leading from Queen-street, into Faggy-lane and Princess-street. It may be also mentioned, that in many of these streets there are no privies, or, if there are, they are in so filthy a condition as to be absolutely useless; the absence of these must, necessarily, increase the quantity of filth, and thus materially add to the extent of the nuisance.

"In addition to the streets above mentioned, there are, besides, two other localities, which must be considered as peculiarly fitted for the generation of malaria—I mean the waste land in front of Bradshaw Gate, and also that situated between Greenough's-row and Kerfoot's-row; the latter is one complete pool of stagnant water, mixed with various descriptions of putrifying animal and vegetable matters. Many of the yards and courts in various parts of the town are so built up as to prevent the movements of the atmosphere, and are in a horribly filthy state, in consequence of dunghills which are situated therein being allowed to



grow to an immense size, and the water which drains therefrom being permitted to flow over the surface."

Proceeding northwards, little difference is observable in the condition of the working classes in the ancient towns, where the habitations were crowded for the sake of fortification, and in the manufacturing towns, where the habitations are crowded for the sake of vicinity to the places of work, or from ignorance and inattention, or from the high price of land. We cite the following instances of the condition of the habitations and population in Durham, Barnard Castle, and Carlisle:—

*Mr. Nicholas Oliver*, Durham, states that—

"The city of Durham, like all ancient cities and towns, is built very irregularly, and surrounded on all sides by the river Wear, which is frequently overflowed, and much wooded. These in summer and autumn, by the combined influences of heat, moisture, and decaying vegetable substances, become abundant sources of malaria. The streets are very narrow, and the houses are built so much behind each other that the entrance to a great many of the dwellings is by a passage, lane, or alley, either a steep ascent or descent, where, from a proper want of receptacles and sewers, filth is allowed to accumulate, and there necessarily is a constant emanation of foetid effluvia. The majority of the houses are very old and in a dilapidated state, several not being weather proof. The great bulk of the working classes inhabit these tenements, and they seldom occupy more than two rooms, many only one, where all that is requisite in conducing to cleanliness and comfort has to be performed.

"The spirit of improvement, which is making such rapid strides in other parts of the country, is here quite dormant. Nothing calls louder for the attention of the constituted authorities than the improvements which might be effected in the habitations of the industrious classes, thereby increasing their health, comfort, and happiness."

*Mr. George Brown*, of Barnard Castle, in the Teesdale union, states that—

"The residences of the labouring population within the Teesdale Union, especially in Barnard Castle and the more populous villages, is mostly in large houses let into tenements. At least four-fifths of the weavers in Barnard Castle live in such residences, and about one half of all the other labouring poor in the Union. The tenements which form the residences of the weavers and other labourers in Barnard Castle are principally situate in Thorngate, Bridgegate, and the lower parts of the town, and in confined yards and alleys. The houses are many of them very large. I am told somewhere there are as many as 50 or more individuals under one roof. There is generally, perhaps, one privy to a whole yard (or onset as they term it), embracing five or six houses. From the crowded state of these dwelling-houses, and the filthiness of many of their inmates, disease would undoubtedly arise more commonly than it actually does, but the river Tees flows at the foot of each yard, running alongside of all the houses in Bridgegate. The impurities are thus speedily carried away, and the evils which might otherwise be expected from the effluvia of vegetable and other bodies in a state of

decomposition are prevented; besides which, the houses in general being large and the poorer class in the upper stories, they are more protected against cold and damp."

*Mr. Brown*, in regard to Barnard Castle, further states, that—

"A surgeon here of great intelligence and practice states that in the town of Barnard Castle he has always found the most obstinate cases of typhus and other epidemics, and also rheumatism, to prevail amongst the houses on the west side of the principal street. These houses slope towards the moat of the old castle, which is not sufficiently drained; and the thick and high walls of the ruins of the castle retain the damp, and prevent the accession of the western winds to the moat and many of the houses. In the interior of the castle, now used as a garden, there is a stagnant pond which ought to be drained off: this pond is nearly opposite the yards, which are full of the residences of the poorer classes, and called the Swamp. Disease is often found to exist in these yards, and the surgeon I have referred to attributes to it the dampness of the moat (upon or on the margin of which the houses are built) and to the pond before mentioned. All the houses on the west side of the street have one step, and some more, down from the street. I am also told by the same surgeon that very many of the cases of fever and rheumatism which he attends may be fairly traced to the dampness of houses or want of sufficient drainage of the ground previously to building, and their being built below the level of the adjoining ground, by which the moisture is thrown into them."

*Mr. Rowland*, of Carlisle, states—

"Though Carlisle abounds with beautiful walks, it generally has them accompanied with filthy putrid gutters, and there seems no mode of compelling any one to clean them out. The city is surrounded with such nuisances; on the south side at the foot of Botchergate, there is a gutter, perhaps a mile long, which conducts the filth of that quarter through the fields into the river Petteril. The stench in summer is very great. The filth seems to accumulate from want of descent, and probably the whole descent is in the first field next Botchergate. If this gutter was paved and the descent made regular, I have no doubt it would keep itself clean."

The following is a brief notice of the condition of the residences of the population amidst which the cholera first made its appearance in this country.

*Mr. Robert Atkinson*, Gateshead, states, that—

"It is impossible to give a proper representation of the wretched state of many of the inhabitants of the indigent class, situated in the confined streets called Pipewellgate and Killgate, which are kept in a most filthy state, and to a stranger would appear inimical to the existence of human beings, where each small, ill ventilated apartment of the house contained a family with lodgers in number from seven to nine, and seldom more than two beds for the whole. The want of convenient offices in the neighbourhood is attended with many very unpleasant circumstances, as it induces the lazy inmates to make use of chamber utensils, which are suffered to remain in the most offensive state for several days, and are then emptied out of the windows. The writer had occasion a short time

ago to visit a person ill of the cholera; his lodgings were in a room of a miserable house situated in the very filthiest part of Pipewellgate, divided into six apartments, and occupied by different families to the number of 26 persons in all. The room contained three wretched beds with two persons sleeping in each: it measured about 12 feet in length and 7 in breadth, and its greatest height would not admit of a person's standing erect; it received light from a small window, the sash of which was fixed. Two of the number lay ill of the cholera, and the rest appeared afraid of the admission of pure air, having carefully closed up the broken panes with plugs of old linen."

The *Rev. Dr. Gilly*, the vicar of Norham and canon of Durham, in an appeal in behalf of the border peasantry, describes their dwellings as "built of rubble or unhewn stone, loosely cemented; and from age, or from badness of the materials, the walls look as if they would scarcely hold together." The chinks gape in so many places as admit blasts of wind:—

"The chimneys have lost half their original height, and lean on the roof with fearful gravitation. The rafters are evidently rotten and displaced; and the thatch, yawning to admit the wind and wet in some parts, and in all parts utterly unfit for its original purpose of giving protection from the weather, looks more like the top of a dunghill than of a cottage.

"Such is the exterior; and when the hind comes to take possession, he finds it no better than a shed. The wet, if it happens to rain, is making a puddle on the earth floor. (This earth floor, by the bye, is one of the causes to which Erasmus ascribed the frequent recurrence of epidemic sickness among the cotters of England more than 300 years ago. It is not only cold and wet, but contains the aggregate filth of years, from the time of its first being used. The refuse and dropping of meals, decayed animal and vegetable matter of all kinds, which has been cast upon it from the mouth and stomach, these all mix together and exude from it.) Window-frame there is none. There is neither oven, nor copper, nor grate, nor shelf, nor fixture of any kind; all these things he has to bring with him, besides his ordinary articles of furniture. Imagine the trouble, the inconvenience, and the expense which the poor fellow and his wife have to encounter before they can put this shell of a hut into anything like a habitable form. This year I saw a family of eight—husband, wife, two sons, and four daughters—who were in utter discomfort, and in despair of putting themselves in a decent condition, three or four weeks after they had come into one of these hovels. In vain did they try to stop up the crannies, and to fill up the holes in the floor, and to arrange their furniture in tolerably decent order, and to keep out the weather. Alas! what will they not suffer in the winter! There will be no fireside enjoyment for them. They may huddle together for warmth, and heap coals on the fire; but they will have chilly beds and a damp hearth-stone; and the cold wind will sweep through the roof, and window, and crazy floor-place, in spite of all their endeavours to exclude it.

"The general character of the best of the old-fashioned hind's cottages in this neighbourhood is bad at the best. They have to bring everything with them—partitions, window-frames, fixtures of all kinds, grates,

and a substitute for ceiling; for they are, as I have already called them, mere sheds. They have no byre for their cows nor sties for their pigs, no pumps or wells, nothing to promote cleanliness or comfort. The average size of these sheds is about 24 by 16. They are dark and unwholesome. The windows do not open; and many of them are not larger than 20 inches by 16; and into this place are crowded 8, 10, or even 12 persons."

In a selection of plans and drawings of labourers' dwellings will be found a sketch of a group of hinds' cottages, such as those described by *Dr. Gilly*.

The progress of the inquiry into Scotland shows the external and internal condition of the poorer classes of the population to be still more deplorable. The condition of a large portion of the labouring population of the smaller towns, and of the rural districts, is displayed in the Report of *Dr. Scott Alison*, on the sanitary condition and general economy of the population of Tranent; in the Report of *Mr. Stevenson*, on the condition of the town of Musselburgh; that of *Dr. Sym*, on the town of Ayr, to which further reference will subsequently be made.

The description given of the houses of labourers of Lochmaben, by *Mr. Wilson*, surgeon, is one which characterizes a large class of houses throughout Scotland:—

"In Lochmaben, they are surrounded by low meadow lands subject to frequent inundations, marshes and lakes, with dunghills and pools of dirty water, in which vegetable substances are soaked for the purpose of making manure on all sides of the dwellings. These houses, similar to the dwellings of the generality of the labouring classes, consist of a building 30 feet in length by 16 feet in breadth within the walls; the floor is formed of clay; ceiling, if any, generally formed by spars of wood laid close together, and covered with dry turf; one front door and two front windows. This building is usually occupied by two families, entering by the same door; the partitions are formed by the back of the beds, which will be best understood by describing them as wooden boxes open on one side; the windows rarely are made to open, so that they are ventilated by the door; but having little fuel, the door must be kept shut to maintain warmth, and the chimneys being badly constructed, the dwelling is often full of smoke. Potatoes are often kept under the beds. There are no proper receptacles for filth attached to the houses."

The most wretched of the stationary population of which I have been able to obtain any account, or that I have ever seen, was that which I saw in company with *Dr. Arnott*, and others, in the wynds of Edinburgh and Glasgow.

I prefer citing his description of the residences we visited:—

"In the survey which I had the opportunity of making in September, 1840, of the state of Edinburgh and Glasgow, all appeared confirmatory of the view of the subject of fevers submitted to the Poor Law Commissioners by those who prepared the Report in London.

"In Glasgow, which I first visited, it was found that the great mass

of the fever cases occurred in the low wynds and dirty narrow streets and courts, in which, because lodging was there cheapest, the poorest and most destitute naturally had their abodes. From one such locality, between Argyll-street and the river, 754 of about 5000 cases of fever which occurred in the previous year were carried to the hospitals. In a perambulation on the morning of September 24th, with Mr. Chadwick, Dr. Alison, Dr. Cowan (since deceased, who had laboured so meritoriously to alleviate the misery of the poor in Glasgow), the police magistrate, and others, we examined these wynds, and, to give an idea of the whole vicinity, I may state as follows:—

"We entered a dirty low passage like a house door, which led from the street through the first house to a square court immediately behind, which court, with the exception of a narrow path around it leading to another long passage through a second house, was occupied entirely as a dung receptacle of the most disgusting kind. Beyond this court the second passage led to a second square court, occupied in the same way by its dunghill; and from this court there was yet a third passage leading to a third court, and third dungheap. There were no privies or drains there, and the dungheaps received all filth which the swarm of wretched inhabitants could give; and we learned that a considerable part of the rent of the houses was paid by the produce of the dungheaps. Thus, worse off than wild animals, many of which withdraw to a distance and conceal their ordure, the dwellers in these courts had converted their shame into a kind of money by which their lodging was to be paid. The interiors of these houses and their inmates corresponded with the exteriors. We saw half-dressed wretches crowding together to be warm; and in one bed, although in the middle of the day, several women were imprisoned under a blanket, because as many others who had on their backs all the articles of dress that belonged to the party were then out of doors in the streets. This picture is so shocking that, without ocular proof, one would be disposed to doubt the possibility of the facts; and yet there is perhaps no old town in Europe that does not furnish parallel examples. London, before the great fire of 1666, had few drains and had many such scenes, and the consequence was, a pestilence occurring at intervals of about 12 years, each destroying at an average about a fourth of the inhabitants.

"Who can wonder that pestilential disease should originate and spread in such situations? And, as a contrast, it may be observed here, that when the kelp manufacture lately ceased on the western shores of Scotland, a vast population of the lowest class of people who had been supported chiefly by the wages of kelp-labour remained in extreme want, with cold, hunger, and almost despair pressing them down—yet, as their habitations were scattered and in pure air, cases of fever did not arise among them.

"Edinburgh stands on a site beautifully varied by hill and hollow, and owing to this, unusual facilities are afforded for perfect drainage; but the old part of the town was built long before the importance of drainage was understood in Britain, and in the unchanged parts there is none but by the open channels in the streets, wynds, and closes or courts. To remedy the want of covered drains, there is in many neighbourhoods a very active service of scavengers to remove everything which open drains cannot be allowed to carry; but this does not prevent the air

from being much more contaminated by the frequent stirring and sweeping of impurities than if the transport were effected under ground; and there are here and there enclosed spaces between houses too small to be used for any good purpose but not neglected for bad, and to which the scavengers have not access.

"Another defect in some parts of Edinburgh is the great size and height of the houses (some of them exceeding ten stories), with common stairs, sometimes as filthy as the streets or wynds to which they open. By this construction the chance of cleanliness is lessened, the labour of carrying up necessaries, and particularly water for the purposes of purifying is increased; and if any malaria or contagion exist in the house, the probability of its passing from dwelling to dwelling on the same stair is much greater than if there were no communication but through the open air. Illustrating how malaria may be produced, I may state that in making a round of observation with Mr. Chadwick, attended by the Police Superintendent, and others, we visited a house at the back of the Canongate, which in former days had been the chief inn of the city, but now, with its internal court-yard of steep ascent, is occupied by families of the labouring classes. In the court-yard a widow of respectable appearance, who answered some of our questions, occupied a room which appeared on the ground-floor, as seen from the court, but was above a stable, now used as a pigsty, opening to the lower level of the external street. A little while before, on the occasion of the dungheap being removed from the pigsty, two children who lived with her, a daughter and a niece, were made ill by the effluvia from below, and both died within a few days.

"The facts here referred to go far to explain why fatal fever has been more common in Edinburgh than from other circumstances would have been anticipated."

It might admit of dispute, but, on the whole, it appeared to us that both the structural arrangements and the condition of the population in Glasgow was the worst of any we had seen in any part of Great Britain.

## II.—PUBLIC ARRANGEMENTS EXTERNAL TO THE RESIDENCES BY WHICH THE SANITARY CONDITION OF THE LABOURING POPULATION IS AFFECTED.

I now propose to bring under consideration those parts of the various local reports and communications which most prominently set forth special defects that apparently admit of specific remedies.

The defects which are the most important, and which come most immediately within practical legislative and administrative control, are those chiefly *external* to the dwellings of the population, and principally arise from the neglect of drainage. The remedies include the means for drainage simply, *i. e.*, the means for the removal of an excess of moisture; and

The means for the removal of the noxious refuse of houses, streets, and roads, by sewerage, by supplies of water, and by the service of scavengers and sweepers.