III.—CIRCUMSTANCES CHIEFLY IN THE INTERNAL ECONOMY AND BAD VENTILATION OF PLACES OF WORK; WORKMEN'S LODGING-HOUSES, DWELLINGS, AND THE DOMESTIC HABITS AFFECTING THE HEALTH OF THE LABOURING CLASSES.

The evils arising from the bad ventilation of places of work will probably be most distinctly brought to view, by the consideration of the evidence as to its effects on one particular class of workpeople.

The frequency of cases of early deaths, and orphanage, and widowhood amongst one class of labourers, the journeymen tailors, led me to make some inquiries as to the causes affecting them; and I submit the following evidence for peculiar consideration, as an illustration of the operation of one predominant cause;—bad ventilation or overcrowding, and the consequences on the moral habits, the loss of healthful existence and happiness to the labourer, the loss of profit to the employer, and of produce to the community, and the loss in expenditure for the relief of the destitution, which original cause (the bad ventilation) we have high scientific authority for stating to be easily and economically controllable.

Mr. Thomas Brownlow, tailor, aged 52:—

"It is stated that you have been a journeyman tailor, and now work for yourself. At what description of places have you worked?—I have always worked at the largest places in London; one part of my time I worked at Messrs Allen's, of Old Bond-street, where I worked eight years; at another part of my time I worked at Messrs. Stultze's, in Clifford-street, where I worked four years. At Messrs. Allen's they had then from 80 to 100 men at work; at Messrs. Stultze's they had, when I worked there, about 250 men.

"Will you describe the places of work, and the effects manifested in the health of the workmen?—The place in which we used to work at Messrs. Allen's was a room where 80 men worked together. It was a room about 16 or 18 yards long, and 7 or 8 yards wide, lighted with skylights; the men were close together, nearly knee to knee. In summer time the heat of the men and the heat of the irons made the room 20 or 30 degrees higher than the heat outside; the heat was then most suffocating, especially after the candles were lighted. I have known young men, tailors from the country, faint away in the shop from the excessive heat and closeness; persons, working-men, coming into the shop to see some of the men, used to complain of the heat, and also of the smell as intolerable; the smell occasioned by the heat of the irons and the various breaths of the men really was at times intolerable. The men sat as loosely as they possibly could, and the perspiration ran from them from the heat and the closeness. It is of frequent occurrence in such work-shops that light suits of clothes are spoiled from the perspiration of the hand, and the dust and flue which arises darkening the work. I have seen 40*l.* or 50*l.* worth of work spoiled in the course of the summer season from this cause.

"In what condition are these work-places in winter?—They are more unhealthy in winter, as the heat from the candles and the closeness is

much greater. Any cold currents of air which come in give annoyance to those who are sitting near the draught. There is continued squabbling as to the windows being opened; those who are near the windows, and who do not feel the heat so much as the men near the stoves, objecting to their being opened. The oldest, who had been inured to the heat, did not like the cold, and generally prevailed in keeping out the cold or the fresh air. Such has been the state of the atmosphere, that in the very coldest nights large thick tallow candles (quarter of a pound candles) have melted and fallen over from the heat.

"What was the effect of this state of the work-places upon the habits of the workmen?—It had a very depressing effect on the energies; that was the general complaint of those who came into it. Many could not stay out the hours, and went away earlier. Those who were not accustomed to the places generally lost appetite. The natural effect of the depression was, that we had recourse to drink as a stimulant. We went into the shop at six o'clock in the morning; but at seven o'clock, when orders for the breakfast were called for, gin was brought in, and the common allowance was half-a-quartern. The younger hands did not begin with gin.

"Was gin the first thing taken before any solid food was taken?—Yes, and the breakfast was very light; those who took gin generally took only half-a-pint of tea and half a twopenny loaf as breakfast.

"When again was liquor brought in?—At eleven o'clock.

"What was taken then?—Some took beer, some took gin again. In a general way, they took a pint of porter at eleven o'clock. It was seldom the men took more than the half-quartern of gin.

"When again was liquor brought in?—At three o'clock, when some took beer and some gin, just the same as in the morning. At five o'clock the beer and gin came in again, and was usually taken in the same quantities. At seven o'clock the shop was closed.

"After work was there any drinking?—Yes; nearly all the young men went to the public-house, and some of the others.

"What were the wages they received?—Sixpence per hour, which, at the full work, made 6*s.* a-day, or 36*s.* a-week.

"Did they make any reserves from this amount of wages?—No; very few had anything for themselves at the end of the week.

"How much of the habit of drinking was produced by the state of the work-place?—I should say the greater part of it; because when men work by themselves, or only two or three together, in cooler and less close places, there is scarcely any drinking between times. Nearly all this drinking proceeds from the large shops, where the men are crowded together in close rooms: it is the same in the shops in the country, as well as those in the town. In a rural place, the tailor, where he works by himself, or with only two or three together, takes very little of the fermented liquor or spirits which the men feel themselves under a sort of necessity for doing in towns. The closer the ventilation of the place of work, the worse are the habits of the men working in them.

"You referred to the practice of one large shop where you worked some time since; was that the general practice, and has there been no alteration?—It was and is now the general practice. Of late, since coffee has become cheaper, somewhat more of coffee and less of beer has been

bought in; but there is as much gin now brought in between times, and sometimes more.

"What would be the effect of an alteration of the place of work—a ventilation which would give them a better atmosphere?—It would, without doubt, have an immediately beneficial effect on the habits. It might not cure those who have got into the habit of drinking; but the men would certainly drink less, and the younger ones would not be led into the habit so forcibly as they are.

"What is the general effect of this state of things upon the health of the men exposed to them?—Great numbers of them die of consumption. "A decline" is the general disease of which they die. By their own rules, a man at 50 years of age is superannuated, and is thought not to be fit to do a full day's work.

"What was the average of the ages of the men at work at such shops as those you have worked at?—Thirty-two, or thereabouts.

"In such shops were there many superannuated men, or men above 50 years of age?—Very few. Amongst the tailors employed in the shops, I should say there were not 10 men in the hundred above 50 years of age.

"When they die, what becomes of their widows and children, as they seldom make any reserve of wages?—No provision is made for the families; nothing is heard of them, and, if they cannot provide for themselves, they must go upon the parish.

"Are these habits created by the closeness of the rooms, attended by carelessness as to their mode of living elsewhere?—I think not as to their lodgings. The English and Scotch tailors are more carèful as to their places of lodging, and prefer sleeping in an open place. The men, however, who take their pint of porter and their pipe of tobacco in a public-house after their hours of work, take it at a place which is sometimes as crowded as a shop. Here the single men will stay until bed-time.

"Are gin and beer the only stimulants which you conceive are taken in consequence of the want of ventilation and the state of the place of work when crowded?—No: snuff is very much taken as a stimulant; the men think snuff has a beneficial effect on the eyes. After going into these close shops from the open air, the first sensation experienced is frequently a sensation of drowsiness, then a sort of itching or uneasiness at the eye, then a dimness of the sight. Some men of the strongest sight will complain of this dimness; all eyes are affected much in a similar manner. Snuff is much used as a stimulant to awaken them up; smoking in the shops is not approved of, though it is much attempted; and the journeymen tailors of the large shops are in general great smokers at the public-houses.

"Do the tailors from villages take snuff or smoke as well as drink so much as the tailors in the large shops in the towns?—They neither take so much snuff nor tobacco, nor so much of any of the stimulants, as are taken by the workmen in the crowded shops of the towns.

"Do their eyes fail them as soon?—No, certainly not.

"With the tailors, is it the eye that fails first?—Yes; after long hours of work the first thing complained of by the tailors is that the eyes fail; the sight becomes dim, and a sort of mist comes between them and their work.

"Judging from your own practical experience, how long do you conceive that a man would work in a well-ventilated or uncrowded room, as compared with a close, crowded, ill-ventilated room?—I think it would make a difference of two hours in the day to a man. He would, for example, be able, in an uncrowded or well-ventilated room, to do his twelve hours' work in the twelve hours; whereas in the close-crowded room he would not do more than ten hours' work in the twelve.

"Of two men beginning at 20 years of age, what would be the difference in extent of labour performed by them in town shops or in the country?—A man who had begun at 20 in these crowded shops would not be so good a man at 40 as a man working to 50 in a country village; of the two, the country tailor would be in the best condition in health and strength: in point of fact he is so. The difference may be set down as a gain of 10 years' good labour. There are very few who can stand such work as the town shops 20 years.

"The eyes then become permanently injured, as well as fail during the day, in these crowded shops?—Yes, they do. After 45 years of age, the eyes begin to fail, and he cannot do a full day's work.

"Supposing a workman to work in a well-ventilated room, and to be freed from the nervous exhaustion consequent on the state of the place, might he not save at least all that he drinks in the times between his meals, or be enabled to apply it better, if he were so disposed; and, perhaps, the value of the two hours' extra work in the 12, when he is working piece-work?—Yes, certainly he might.

"Taking your account of the average loss by nervous exhaustion and bad habits to be two hours' work for 20 years, and 12 hours daily work for 10 years in addition, supposing him to be employed full time, it would be a loss of the value of 50,000 hours of productive labour (of the value at 6*d.* per hour, 1,250*l.*); or, if he were only in work half a-year, at a loss of 25,000 hours; so that if he were employed the half time at the full wages, or full time at the half wages, such workmen will have lost the means of putting by a sum of not less than 600*l.* to maintain him in comfort when he is no longer able to work?—Yes, I think that would be found to be correct. Very few do save; but I have known some save considerable sums. I knew one man, of the name of John Hale, who saved about 600*l.* He was not one of the most sober men, but he was in constant employment, sometimes at Allen's and sometimes at Weston's, and he was very careful; but he died when he was about 45. I knew another man, whose name was Philip Gray, who used to prefer the smaller shops. He was a man of a very good constitution, and he lived until he was about 70. He was a journeyman all his life, and he had, when he died, more than 1,500*l.*, all saved by London journeywork. He used to live in a baker's shop in Silver-street, Golden-square.

"Was he of a penurious disposition?—He associated less with the men than others, and they knew little about him. He was dressed much the same as the rest, but he was much more clean in his person: he was remarkable for his cleanliness, and he was very neat in his person. Both he and Hale were single men.

"Can you doubt that, under favourable sanitary circumstances, such instances would become frequent?—It cannot be doubted. I have known other instances of saving, but those were not of men working on the board: they were mostly of men who had situations in the cutting-rooms."

Mr. John Fowler:—

"You are a tailor, are you not?—I have been all my life a journeyman tailor, and worked in the metropolis; but I have long been superannuated, and now act as collector to the Benevolent Institution for the Relief of Aged and Infirm Tailors.

"That is supported by the masters, is it not?—Yes; the journeymen tailors subscribe, but it is principally supported by masters, who subscribe to it most liberally. Mr. Stultze, for example, has subscribed 795*l.* in money, and is a yearly subscriber of 25 guineas. He has made a present to the institution of the ground for the erection of almshouses, worth about 1000*l.*, and has undertaken to build six houses at his own expense, for the reception of 20 poor pensioners. The funds are about 11,000*l.*, principally subscribed by the masters.

"Have you belonged to any other society?—I was clerk to a trade society, consisting of upwards of 500 men.

"Have you worked in the more crowded shops?—I have worked at Mr. Allen's, and Mr. William's, of Conduit-street, which was a shop containing about as many men as Mr. Allen's. I have worked at other shops, not so large as Mr. Allen's.

"Have you read Mr. Brownlow's evidence?—Yes, I have.

"How far do the facts generally coincide with your own observations?—Generally they do. I agree with him as to the effects of work in close workshops, and as to the time a man would last as a workman, under the most favourable circumstances, in a well-ventilated place. I do not think the drinking of gin was general, to the extent he mentions; and I think the improvement as to drinking beer, as well as spirits, is now very great; particularly in spirits, since tea and coffee have been so much drank. Of late, as far as my knowledge extends, there is very little beer-drinking in the afternoon. I knew the individuals he mentions as having saved money, and I have known many others do so too. Some of them have become opulent and respectable masters, who were fellow-shopmen with me. I conceive that the establishment of coffee-shops has been of great benefit to the health and morals of the men: it has taken them from the public-house. I have known a very large proportion of men carried off young, and in middle life, by consumption; but, in general, irregular habits were mixed up with the effects of the work in close places. The crowding of the large shops must be considered as occurring only in the season."

The following is the examination of a tailor in Marlborough, taken by Mr. Grainger:—

Charles Dobson, 58 years old,—

"Has been a tailor since he was 16 years old. Has always lived in the country. Has two sons journeymen tailors, who have been employed in London, one seven and the other five years. Formerly employed seven or eight men, who worked with witness in a shop which was very close, so that if there were nine men they could scarcely sit on the board. Although there was very little drinking, they were so much oppressed in the summer, and at other seasons when the candles were lighted, that he has seen the men reel after getting off the board. Used himself, when it was very warm, to feel faint. Attributes these effects to the heat of the shop, arising from the closeness, the stove, and the hot irons; also to the

smell of the cloth and the breath of the men. Latterly has worked with fewer hands and in a more open shop; finds his health better, and that he is not oppressed by the work. Has often noticed in this town, where there are a few shops containing, in the summer, 14 or 15 journeymen, that when men go into them who have previously worked in the neighbouring villages, they became pale and unhealthy-looking: attributes this to the heat. His sons have complained to him that their health suffers from working in large shops in London. Has seen many who have gone to London return 'looking far worse than when they went.' From his experience, thinks that a man may enjoy his health in this business, if he works moderate hours and in an airy shop, where the number is small. Should consider 12 hours, allowing out of them one hour for dinner, moderate: these are the common hours in this part of the country. Has known many men who have worked in the neighbouring villages; they are generally quite as healthy as other people, 'does not see any difference.' They are more strong and not so chilly as those who work in shops. Has known many upwards of 50, who were quite able to go on with the work; they are only obliged to give it up from failure of sight as they advance in age: 'from nothing else.' Knew one man in this town who went on till he was 77. Has himself good health."

I have collected the evidence of several master tailors on the efects of work in crowded or bad ventilated rooms. Some are inclined to ascribe more of the ill health to the habits of the journeymen in drinking at public-houses, and to the state of their private dwellings, but in the main results the loss of daily power—*i. e.*, the loss of at least one-third the industrial capabilities enjoyed by men working under advantageous circumstances—the nervous exhaustion attendant on work in crowds, and the consequent temptation to resort continually to stimulants, which in their turn increase the exhaustion, are fully proved, and indeed generally admitted. I have caused the mortuary registers to be examined, but find that they do not distinguish the masters from the journeymen, and that there are no ready means of distinguishing those of the deceased who have been employed in the larger shops. It is also stated that many who come to work in town and become diseased, return and die in the villages. But in the registered causes of death of 233 persons entered during the year 1839 in the eastern and western Unions of the metropolis, under the general head "tailor," no less than 123 are registered as having died of disease of the respiratory organs; of whom 92 died of consumption;* 16 of diseases of the nervous system, of

* The spread of the knowledge of the fact that animals are subject to typhus consumption, and the chief of the train of disorders supposed to be peculiarly human, will, it may be expected, more powerfully direct attention to the common means of prevention. The following extract from a report on the labours of the Board of Health at Paris will show the effect of bad ventilation on cattle:—"The *epizootie* are in many respects less serious than the epidemics; nevertheless, as they often affect the animals which serve for the nutriment of man, and that apart from this consideration they may have grave consequences for the public health, they have con-

whom 8 died of apoplexy; 16 of epidemic or contagious diseases, of whom 11 died of typhus; 23 are registered as having died of diseases of "uncertain seat," of whom 13 fell victims of dropsy; 8 died of diseases of the digestive organs, and six of "heart disease;" and of the whole number of 233 only 29 of old age; and of these, if they could be traced, we may pronounce confidently that the greater proportion of them would be found to be not journeymen, of whom not two or three per cent. attain old age, but masters. On comparing the mortuary registers in the metropolis with the registers in north-western and the south-western parts of England, where we may expect a larger proportion of men working separately, I find that whilst 53 per cent. of the men die of diseases of the respiratory organs in the metropolis, only 39 per cent. die of these diseases in the remote districts; that whilst five per cent. die of typhus in London, only one per cent. fall victims to it in the country; that whilst in London only 12 in the hundred attain old age, 25 in the hundred are registered as having attained it in the remote districts.

It is due to Messrs. Stultze, the employers mentioned by the first witness, to state, that since he worked with them they have made considerable alterations with the view to increase the ventilation of their workshops, and have expressed their desire to adopt whatever improvements may be pointed out to them.

I have been informed that some tailors' workshops at Glasgow have been carefully ventilated, and that the immediate results are as satisfactory as were anticipated, but the change has been too recent to permit any estimate of the effects on the general habits of the workmen.

The preceding case may serve as a general instance of the practical difference of the effects in the saving of suffering as well as of expense, by active benevolence exerted with foresight in measures of prevention, as compared with benevolence exerted in measures of alleviation of disease after it has occurred.

The subscriptions to the benevolent institution for the relief of the aged and infirm tailors, by individual masters in the metropolis, appear to be large and liberal, and amount to upwards of 11,000*l.*; yet it is to be observed, that if they or the men had been aware of the effects of vitiated atmospheres on the constitution and general strength, and of the means of ventilation, the practicable gain of money from the gain of labour by that sanitary measure could not have been less in one large shop, employing 200 men, than 100,000*l.* Independently of subscriptions of the whole trade, it would, during their working period of life, have been sufficient, with the enjoyment of greater health and comfort by every workman during the time of work, to have purchased him an annuity of 1*l.* per week for comfortable and respectable self-support during a period of superannuation, commencing soon after *fifty* years of age.

Of that which in these instances appear to be the main cause of premature disease and death, defective ventilation, it is to be remarked that until very lately little had been observed or understood, even by professional men or men of science; and that it is only when the public health is made a matter of public care by a responsible public agency that what is understood can be expected to be generally and effectually applied for the public protection. Vitiated air not being seen, and air which is pure in winter being cold, the cold is felt and the air is excluded by the workmen. The great desideratum hitherto has been to obtain a circulation of air which was *warm* as well as fresh. This desideratum has been attained, after much trial, in the House of Commons; but there is reason to believe that, by various means, at an expense within the reach certainly of large places of work, a ventilation equally good might be secured with mutual advantage.

The effects of bad ventilation, it need not be pointed out, are chiefly manifested in consumption, the disease by which the greatest slaughter is committed. The causes of fever are comparatively few and prominent, but they appear to have a concurrent effect in producing consumption. The investigation of the whole of the contributary causes to the production of the immense mass of

stantly engaged the care of the council. In 1834, an *epizootie* was reported to the administration which prevailed among the cows of the communes round Paris, and which caused a great mortality. The researches of the council established that this *epizootie* was only a chronic disease, a true pulmonary phthisis, to which has been given the name of *pommelière*, and by which the greater part of the cows had been attacked which fill the stables of the milkmen of Paris and its environs. According to the council, the principal cause of the evil was to be attributed to the vicious regimen to which this species of animal is subjected. It is known that they pass a part of the year in stables perfectly closed, in which the space is not proportioned to the number of inmates, in which the vitiated air renews itself with extreme difficulty, and in which the heat is sometimes suffocating. It is known, also, that they pass suddenly from the food of the stable to pasture, and that in this change they go from the hot and humid atmosphere of the stable to a sudden exposure to the continual variations of the external air. This alternation of food and of heat and cold operates as a powerful cause of disease. But as the evil does not announce itself in a violent manner, as its progress is not very rapid, as there is even a period in the disease in which the animal is disposed to get flesh, the cow-feeder, who knows to what point to keep her, sells her when she is ready to calve. It is in a radius of 30 leagues from the capital that cows of this kind are purchased by the jobbers, who supply the milkmen of Paris. With these last they still hold out a certain number of years, if they are properly cared for, but in general they are kept in stables which are neither sufficiently large nor sufficiently airy, where they are exposed to the same causes which gave birth to the malady. The phthisis arrives insensibly at its last stage, and carries off every year from Paris and its neighbourhood a great number of these cows." A similar discovery was only lately made as to the effect of defective ventilation on the cavalry horses in some of the government barracks in England; and it is stated, that a saving of several thousand pounds per annum was effected by an easy improvement of the ventilation of the barracks near the metropolis. An agriculturalist had a large number of sheep housed to feed them on mangel wurzel, but a great number of them sickened and died, and he declared that it was the food which had killed them. A veterinary surgeon, however, who happened to be aware of the consequences of defective ventilation, pointed out the remedy,—a better ventilation for the sheep, which were overcrowded. The defect was remedied; the sheep ate well, and throve upon the mangel wurzle.

mortality occasioned by that disease, would be beyond the time or means allowed for the present inquiry; but defective ventilation and defective management in respect to changes of temperature, are causes everywhere apparent amongst the labouring classes. The effects of good ventilation, as a single cause of the prevention or alleviation of disease, are nowhere so clearly manifest as in their effects on hospital treatment. What Dr. Bisset Hawkins states in respect to the sanitary measures necessary to ensure successful treatment in hospitals, may be stated in respect to common dwellings as well as places of work.

"Next to the influence of national causes, the mortality of hospitals is most affected by position and internal economy. These circumstances appear more powerful than even the various merits of practice; and, happily for mankind, they are advantages of a definite nature, easily comprehended, and, of late years, generally demanded. The case was formerly very different, when a singular prejudice or indifference existed in respect to ventilation. At the Leeds hospital no case of compound fracture, nor of trepan, survived. At the Hôtel Dieu, of Paris, compound fractures were also almost always fatal, and few survived amputation. The system which will bear improper air with impunity during health becomes keenly susceptible of its mischief when diseased, and a change of air will often restore where the strictest diet has failed. Mortality is seldom to be assigned to the influence of bad practice, which, probably, does not often destroy life. An accomplished friend made particular notes on the comparative mortality under three physicians in the same hospital; one was expectant, one tonic, and the other eclectic. The mortality was the same, but the length of the disorder, the character of the convalescence, and the chances of relapse were very different.

"The earliest statement which we possess of the mortality of our hospitals is in Sir William Petty's work on Political Arithmetic, from which it appears, that in the year 1685 the proportion of the deaths to the cures in St. Bartholomew's and St. Thomas's hospitals was about 1 to 7. The annual printed report of St. Thomas's hospital for 1689 is still preserved: the mortality was then about 1 in 10. During the ten years from 1773 to 1783, the mortality at St Thomas's became still smaller, it was 1 in 14. About the year 1783, some improvements were made with respect to cleanliness and ventilation, and during the ten subsequent years the annual deaths were accordingly still fewer than before, less than 1 in 15. During the ten years intervening between 1803 and 1813 the improvement continued, and the proportion fell to only 1 in 16. The average during the 50 years from 1764 to 1813 was remarkably small, only 1 in 15."

Parent Du Châtelet notices in the following terms the diminution in the mortality of the Hôtel Dieu from better ventilation:—

"The mortality has diminished in the Hôtel Dieu in remarkable proportions. Without saying anything of the enlargement of the windows, of the warm clothing, of a better system of heating the apartments, are we to count for nothing the destruction of all the high houses which surrounded the Hôtel Dieu on every side? In our opinion the pure and dry air which circulates now in every part, the sun which penetrates there, the stoves which have been erected, have as much contributed to its healthiness as the suppression of the amphitheatres of anatomy which were in its neighbourhood."

The reports of other hospitals present similar and generally corroborative experience. In the space of four years, ending in 1784, in a badly-ventilated house, the Lying-in Hospital in Dublin, there died 2,944 children out of 7,650; but after freer ventilation, the deaths in the same period of time, and in a like number of children, amounted only to 279.

One effect of the attention given to the condition of the workers in the factories has been, that ventilation has been extensively introduced, and with marked effects, on the condition of the workpeople. When I was at Glasgow a striking instance was pointed out to me of the beneficial effects of ventilation when applied to the dwellings of the working classes connected with such establishments. I was informed there was in that city an assemblage of dwellings for their workpeople, called, from its mode of construction and the crowd collected in it, the Barracks. This building contained 500 persons; every room contained one family. The consequences of this crowding of the apartments, which were badly ventilated, and the filth were, that fever was scarcely ever absent from the building. There were sometimes as many as seven cases in one day, and in the last two months of 1831 there were 57 cases in the building. All attempts to induce the inmates to ventilate their rooms were ineffectual, and the proprietors of the work, on the recommendation of Mr. Fleming, a surgeon of the district, fixed a simple tin tube of two inches in diameter, into the ceiling of each room, and these tubes led into one general tube, the extremity of which was inserted into the chimney of the factory furnace. By the perpetual draught thus produced upon the atmosphere of each room the inmates were compelled, whether they would or not, to breathe pure air. The effect was that, during the ensuing eight years, fever was scarcely known in the place. The process was apparently defective only in not providing for the appropriate warmth of the air introduced. The cost of remedies previously applied in the public hospitals to the fever cases, continually produced as described in the barracks, were stated by Dr. Cowan to have afforded a striking contrast to the cost of the means of prevention.

Similar defective ventilation and overcrowding in rooms of work, with the addition of the deterioration of the air by the use of candles or gas-lamps at night-work, produce similar effects on the milliners and dressmakers employed at the larger workshops of the metropolis. In a return of the causes of death to the milliners and dressmakers who died during the year 1839, in the unions of the metropolis, in which we have no means of distin-

guishing those who worked separately or in small numbers, the results were as follows:—

TABULAR STATEMENT of DEATHS from Disease of Milliners and Dressmakers, in the Metropolitan Unions during the year 1839, as shown by the Mortuary Registers.

Age.	Number of Deaths.	Average Age.	Number of Deaths from Consumption.	Average Age.	Number of Deaths from other Lung Diseases.	Average Age.
Under 20	6	17	4	18	..	..
20 ,, 30	24	24	17	23	1	23
30 ,, 40	11	34	6	34	1	33
40 ,, 50	2	45	..	..	1	40
50 ,, 60	4	54	1	58	2	55
60 ,, 70	5	64	..	..	..	..
Total . .	52	32	28	26	5	41

Out of 52 deaths in the year, 41 of the deceased attained an age of 25. The average age of the 33 who died of lung diseases was 28.

It is not doubted by medical witnesses that in this class of cases, as in the case of the tailors, one-third at least of the healthful duration of adult life will be found to have been destroyed by the ignorance of the want of ventilation.

Unhappily, this fatal ignorance as to the requisites of the places of work is as frequently manifested in the over-crowded places of repose. I take an illustration from the answers of *Mr. Isaac Gilchrist,* surgeon of Aberdeen, to the question as to the causes of fever:—

"In answering this query, the circumstance that calls for most remark in reference to this district is the over-crowded state of dwelling apartments. Six, eight, and even ten occupying one room is anything but uncommon; and these, too, it frequently happens, are lone women, all employed at the manufactories during the day and huddled together during the night. Fever finding its way into any of these apartments, seldom quits it until every member has been attacked. In some instances of families of eight or ten members, not one individual has escaped the disease. I believe also that deficient cleanliness (to a certain extent the result of poverty) and bad ventilation co-operate with the over-crowded state of the apartments in propagating fever."

Similar information is frequent from the metropolis and other districts. It is understood, and it may confidently be expected, that the Commissioners and Assistant Commissioners appointed to investigate the employment of young persons employed in large numbers in other manufactures than those now included in the provisions of the Factory Act will investigate more closely than has hitherto been done the sanitary condition

of the labourers employed in the mines as well as in other branches of industry. I take the following evidence respecting the condition of the lodging-shops, obtained by *Dr. Mitchell,* one of the Assistant Commissioners, in the course of his inquiries into the condition of the labouring population engaged in working the mines in Durham and Northumberland. He gives the following description of their sleeping places:—

"Many of the miners, including young persons and boys, will go three miles and upwards from their own homes in the morning to work in the mines, or to wash the ore, and return again after their work at night. Some miners, who are too far off to be able to go and come in this way, find lodgings for the four nights in the week, and the washers for five nights, at some houses not too far from the mines. The usual price is 6*d.* a-week each, for which sum there is a bed between two of them, leave to make their 'crowdy' on the fire in the morning, and they have their potatoes boiled for them in the evening. They bring their provisions in a wallet on the Monday mornings: the miners go back on the Friday, and the washers of ore on the Saturday. But there are many mines, and some of them very large, in remote situations in the Fells, far away from all dwelling-houses, where lodgings might be had, and the proprietors have erected for their miners and washers buildings called 'lodging-shops,' which I now am about to describe:—

"The first one of them which I visited was about nine miles across the Fell, south from Stanhope. It was a plain building, constructed of sandstone, covered with a coarse slate; and all very substantial. There was no opening or window at either end, nor at the back, nor on the roof. On the front or south side was a door towards the west end, and two windows, one a little above the other. On entering the door, it was seen that the lower part was one room, lighted by one of the windows, and had a great fire burning at the east end. By pacing the floor the length was ascertained to be about 18 feet, and the breadth about 15 feet. Along the one side, that next the window, was a deal table, extending the whole length of the room, and alongside of it was a form, and there were two other forms in the room. All along the other side on the wall were little cupboards, 48 in number, in four tiers above each other; six of the cupboards with the doors off, but the most of the rest carefully locked with padlocks, and in which the several miners had deposited their wallets with their provisions for five days. Throughout the room, more particularly at the end furthest from the fire, were hung from hooks and nails in the joists, miners' trousers and jackets to be put on in case of the owners returning wet from their work.

"In addition to the articles already named were the following:—

"One earthen pitcher to fetch water; one tea-kettle; one pan for boiling potatoes; two pans for frying bacon; iron fender, a poker, and shovel; a besom.

"There was a large box in the room secured by a padlock, said to contain the clothes which the masters put on when they come to see the mines.

"On ascending to the upper room by a ladder, it was seen to be a sleeping-room. The dimensions of the floor were of course the same as of the room below. There was no fire-place, which indeed was not

wanted, but neither was there any opening into a chimney to produce circulation of air. Along one side of the room were three beds, each six feet long by about four feet and a-half wide, the three beds extending the length of the room; then there were three other beds on the other side, and at the furthest end was a seventh bed extending from the one line of beds to the other. Immediately over these seven beds, and supported on posts, were seven other beds placed exactly in the same way. Of course the person who slept in each of the six beds of the upper tier next the wall could raise his head only a very little way on account of the roof. Each of these 14 beds was intended for two persons, when only few men were employed at the mines, but they might be made to receive three men each, and, in case of need, a boy might lie across at their feet. There was no opening of any sort to let out the foul air, yet from 39 to 40 persons might have slept there, the men perspiring from their work and inhaling the small dust from their clothes floating in clouds. The beds were stuffed with chaff. There were blankets but no sheets. The furniture of the lodging-shops is supplied by the masters. The beds and blankets are supplied by the miners themselves. They are taken home sometimes to be washed. On Friday, when the miners leave, the beds are rolled up to prevent damp. I visited the lodging-shop on Monday morning. The beds had not been slept in for Friday, Saturday, and Sunday nights preceding, yet was the smell most noxious. There was one excellent thing connected with this lodging-shop: there was a small but beautiful stream of water which was conducted across the Fell to this spot, and came through an iron pipe near the door, so that the men had an abundant supply of the pure element. I next went to see another lodging-shop on a larger scale. On the ground-floor were five rooms. The first is a blacksmith's shop. Next to it is the cooking and eating-room of the washers of ore; from 20 to 30 men and boys, if so many, were employed. It was locked up, and I did not see it. The upper room, extended over the blacksmith's shop and the cooking room, is the sleeping-room of the washers, men and boys. The next room on the ground-floor is a cooking and eating-room of the miners, exactly like the room of the lodging-shop already described. Adjoining to it is a room in which they hang up their wet clothes. At the end is a stable for the horses which are employed to draw the waggons with ore from the pits. By a ladder close to the wall between the cooking-room and drying-room is an ascent to a room exactly like that in the lodging-house already described, with the same number of beds. One little pipe of about two inches diameter was the only communication with the exterior air. Through the partition wall is an opening into a bed-room, extending over the drying-room and the stable. Across this room extended two beds, leaving a space for passing. Above these two was a tier of other two beds: then at a short interval was a second set of beds, four in number; and further on, a third set similarly arranged, four in number. Thus in the space above the cooking-room, drying-room, and stable, were 26 beds, each intended for two or three men, as it might be, and perhaps more; and the same beds for sets of miners in their turns, as one set came from their work and another went off.

"Though the beds had not been occupied for the three preceding nights, the smell was to me utterly intolerable. What the place must be in the summer nights is, happily for those who have never felt it, utterly inconceivable. The medical men are best able to give a judgment on these matters, but for my own part I cannot but believe that these lodging-houses are more destructive than the air of the mines. I should think it no hardship to have to remain 24 hours in a mine, but I should be terrified at being ordered to be shut up a quarter of an hour in the bed-room of a lodging-shop.

"Many miners speak of the horrors of lodging-shops of former days; but the only difference I could learn was, that at many mines there were not now so many men and boys at work, and consequently the lodging-shops were not so crowded. Some mines are not now wrought which formerly had large lodging-shops; for example, Mannergill, of which a miner stated to me that he was one of 120 who lodged in a suite of rooms there; and he declared that the nuisance was much aggravated by the great number.

"In such a dense accumulation of bodies, one man who might be ill was a disturbance to all the rest. The coughing of a few interrupted the sleep of others. Men coming from the mine at 12 o'clock at night, and frying their bacon at the fire below, sent up an odour which added to the already too suffocating smell of the sleeping-room above. The great number was an aggravation of what is intolerable at best.

"The miners showed me a tank through which running water passed, in which they had placed their bottles of milk which they had brought with them for their coffee.

"There was an excellent supply of running water of the best quality, and it was the only beverage which the men had; for they stated that there was no public-house or beer-shop nearer than seven miles, and if there were one, they durst not go into it for fear of being discharged.

"The men all said that their lodging-shop was a fair sample of all the lodging-shops in the country, the only difference being the greater or less number of men lodging in them, which would depend entirely on the state of the mine. I have, however, since seen one refinement of which these men did not seem to be aware, and that was a lodging-shop in which were not only the beds in tiers all round the room, but there also was a bed suspended or swung from the top of the room, which economically filled up a space which otherwise would have been vacant."

The following is the account given by a miner himself of the lodging-places:—

William Eddy, one of the miners, states;—

"I went to work in Greenside four years. Our lodging-rooms were such as not to be fit for a swine to live in. In one house there was 16 bedsteads in the room up stairs, and 50 occupied these beds at the same time. We could not always get all in together, but we got in when we could. Often three at a time in the bed, and one at the foot. I have several times had to get out of bed, and sit up all night to make room for my little brothers, who were there as washers. There was not a single flag or board on the lower floor, and there were pools of water 12 inches deep. You might have taken a coal-rake and raked off the dirt and potatoe peelings six inches deep. At one time we had not a single coal. After I had been there two years, rules were laid down, and two men were appointed by the master to clean the house up stairs twice a-week.

The lower apartment was to be cleaned twice a-day. Then the shop floor was boarded, and two tables were placed in the shop. After that two more shops were fitted up, but the increase of workmen more than kept up with the increased accommodation. The breathing at night when all were in bed was dreadful. The workmen received more harm from the sleeping-places than from the work. There was one pane of glass which we could open, but it was close to a bed-head.

"The mines at Greenside were well ventilated, and in that respect there was nothing to complain of.

"In the winter time the icicles came through the roof, and within 12 inches of the people sleeping in bed. During a thaw, water dropped plentifully into the beds. In the upper beds the person sleeping next to the wall cannot raise his head or change his shirt."

Joseph Eddy, another workman, states:—

"I consider the lodging-shops more injurious to the health of the miners than their work itself. So many sleeping in the same room, so many breaths, so much stour arising from their working-clothes, so much perspiration from the men themselves, it is impossible to be comfortable. Two miners occupy one bed, sometimes three. The beds are shaken once a-week on the Monday morning, when the miners come. Some miners make their beds every night. The rooms are in general very dirty, being never washed, and very seldom swept, not over once a-month. There is no ventilation, so that the air is very close at night."

It is observed of this particular class of men that they are worn out soon after forty; but a large share of this result may also be ascribed to their places of work. The following is a return of the ages of all the miners who died during one year, including those who slept at their own homes, with those who had been accustomed to sleep at the lodging-shops.

STATEMENT of Deaths from Disease and Accidents of Miners, Colliers, and Pitmen, in the Unions of Cumberland and Westmoreland, and parts of the Counties of Lancaster and Northumberland (Population Census of 1831, 338,273), during the Year ended 31st December, 1839, as shown by the Mortuary Registers.

Periods of Age.	Number of Deaths.	Average. Age.
Under 20	37	15
20 ,, 30	39	23
30 ,, 40	27	33
40 ,, 50	27	44
50 ,, 60	23	55
60 ,, 70	32	64
70 ,, 80	17	75
80 and upwards	10	86
Total deaths .	212	42

The following is a summary view of the causes of death, from which it will be seen that out of 212 deaths 69 fell from diseases of the respiratory organs, and of these 52 died from consumption, whose average age of death was no more than 36½, and that no less than 58 were destroyed by accidents.

STATEMENT of the Causes of Death amongst Miners in the Unions of Cumberland and Westmoreland and parts of the Counties of Lancaster and Northumberland, during the Year ended 31st December, 1839, as shown by the Mortuary Registers.

Cause of Death.	No. of Deaths.	Cause of Death.	No. of Deaths.
Disease of Respiratory Organs:—		Diseases of the Brain and Nerves	12
Consumption . .	52	Diseases of the Digestive Organs	10
Other Diseases .	17	Disease of the Heart . .	2
Epidemic and Contagious Disease	20	Other Causes of Disease .	22
Accidents:—		Natural Decay and Old Age	19
In Mine	37		
Not stated to be in Mine	21		
Total Deaths . . . 212			

In a subsequent portion of this report I shall advert to the state of the health of the miners in Cornwall, as compared by Dr. Barham with the state of the agricultural labourers in the immediate vicinity of the mines.

I would here request attention to a suggestion which appears to me to arise from a consideration of the evils above displayed, (and that will receive further corroboration in the course of this report,) that if there were a regular system of periodical inspection of the places of work or places of large assemblage, it would be attended with great advantage to the lower orders of the community, in which the other classes could not fail to participate.

One most important result of such investigations would be to disabuse the popular mind of much prejudice against particular branches of industry arising from the belief that causes of ill health really *accidental* and removable, and sometimes unconnected, are *essentials* to the employment itself. By pointing out the real causes, warning will be given for their avoidance, and indications extended for the application of more certain remedies. Medical men who see only a few patients of the same occupation at distant intervals; who see them in their own dispensaries or in the hospitals, and who have no opportunities of observing such patients under the varied circumstances in which the disease may have been contracted, are left to mere guesses as to its cause. A working person of any of the classes whose condition I have described, presenting himself with the symptoms of a consumption, the medical man has no means of detecting *the* one of many

causes by which it may have been occasioned, and the individual patient himself is more likely to mislead than to inform him. Unless his attention were accidentally directed to it, or unless the medical investigator had himself the means of observing the different personal condition of the different sets of persons following the same occupation in town and in country, it is highly probable that the evidence that the disease is not essential to the occupation would escape him. Thus, between different sets of workmen who work at the same descriptions of work during the same hours, and in the same town, but in well or in ill-ventilated factories a marked difference in the personal condition and general health of the workpeople has been perceived. Great differences are perceptible in the general personal condition of persons working during the same hours in cotton-mills in town, and in cotton-mills in rural districts, where they have not only a purer atmosphere, but commonly larger and more commodious places of abode. The factory superintendents generally state that the workers in the country mills are distinguishable at sight by their more healthy appearance, and by the increased proportions amongst them who have florid complexions. Very lately the attention of the Austrian government was called to the labour of the persons working in the cotton-factories in the neighbourhood of Vienna.* One half, perhaps, of the mills are of the ordinary construction of the cotton-mills in England of from thirty to forty years' date, and they work on the average as much as fifteen hours per diem. But it appears that the houses in which the workers live belong to the capitalists who own the mills, many of whom have displayed a desire to ensure, as far as the state of the private residences can ensure, the comfort of those whom they employ, and they have accordingly built for them a superior description of tenements. It is stated that the result of the inquiry conducted by the government physicians was, that the average health enjoyed by the workers in those mills is greater than that of any other class of workpeople in the neighbourhood where the mills are situate, and where the general condition of the population is deemed good; the difference in the general health of the two classes (indicated by the proportions of death—of 1 in 27 of the general population, and 1 in 31 of the manufacturing population), was ascribed to the difference of the residences. My colleagues and myself of the central board of the Factory Commission of Inquiry were fully sensible that the effect of one cause on the health of the working population could not fairly be judged of unless its operation was observed under various circumstances, and unless amongst them the influence of the domestic circumstances, as well as the nature of the work and the place of work, were duly examined. We could not but deem it important that the state of the dwellings of the workpeople, who were the subject of inquiry, should also be investigated; and we gave instructions

* Vide extracts from the official report in the Appendix.

with that view to the district medical commissioners; but the limited time allowed by Parliament for the investigation, prevented its being made as we desired, a circumstance that, for the sake of the workpeople, is much to be regretted, as great injury is done to them by attention being diverted, as it commonly has been, from the real means of prevention.*

M. Parent Du Châtelet and M. d'Arcet having presented to the Board of Health of Paris a report on an investigation with a view to discover the physical or medical means by which particular sorts of work might be ameliorated, observe—

"Perhaps it will be said that the task has been already performed, and that several celebrated men, whose works are in the hands of all the world, have preceded us in this career, without leaving to their successors the hope to add anything to what they have published.

"We are assured beforehand that this objection will not be made by our colleagues, who have penetrated into manufactures and have studied their influence with a mind free from prejudice. It is because we have studied the works which treat of the maladies of artisans, and have seen a great number of these workmen in their shops; it is because we have compared books with actual observation; it is, finally, because we have not believed authors on their word, and have subjected them all to a severe verification, that we have seen the insufficiency, nay more, the inaccuracy of the greater part of their assertions.

"This method of proceeding has demonstrated to us that the works of which we speak, far from being the fruit of long observation, have been composed in the silence of the cabinet by men who have only had a casual view of artisans and manufactures; and who, generalizing a few facts presented to them by accident, have singularly exaggerated the inconveniencies of some professions, and attributed to others influences which they are far from exercising."—*Mémoire sur les Veritables Influences du Tabac sur la Santé des Ouvriers.* Par M. Parent Du Châtelet.

They give, as an illustration, the exaggerated accounts of the manufacture of tobacco, of which the supposed evils are proved to

* The following were the terms of our instructions to the district medical commissioners of inquiry:—"A given amount of evil is experienced by a class placed under peculiar circumstances; a large portion of that evil is shared by other classes not under these peculiar circumstances; to attribute the whole of the evil experienced by the first class to those peculiar circumstances is obviously fallacious. It is conceived that it is only by investigating the subject with this precaution constantly in the mind that it is possible to arrive at a just conclusion. While you carefully observe the effects of labour on the children and the adult workpeople, and report every case in which you conceive it to be excessive, and state the reasons on which you ground that opinion, you are requested to investigate minutely the concurrent causes of ill health. With this view you are requested in every case to examine and report the state of the drains in and about the factory: the state of the neighbourhood of the factory as to dryness or dampness, cleanliness or filthiness: the state of the houses and neighbourhood in which the children and adult workpeople take their meals and exercise (if they leave the factory), and where they sleep: the state of the air within the factory, and which the workpeople usually respire, whether it be fresh or whether it be not fresh, owing to deficient ventilation, —whether it be pure, or whether it be rendered impure by effluvia floating in it, and if so, what the effluvia are: what organs of the body are likely to be injured, and what, from careful examination, you find to be actually injured: the temperature of the air, the highest, the lowest, and the average temperature, and the condition of the air as to dryness or moisture."

be entirely fictitious, or at best an erroneous application to the manufacture,—of effects which, though incidentally met with in the workmen, were equally common to others of their station. In an abstract of their paper, inserted in the Appendix, there is even an enumeration, by eminent physicians, of specific cases of death from the fancied agency of tobacco, but they only show the extent of error produced in this and kindred instances by the previous conviction of the noxious influence of particular circumstances, and by referring all existing maladies to these without further inquiry. If I might add my testimony on this point, derived from my own observations on two of the commissions of inquiry on which I have had the honour to serve, it would be entirely in corroboration of the above statement. On comparing the actual condition of workmen with the medical descriptions of these diseases, and the causes, we commonly found that the results of a cluster of causes are commonly ascribed to one; and in respect to several classes of workmen the real cause, the invariable antecedent, such as defective ventilation, is unnoticed. No persons were frequently more surprised than the intelligent workmen, by the frequent exaggerated accounts of the operations of particular causes upon them, and the erroneous association of effects to causes with which they were known to have no real connexion. For example, in the work of M. Patissier, one which is the chief work, and of European authority, on the diseases of artisans, he adverts to the diseases of tailors. His description was read to *Mr. Brownlow*, the tailor, examined upon the subject of the overcrowding of places of work, and the observations of that witness on the statement of M. Patissier are given in answer:—

M. Patissier. "The employment of tailor is one of the most sedentary: seated constantly on a board, his legs crossed, his body stooping forward, this class of labourers exercises not part of the body but the arms, and that only the right one."

Witness. "That is not so: there is a good deal of action with the left arm in holding and sewing: in using the iron also there is a good deal of action with the arms and knees, and with the rest of the body. Journeymen tailors are remarked as being full breasted, as compared with other workmen; they carry themselves higher, and the chest is more fully developed; so that the labour has, as compared with much other labour, the effect of opening the chest."

M. Patissier. "Their position is particularly injurious to the functions of the viscera of the abdomen and chest. It produces difficulty of digestion, injures the gastric juices, brings on constipation, hemorrhoides, chronic catarrhs of the bladder, and obstructions of the bowels."

Witness. "I have never heard complaints beginning with the bowels. The stomach may be out of order; they eat very little solid food, and of course the action of the bowels will not be very good; but as to the effect of the tailors' work on the chest, we do not consider it at all injurious."

M. Patissier. "I attended a tailor who every time that he applied himself diligently to his work, was attacked with nausea, colic, jaundice,

and symptoms that denoted irritation of the liver. I have known, says Stoll, a great number of tailors who have suffered more particularly from diseases of the lungs."

Witness. "The only complaints I have ever heard are those arising from the foul air, perhaps the dust arising from cloth is injurious. I have already said that men coming from the country to a town shop will faint, and be obliged to leave it in the afternoon."

M. Patissier "As they are almost constantly in a sitting posture, the body bent, with the head stooping forward, the blood is unequally distributed, and too large a quantity accumulates in the lungs, either because the bowels of the abdomen, compressed by the position of the body, admit of less blood, and which is therefore forced back into the vessels situated above, or because the short respirations of those who are sedentary, prevents the blood which enters the lungs from passing out with sufficient rapidity, by which local plethora in the heart and lungs is produced. In short, tailors are very liable to pulmonary phthisis, hydro-thorax, and hæmoptysis, which often accompanies them to a very advanced age. M. Corvisart has observed that diseases of the heart and of the larger vessels are not less frequent amongst this class of artisans. As the posture of the tailor causes the blood to flow into the upper part of the body, the circulation in the lower members is consequently much less active, which explains the emaciation and feebleness of the legs and thighs of this class of artisans, and the peculiar walk which distinguishes them."

Witness. "As to the circulation of the blood, I should say that it was more free than amongst persons sitting at a desk; as soon as the journeyman tailor begins to feel warm and swell, he loosens everything that he has on; his coat is off, and his shirt neck is open; if he wears a handkerchief it is very loose; a tailor wears no garters, nothing that can stop the circulation of the blood: the only confinement that arises is from the position, which is certainly sedentary, but he frequently changes it, and puts one leg over the other when they are tired; they also stretch their legs out. Their breathing even in the close shops is not noticed as short."

M. Patissier. "Ramazzini says they are very subject to numbness of the thighs, neuralgic sciatica, and lameness."

Witness. "The tailors are frequently subject to rheumatism, but that is from going from a hot to the cold open air in the way described. Men who are generally emaciated will have their legs emaciated too: the whole frame goes together, but I have never heard young men or tailors in the middle of life being remarked as deficient in that part of bodily capability. Those whom I have known to be emaciated have been spirit drinkers; the emaciation has been more from spirit-drinking than from the heat of the shop, though one brings on the other. Some years ago there used to be much racing at about five o'clock in the morning in the parks, sometimes amongst the tailors themselves, and sometimes with other runners who had celebrity. The tailors were generally good competitors and more active than other workmen in London. There was one of the country tailors at Faversham who some years ago was considered the first runner in England for a hundred yards. The tailors have certainly a peculiar walk, but all whom I have known to be lame were lame originally. When a lad has anything the matter with him, which occasions him not to be strong enough for anything working on his feet, it is a common thing to say, 'Then we must

make him a tailor.' It is a very frequent thing to send weakly children to be tailors, though it is a bad choice, for the lad has little chance of recovering himself in the town shops, and a more open trade would be better for him. Many tailors go for sailors and soldiers, and they are always thought to be good men. I should think there are many tailors in the guards."

M. Patissier. "There is sometimes to be observed on the surface of their skin a psoriform eruption, which by some writers is ascribed to the irritation of the woollen cloth which these artisans are continually handling. Guldner, however, considers that this eruption is produced by their mode of living."

Witness. "I never saw or heard of any peculiar eruption on the skin of the tailors, though they perhaps do not attend sufficiently to personal cleanliness. The dye of cloth is sometimes bad, but I never observed any effects from it."

M. Patissier. "Tailors are apt to prick themselves with their needles, and these wounds often bring on festerings."

Witness. "That is certainly the case; the needle may carry with it some of the dye, and the festering may also be occasioned by the bad state of the body."

M. Patissier. "They almost all have decayed teeth, which are destroyed by the habit of biting their thread with them. It is very rare to see a tailor of advanced age with any front teeth."

Witness. "That is certainly so: they have many of them bad teeth, but I have not noticed any deficiency of the front teeth."

M. Patissier. "Their sight is soon enfeebled by the fine work which they have to execute, often at night by the light of candles. When they work in the evening at open windows, they are liable to be affected by ear-ache, tooth-ache, cold in the head, and sore eyes."

Witness. "That is very correct with respect to the tailors in town, but it is not noticed so much with tailors in the country."

M. Patissier. "The sedentary life which they lead produces heavy, soft flesh, that has no firmness; they generally are thin in body, legs are spare and feeble, and their complexion rather jaundiced."

Witness. "Almost all this will be found to be the effect of habits that have nothing to do with the trade."

M. Patissier. "Tailors ought to walk in the open air every evening when their work will admit of it, rub their limbs well with flannel, abstain from all food difficult of digestion, avoid all excesses, and generally every kind of debauchery."

Witness. "The men when they leave their shop-boards do not begin rubbing their legs, and do not appear to feel the least want of it. The appetites of men working in shops being bad, they do commonly take food that is easy of digestion, as they cannot do with the coarser food. When a tailor comes from the country he will eat a twopenny loaf and take a pint of coffee for breakfast; but after three or four months working in the close shop getting exhausted, then taking beer and then spirits, his appetite fails him, and I have seen him eat only a small slice of bread and butter, and take half a pint of coffee for breakfast, and his appetite generally fails him. The young men on going back to their work in the country, generally recover their appetites unless disease has taken such root that they cannot recover."

The evidence of Mr. Brownlow was read to Dr. Weber, who

has had under his care between 200 and 300 cases of journeymen tailors who were treated by him, as physician to the St. George's Dispensary, which is much resorted to by those of that class of workmen who reside at the west end of the metropolis. Dr. Weber confirms the general tenor of the evidence as to the medical facts, and especially the general conclusion that the greatest proportion of the diseases to which they are subject arise from circumstances separable from their occupation. The evidence as to the personal condition and habits of the workmen is generally corroborated by several master tailors, who state that the journeyman tailor in the rural district who works singly, or in a well-ventilated apartment, is in person commonly the opposite of the one described by M. Patissier; he is described as being a hard worker, but at times a man who is in most village foot races, and not unfrequently the foremost runner, and in games of foot-ball not the last. The journeymen tailors are found amongst the best men in the life guards. In consequence of a strike of tailors, one dragoon regiment had a troop chiefly enlisted from them, and military men state that they greatly distinguished themselves.

If we thus find the crowding of unventilated places of work injurious—in which persons rarely pass more than 12 out of the 24 hours, being free during the remaining time to breathe what air they please—how much worse should we expect the consequences to be of the same fault in workhouses, hospitals, schools, and prisons, in which individuals often pass both day and night in the same apartments, or if in different apartments, still in the same crowd. Accordingly, since the attention of medical men has been sufficiently directed to the subject, the explanation has become complete of many deplorable cases of general ill health and mortality in such places, attributed at first to deficiency or bad quality of food, or to any cause but the true one,—want of ventilation. A striking illustration of this was afforded in the case of a large school for children during the years 1836 and 1837, as recorded in the second volume of the Poor Law Reports. Such general failure of health and such mortality had occurred among the children as to attract public notice and the animadversions of many medical men and others who visited the schools; but by most the evil was attributed chiefly to faulty nourishment; and it was only after the more complete examination, made by direction of the board, and of which the report is published, as above stated, that the diet was found to be unusually good, but the ventilation very imperfect. Suitable changes were then made; and now, in the same space where 700 children were by illness awakening extensive sympathy, 1100 now enjoy excellent health. The defective state of information on the subject of ventilation is frequently shown in reports which assume that apartments containing given cubic feet of space are all that is requisite for life and health, whereas if a spacious drawing-room be completely closed against the admission of air, an inhabitant confined to it would in time be stifled,

whilst, by active ventilation or change of air, men working in connexion with diving-machines live in the space of a helmet, which merely confines the head.

In the majority of instances of the defective ventilation of schools, the pallid countenance and delicate health of the schoolboy, which is commonly laid to the account of over-application to his book, is due simply to the defective construction of the schoolroom. In the dame schools, and the schools for the labouring classes, the defective ventilation is the most frequent and mischievous.

Mr. Riddall Wood, an agent of the Manchester Statistical Society, thus describes some of the crowded schools found in the course of examinations, from house to house, of the condition of the town population in Manchester, Liverpool, Leeds, Hull, and York :—

"I may mention that in one school where the average attendance was, I think, 36, not above eight children were present. Upon my inquiring of the mistress as to the reason, she stated that the remainder of her scholars had been taken with the measles. I perceived a bed in the school-room, upon which lay a child much disfigured by that complaint. Another child of the mistress had died of the measles. I had reason to believe that the contagion had been communicated originally from that child, because the cases of the scholars all occurred subsequently. In a school in Liverpool, having above 40 scholars in average attendance, I found the number diminished to somewhere about 10. On inquiring into this case, I ascertained that it arose from tne prevalence of scarlet fever, and the master made this remark: 'It is a very strange thing how this fever should have attacked almost all the children coming to my school, whilst none of my neighbours have got it.' I attributed that to the very crowded state of the school. The room was very low. When the whole of his scholars were in attendance, it must have been excessively crowded. There was no thorough ventilation.

"I found that in many of the schools there were from 20 to (in some cases) nearly 100 scholars crammed into a dirty house or cellar, without air or ventilation, the effluvia from whose breath and clothes was exceedingly offensive, and must, I am sure, be very injurious to the children's health. In most of these places, too, I have found that the ordinary household occupations have been carried on by the old women."

Another inquirer states, that in the neighbourhood of Bolton he saw 70 scholars cooped up in a badly ventilated room not 12 feet square.

Bad ventilation and overcrowding of private houses.

The reports from the great majority of the new unions present evidence of the severe overcrowding of the cottages in the rural districts, and the tenements occupied by the working classes in towns.

From the returns as laid before the public from the commissioners appointed to take the last census, it would appear, however, that the number of houses has more than kept pace with the increase of the population.

From these returns it would appear that the increase of houses even in Scotland has more than kept pace with the increase of

population. But this result was so much at variance with the reports and communications from all parts of the country relating to the dwellings of the labouring classes, that if any increase of the proportions of houses to the population had taken place, it must have been in the houses of the middle and higher classes of the community. I learn, however, the fact to be, that whilst in obtaining the previous census, merely the heading was given without any instruction for the officer to fill up the "number of houses;" on the occasion of taking the last census, the commissioners ordered each separate occupation under the same roof to be returned as a house. In the Scotch towns, and in many of the English towns where it is the custom to let off as separate tenements the flats or floors under the same roof, there will, unless it be explained, appear to have been, as compared with the numbers in the last census, when the buildings and not its subdivisions were returned, an increase of accommodation, when, in reality, there may only have been an increased subdivision of tenements in consequence of an increased pressure of population. The evidence received from every part of the country, from rural districts as well as from towns, attest that the dwellings of large numbers of the labouring population are overcrowded, and from many districts that the overcrowding has increased.

For example, the report of *Dr. Laurie* from Greenock states, that such is the crowding of the population in the town that—

"Toward the east or old part of the town the amount of population crowded into a small space can hardly be credited, the rapid increase of the population has so far overstepped the means of accommodation that not the meanest outhouse remains without its tenants."

Dr. Walker, one of the senior surgeons to the Greenock Infirmary, also states that,—

"The rooms are in most instances small, and frequently far too much crowded. It is not unusual to see ten or twelve human beings occupying a room not as many feet square. The lower classes in these districts are grossly filthy in their persons and dwellings; and even many of our operatives who receive good wages are extremely inattentive to cleanliness, both in person and dwelling."

In a paper on the causes of destitution in Scotland, by *Professor Alison*, read before the Statistical Society of London, it is stated that—

"From a report on the late census, made to the Lord Provost of Glasgow by Mr. Strang, Chamberlain, (19th July, 1841,) it appears that in the most densely peopled part of the town, (Blackfriars' parish,) the population since 1831 has increased 40 per cent., while the number of inhabited houses has not increased at all; and again, in the Gorbals, 'there is an increase in the population of 20 per cent. since 1831,' though no new buildings have been erected, and where the great majority of the houses are of the smallest class."—(Watt's Report, p. 11.)

Dr. Scott Alison in his report on Tranent, states,—

"In many houses in and around Tranent, fowls roost on the rafters

and on the tops of the bedsteads. The effluvia in these houses are offensive, and must prove very unwholesome. It is scarcely necessary to say that these houses are very filthy. They swarm likewise with fleas. Dogs live in the interior of the lowest houses, and must, of course, be opposed to cleanliness. I have seen horses in two houses in Tranent inhabiting the same apartment with numerous families. One was in Dow's Bounds. Several of the family were ill of typhus fever, and I remember the horse stood at the back of the bed. In this case the stench was dreadful. In addition to the horse there were fowls, and I think the family was not under ten souls. The father died of typhus on this occasion. The families of most of the labouring people are crowded, in consequence of the smallness of the apartment. Where there are many children, it is common for 10 or 12 people to inhabit one apartment, and for four children to lie in one bed, both in health and sickness. When a collier has few or no children, he sometimes takes single men and women as lodgers."

Dr. Keith says the—

"Crowding is fearful. I have seen six or eight sleeping in one apartment, with every crevice stopped, and have more than once been nearly suffocated by entering the apartment even after several of them were up and out."

As the information sought from the medical officers and witnesses in the course of this inquiry was chiefly as to the sanitary condition of the population, they might naturally be expected only to notice the overcrowding as one of the causes of ill health; and they do frequently notice the fact in that sense; but the overcrowding is also frequently noticed as a cause of extreme demoralization and recklessness, and recklessness, again, as a cause of disease. The following may be given as examples of the statements in respect to overcrowding in the rural districts in England.

Mr. T. P. J. Grantham, medical officer of the Sleaford union, in reference to the typhus fever in the family of an agricultural labourer, gives the following instance of the overcrowding which is frequent in the rural districts:—

"The domestic economy in this house was deplorable; eight persons slept in one small ill-ventilated apartment, with scarcely any bed-clothing; the smell arising from want of cleanliness, and the dirty clothes of the children being allowed to accumulate, was most intolerable. Considering the situation of the house, its filthy state, and the vitiated air which must have been respired over and over again, by eight individuals sleeping in one confined apartment, it is not surprising that this family should have been afflicted with fever, and that of a very malignant type; the mother and one child fell victims to it in a very short time."

The want of separate apartments, and overcrowding of private dwellings.

The following extract from a communication from the clerk to the Ampthill union, pourtrays the effects of this overcrowding on the morals of the population.

"A large proportion of the cottages in the Union are very miserable places, small and inconvenient, in which it is impossible to keep up

even the common decencies of life. I will refer to one instance with which I am well acquainted:—A man, his wife, and family, consisting in all of 11 individuals, resided in a cottage containing only two rooms. The man, his wife, and four children, sometimes five, slept in one of the rooms, and in one bed, some at the foot, others at the top, one a girl above 14, another a boy above 12, the rest younger. The other part of the family slept in one bed in the keeping-room, that is, the room in which their cooking, washing, and eating were performed. How could it be otherwise with this family than that they should be sunk into a most deplorable state of degradation and depravity? This, it may be said, is an extreme case, but there are many similar, and a very great number that make near approaches to it. To pursue a further account of this family: the man is reported to be a good labourer, the cottage he held was recently pulled down, and being unable to procure another, he was forced to come into the workhouse. After being in a short time, they left to try again to get a home, but again failed. The man then absconded, and the family returned to the workhouse. The eldest, a female, has had a bastard child, and another, younger, also a female but grown up, has recently been sentenced to transportation for stealing in a dwelling house. The family, when they came in, were observed to be of grossly filthy habits and of disgusting behaviour; I am glad to say, however, that their general conduct and appearance is very much improved since they have become inmates of the workhouse. I without scruple express my opinion that their degraded moral state is mainly attributable to the wretched way in which they have lived and herded together as previously described. I have been thus particular in my account of this family, knowing it to be a type of many others, and intending it to apply to that part of your letter inquiring respecting the comparative character of the female inmates and children of the two descriptions of cottages in question."

The *relieving officer* of the Leighton Buzzard union states that, in Leighton,—

"There are a number of cottages without sleeping-rooms separate from the day-rooms, and frequently three or four families are found occupying the same bed-room, and young men and women promiscuously sleeping in the same apartment."

Mr. Blick, the medical officer of the Bicester union, states that:

"The residences of the poor in that part of the district are most wretched, the majority consisting of only one room below and one above, in which a family of eight or ten (upon an average, I should say five), live and sleep. In one of these rooms I have witnessed a father, mother, three grown-up sons, a daughter, and a child, lying at the same time with typhus fever: but few of the adjacent residents escaped the infection."

Mr. L. O. Fox, the medical officer of the Romsey union, states:—

"There is not only a great want of cottages, but also of room in those which now stand. In the parish of Mottisfont I have known 14 individuals of one family together in a small room, the mother being in labour at the time, and in the adjoining room seven other persons sleeping, making 21 persons, in a space which should be occupied by

six persons only at most. Here are the young woman and young man of 18 or 20 years of age lying alongside of the father and mother, and the latter actually in labour. It will be asked what is the condition of the inmates?—Just such as might be expected."

Dr. Gilly, the canon of Durham, whose appeal on behalf of the border peasantry, and description of the sheds into which they are placed have been cited, observes, upon the crowding of these small places, 24 feet by 16, with 8, 10, or even 12 persons:—

"How they lie down to rest, how they sleep, how they can preserve common decency, how unutterable horrors are avoided, is beyond all conception. The case is aggravated when there is a young woman to be lodged in this confined space who is not a member of the family, but is hired to do the field-work, for which every hind is bound to provide a female. It shocks every feeling of propriety to think that in a room, and within such a space as I have been describing, civilized beings should be herding together without a decent separation of age and sex. So long as the agricultural system in this district requires the hind to find room for a fellow-servant of the other sex in his cabin, the least that morality and decency can demand is that he should have a second apartment where the unmarried female and those of a tender age should sleep apart from him and his wife. Last Whitsuntide, when the annual lettings were taking place, a hind, who had lived one year in the hovel he was about to quit, called to say farewell, and to thank me for some trifling kindness I had been able to show him. He was a fine tall man of about 45, a fair specimen of the frank, sensible, well-spoken, well-informed Northumbrian peasantry—of that peasantry of which a militia regiment was composed, which so amazed the Londoners (when it was garrisoned in the capital many years ago) by the size, the noble deportment, the soldier-like bearing, and the good conduct of the men. I thought this a good opportunity of asking some questions. Where was he going? and how would he dispose of his large family (eleven in number)? He told me they were to inhabit one of these hind's cottages, whose narrow dimensions were less than 24 feet by 15, and that the eleven would have only three beds to sleep on; that he himself, his wife, a daughter of 6, and a boy of 4 years old, would sleep in one bed; that a daughter of 18, a son of 12, a son of 10, and a daughter of 8 would have a second bed; and a third would receive his three sons of the age of 20, 16, and 14. 'Pray,' said I, 'do you not think that this is a very improper way of disposing of your family?' 'Yes, certainly,' was the answer; 'it is very improper in a Christian point of view; but what can we do until they build us better houses.'"

Mr. Riddall Wood was examined as to the effects of overcrowded tenements on the moral habits observed in the course of his visits from house to house in the various towns he was engaged to examine:—

"In what towns did you find instances of the greatest crowding of the habitations?—In Manchester, Liverpool, Ashton-under-Lyne, and Pendleton. In a cellar in Pendleton, I recollect there were three beds in the two apartments of which the habitation consisted, but having no door between them, in one of which a man and his wife slept; in another, a man, his wife and child; and in a third two unmarried

females. In Hull I have met with cases somewhat similar. A mother about 50 years of age, and her son I should think 25, at all events above 21, sleeping in the same bed, and a lodger in the same room. I have two or three instances in Hull in which a mother was sleeping with her grown up son, and in most cases there were other persons sleeping in the same room, in another bed. In a cellar in Liverpool, I found a mother and her grown-up daughters sleeping on a bed of chaff on the ground in one corner of the cellar, and in the other corner three sailors had their bed. I have met with upwards of 40 persons sleeping in the same room, married and single, including, of course, children and several young adult persons of either sex. In Manchester I could enumerate a variety of instances in which I found such promiscuous mixture of the sexes in sleeping-rooms. I may mention one; a man, his wife and child sleeping in one bed; in another bed, two grown up females; and in the same room two young men, unmarried. I have met with instances of a man, his wife, and his wife's sister, sleeping in the same bed together. I have known at least half-a-dozen cases in Manchester in which that has been regularly practised, the unmarried sister being an adult.

"In the course of your own inquiry, how many instances, if you were to look over your Notes, of persons of different sexes sleeping promiscuously, do you think you met with?—I think I am speaking within bounds when I say I have amongst my memoranda above 100 cases, including, of course, cases of persons of different sexes sleeping in the same room.

"Was it so common as to be in nowise deemed extraordinary or culpable amongst that class of persons?—It seemed not to be thought of. As a proof of this I may mention one circumstance which just occurs to me:—Early in my visitation of Pendleton, I called at the dwelling of a person whose sons worked with himself in a colliery. It was in the afternoon, when a young man, one of the sons, came down stairs in his shirt and stood before the fire where a very decently-dressed young female was sitting. The son asked his mother for a clean shirt, and on its being given to him, very deliberately threw off the shirt he had on, and after warming the clean one, put it on. In another dwelling in Pendleton, a young girl 18 years of age, sat by the fire in her chemise during the whole time of my visit. Both these were houses of working people (colliers), and not by any means of ill-fame.

"During your inquiries were you able to observe any further demoralization attendant upon these circumstances?—I have frequently met with instances in which the parties themselves have traced their own depravity to these circumstances. As, for example, while I was following out my inquiries in Hull, I found in one room a prostitute, with whom I remonstrated on her course of life, and asked her whether she would not be in a better condition if she were an honest servant instead of living in vice and wretchedness. She admitted she should, and on asking the cause of her being brought to her present condition, she stated that she had lodged with a married sister, and slept in the same bed with her and her husband; that hence improper intercourse took place, and from that she gradually became more and more depraved; and at length was thrown upon the town, because, having lost her character, the town was her only resource. Another female of this

description admitted that her first false step was in consequence of her sleeping in the same room with a married couple. In the instance I have mentioned of the two single women sleeping in the same room with the married people, I have good authority for believing that they were common to the men. In the case which I have mentioned of the two daughters and the woman where I found the sailors, I learned, from the mother's admission, that they were common to the lodgers. In all of these cases the sense of decency was obliterated."

Mr. Baker, in his report on the condition of the labouring classes in Leeds corroborates this statement:—

"In the houses of the working classes, brothers and sisters, and lodgers of both sexes, are found occupying the same sleeping-room with the parents, and consequences occur which humanity shudders to contemplate. It is but three or four years ago since a father and daughter stood at the bar of the Leeds Sessions as criminals, the one in concealing, and the other in being an accessary to concealing, the birth of an illegitimate child, born on the body of the daughter by the father; and now, in November, 1841, one of the Registrars of Leeds has recorded the birth of an illegitimate child born on the body of a young girl, only 16 years of age, who lived with her mother, who cohabited with her lodger, the father of this child, of which the girl had been pregnant five months, when the mother died."

The overcrowding of the tenements of the labouring classes is productive of demoralization in a mode pointed out by *Mr. Barnett,* the clerk to the Nottingham Union, who states—

"That the houses are generally too small to afford a comfortable reception to the family, and the consequence is that the junior members are generally in the streets. Girls and youths destitute of adequate house-room, and freed from parental control, are accustomed to gross immoralities."

Hereafter, when considering the pecuniary means of defraying the expense of sanitary measures, it will be shown how much less of such consequences in most districts than may be supposed is ascribable to absolute poverty or real inability to pay for better accommodation. To obviate even immediate impressions of this description, I might adduce much evidence of the character of the following testimony of *Mr. J. Thomson,* of Clitheroe:—

"What is the number of persons whom you have in your employment?—Men, women, and children, between 900 and 1000.

"Are you the owner of any of the tenements where they reside?—Very few; not more than 12 or 15.

"What description of tenements are they?—Houses with two rooms above, two rooms below, and a yard; and letting at a rent of from 7*l.* to 8*l.* per annum. These are occupied by foremen in various departments, and the better description of artisans.

"What wages do this description of persons earn?—Various, from 30*s.* to 3*l.* weekly; averaging, perhaps, 2*l.* weekly; out of which they pay 3*s.* per week for rent.

"What is your experience in respect to the habits of the workpeople in these tenements?—The remark which I have to make is on the very low state of feeling prevalent amongst even a high class of workmen as to decency or propriety. The tenements sufficed for them when they were young, but when the female children become young women, and the boys advance to puberty, and decency requires them to have separate rooms, the usual practice of the parents is to take the young women into their own sleeping-rooms. I have one highly respectable foreman who has one daughter aged 20, and another aged 22, sleeping on each side of the bed in which himself and his wife sleep. The next bedroom is filled with the younger children of both sexes, boys and girls, up to 16 years of age. The earnings of this family must have been 50*s.* per week. The rent they paid was 3*s.* weekly, which was little more than the interest on the money invested. I have remonstrated on the indecency of such habits, and on their bad effects, but the expense of the extra shilling a-week for a house with another bed-room was considered a sufficient answer to my remonstrance. In my own tenements I have built the additional room, and notwithstanding the remonstrances, I have required the additional rent. When they have remonstrated, I have told them of the fact, that the cost of the additional room would only be a beneficial deduction from the money spent in liquor."

It would require much time and various opportunities of observation to attempt to make an exact analysis of the combined causes, and an estimate of the effect of each separate cause which operate to produce the masses of moral and physical wretchedness met with in the investigation of the condition of the lowest population. But it became evident, in the progress of the inquiry, that several separate circumstances had each its separate moral as well as physical influence. Thus tenements of inferior construction had manifestly an injurious operation on the moral as well as on the sanitary condition, independently of any overcrowding. For example, it appears to be matter of common observation, in the instance of migrant families of workpeople who are obliged to occupy inferior tenements, that their habits soon become "of a piece" with the dwelling. A gentleman who has observed closely the condition of the workpeople in the south of Cheshire and the north of Lancashire, men of similar race and education, working at the same description of work, namely, as cotton-spinners, mill hands, and earning nearly the same amount of wages, states that the workmen of the north of Lancashire are obviously inferior to those in the south of Cheshire, in health and habits of personal cleanliness and general condition. The difference is traced mainly to the circumstance, that the labourers in the north of Lancashire inhabit stone houses of a description that absorb moisture, the dampness of which affects the health, and causes personal uncleanliness, induced by the difficulty of keeping a clean house. The operation of the same deteriorating influences were also observable in Scotland, and it may be illustrated by several instances which I have met with in the course of my own personal inquiries.

One of the circumstances most favourable to the improvement of the condition of an artisan or an agricultural labourer, is his obtaining as a wife a female who has had a good industrial training in the well regulated household of persons of a higher condition. The following instance of the effect of the dwelling itself on the condition of a female servant when married, was brought to my notice by a member of the family in which they had been brought up. One was of a young woman who had been taught the habits of neatness, order, and cleanliness most thoroughly as regards household work.

"Her attention to personal neatness," says a lady who is my informant, "was very great; her face seemed always as if it were just washed, and with her bright hair neatly combed underneath her snow-white cap, a smooth white apron, and her gown and handkerchief carefully put on, she used to look very comely. After a year or two, she married the serving man, who, as he was retained in his situation, was obliged to take a house as near his place as possible. The cottages in the neighbourhood were of the most wretched kind, mere hovels built of rough stones and covered with ragged thatch; there were few even of these, so there was no choice, and they were obliged to be content with the first that was vacant, which was in the most retired situation. After they had been married about two years, I happened to be walking past one of these miserable cottages, and as the door was open, I had the curiosity to enter. I found it was the home of the servant I have been describing. But what a change had come over her! Her face was dirty, and her tangled hair hung over her eyes. Her cap, though of good materials, was ill washed and slovenly put on. Her whole dress, though apparently good and serviceable, was very untidy, and looked dirty and slatternly; everything indeed about her seemed wretched and neglected, (except her little child,) and she appeared very discontented. She seemed aware of the change there must be in her appearance since I had last seen her, for she immediately began to complain of her house. The wet came in at the door of the *only room*, and when it rained, through every part of the roof also, except just over the hearth-stone; large drops fell upon her as she lay in bed, or as she was working at the window: in short, she had found it impossible to keep things in order, so had gradually ceased to make any exertions. Her condition had been borne down by the condition of the house. Then her husband was dissatisfied with his home and with her; his visits became less frequent, and if he had been a day labourer, and there had been a beer-shop or a public-house, the preference of that to his home would have been inevitable, and in the one instance would have presented an example of a multitude of cases.

"She was afterwards, however, removed to a new cottage, which was water-tight, and had some conveniences, and was built close to the road, which her former mistress and all her friends must constantly pass along. She soon resumed, in a great degree, her former good habits, but still there was a little of the *dawdle* left about her; the remains of the dispiritedness caused by her former very unfavourable circumstances."

I visited some other dwellings not far from the one above described, and met with another instance of a female who had been brought up as a servant in a well-ordered house, and who, for her

station, had received a very excellent religious and moral education. Before her marriage she had been distinguished by the refinement with which she sung national airs, and for her knowledge of the Bible and of the doctrines of her church. Her personal condition had become of "a piece" with the wretched stone undrained hovel, with a pigsty before it, in which she had been taken. We found her with rings of dirt about her neck, and turning over with dirty hands Brown's Dictionary, to see whether the newly-elected minister was "sound" in his doctrine. In this case no moral lapse was apparent, but the children were apparently brought up under great disadvantages.

There, however, as in most cases, the internal economy of the houses were primarily affected by the defective internal and surrounding drainage that produced the damp and wet, and thence the dirt against which the inmates had ceased to contend. On inquiry of the male labourers in the district, it appeared that almost every third man was subjected to rheumatism; and with them, it was evident that the prevalence of damp and marsh miasma from the want of drainage, if it did not necessitate, formed a strong temptation to, the use of ardent spirits. With them as with the females, the wretched condition of the tenement formed a strong barrier against personal cleanliness and the use of decent clothes.

In the rural districts the very defects of the cottages which let in the fresh air, in spite of all the efforts of the inmates to exclude it, often obviate the effects of the overcrowding and defective ventilation. It has been observed, that while the labouring population of several districts have had no shelter but huts, similar to those described by Dr. Gilly, as the habitations of the border peasantry, which afforded a free passage for currents of air, they were not subject to fevers, though they were to rheumatism; but when, through the good intentions of the proprietors, such habitations were provided as were deemed more comfortable from excluding the weather effectually, but which, from the neglect of ventilation afforded recesses for stagnating air, and impurities which they had not the means or had not a sufficient love of cleanliness to remove; though rheumatism was excluded, febrile infection was generated. In the towns the access of the wind is impeded by the closeness of the surrounding habitations, and the internal construction of the dwellings tends to exclude the air still more effectually. Were the closed windows opened, it would frequently be only to admit a worse compound, the air from neglected privies, and the miasma from the wet and undrained court or street.

The close pent up air in these abodes has, undoubtedly, a depressing effect on the nervous energies, and this again, with the uneducated, and indeed with many of the educated workpeople, has an effect on the moral habits by acting as a strong and often

irresistible provocative to the use of fermented liquors and ardent spirits. Much may be due to the incitement of association of greater numbers of people, but it is a common fact that the same workpeople indulge more in drink when living in the close courts and lanes of the town than when living in the country, and that the residence in the different places is attended with a difference of effects similar to those described in respect to the tailors working in crowded rooms in towns and the tailors working separately or in the country. The workpeople who have fallen into habits of drinking, strenuously allege the impossibility of avoiding the practice in such places; they do, however, drink in greater quantities in such places, and give increased effect to the noxious miasma by which they are surrounded.

Some inquiries from *Mr. Liddle,* the medical officer of the Whitechapel union, as to the condition of the workpeople he visited in such places as he has described, brought to notice another indirect effect of the external as well as the internal condition of the dwelling on their domestic economy and general condition.

It appeared that the persons whom he visited for the purpose of administering medical relief, were men earning, when in work, from 16*s.* to 20*s.* per week, the women earning proportionably. Yet whenever they were subjected to the frequent attacks of sickness which prevailed amongst them, they were in the most wretched destitution: the house was bare of everything; they had no provisions and no credit, and their need for relief was most imminent. In answer to the inquiry how this was to be accounted for, inasmuch as with agricultural labourers who earned little more than half that sum, and paid nearly as much for their food, in visiting their cottages with their ministers, I had commonly observed some store of provisions; Mr. Liddle stated that in such places as those in his district, in such atmospheres, a store of provisions would not keep: everything decayed rapidly, and the workpeople consequently lived "from hand to mouth." On inquiring as to this fact from a respectable butcher, accustomed to sell meat to persons living in such situations, he stated that—

"Meat sold on a Saturday night, in hot weather, to poor people, who have only one close room, in which they sleep, and live, and cook, will certainly turn before the Sunday morning; when, if it were kept in the butcher's shop, or in a well-ventilated place, it would be in as good a condition on the Monday morning. There is a great deal of loss of meat in consequence of the want of ventilation and bad condition of the dwellings of the poorer classes. The butter kept in such places sooner becomes rancid, and the bread dry and disagreeable."

Here, then, we have from the one agent, a close and polluted atmosphere, two different sets of effects; the one set here noticed engendering improvidence, expense, and waste,—the other, the depressing effects of external and internal miasma on the nervous

system, tending to incite the habitual use of ardent spirits; both tending to precipitate this population into disease and misery.

The familiarity with the sickness and death constantly present in the crowded and unwholesome districts, appears to re-act as another concurrent cause in aggravation of the wretchedness and vice in which they are plunged. Seeing the apparent uncertainty of the morrow, the inhabitants really take no heed of it, and abandon themselves with the recklessness and avidity of common soldiers in a war to whatever gross enjoyment comes within their reach. All the districts I visited, where the rate of sickness and mortality was high, presented, as might be expected, a proportionate amount of severe cases of destitute orphanage and widowhood; and the same places were marked by excessive recklessness of the labouring population. In Dumfries, for example, it is estimated, that the cholera, swept away one-eleventh part of the population. Until recently, the town had not recovered the severe effects of the visitation, and the condition of the orphans was most deplorable. Amongst young artisans who were earning from 16*s.* to 18*s.* a-week, I was informed that there were very few who made any reserves against the casualties of sickness. I was led to ask the provost what number of bakers' shops there were? "Twelve," was his answer. And what number of whiskey-shops may the town possess? "Seventy-nine" was the reply. If we might rely on the inquiries made of working-men when Dr. Arnott and I went through the wynds of Edinburgh, their consumption of spirits bore almost the like proportion to the consumption of wholesome food. We observed to Captain Stuart, the superintendent of the police at Edinburgh, in our inspection of the wynds, that life appeared to be of little value, and was likely to be held cheap in such spots. He stated, in answer, that a short time ago a man had been executed for the murder of his wife in a fit of passion in the very room we had accidentally entered, and where we were led to make the observation. At a short distance from that spot, and amidst others of this class of habitation, were those which had been the scenes of the murders by Burke and Hare. Yet amidst these were the residences of working men engaged in regular industry. The indiscriminate mixture of workpeople and their children in the immediate vicinity, and often in the same rooms with persons whose character was denoted by the question and answer more than once exchanged, "When were you last washed?" "When I was last in prison," was only one mark of the entire degradation to which they had been brought. The working-classes living in these districts were equally marked by the abandonment of every civil or social regulation. Asking some children in one of the rooms of the wynds in which they swarmed in Glasgow what were their names, they hesitated to answer, when one of the inmates said, they called them ———, mentioning some nicknames. "The fact is," observed Captain Miller, the superintendent of the police, "they

really have no names. Within this range of buildings I have no doubt I should be able to find a thousand children who have no names whatever, or only nicknames, like dogs." There were found amidst the occupants, labourers earning wages undoubtedly sufficient to have paid for comfortable tenements, men and women who were intelligent, and so far as could be ascertained, had received the ordinary education which should have given better tastes and led to better habits. My own observations have been confirmed by the statement of Mr. Sheriff Alison, of Glasgow, that in the great manufacturing towns of Scotland, "in the contest with whiskey, in their crowded population, education has been entirely overthrown." The ministers, it will be seen, make similar reports from the rural districts. On the observation of other districts, and the comparison of the habits of the same workmen in town and country, it will be seen that I consider that the use of the whiskey and the prostration of the education and moral habits for which the Scottish labourers have been distinguished is, to a considerable extent, attributable to the surrounding physical circumstances, including the effects of the bad ventilation. The labourers presented to our notice in the condition described, in the crowded districts, were almost all Scotch. It is common to ascribe the extreme of misery and vice wholly to the Irish portion of the population of the towns in Scotland. A short inspection on the spot would correct this error. Mr. Baird, in his report on the sanitary condition of the poor of Glasgow, observes that "the bad name of the poor Irish had been too long attached to them." Dr. Cowan, of Glasgow, stated that "From ample opportunities of observation, they appeared to him to exhibit much less of that squalid misery and addiction to the use of ardent spirits than the Scotch of the same grade." Instances were indeed stated to us, where the Irish were preferred for employment from their superior steadiness and docility; and Mr. Stuart, the Factory Inspector for Scotland, states, that "instances are now occurring of a preference being given to them as workers in the flax factories on account of their regular habits, and that very significant hints have been given by extensive factory owners, that Irish workmen will be selected unless the natives of the place, and other persons employed by them, relinquish the prevailing habits of intemperance." Dr. Scott Alison, in his report on Tranent, has described the population in receipt of high wages, but living under similar influences, as prone to passionate excitement, and as apt instruments for political discontents; their moral perceptions appeared to have been obliterated, and they might be said to be characterised by a "ferocious indocility which makes them prompt to wrong and violence, destroys their social nature, and transforms them into something little better than wild beasts."

It is to be regretted that the coincidence of pestilence and moral disorder is not confined to one part of the island, nor to

any one race of the population. The over-crowding and the removal of what may be termed the architectural barriers or protections of decency and propriety, and the causes of physical deterioration in connexion with the moral deterioration, are also fearfully manifest in the districts in England, which, at the time to which the evidence refers, were in a state of prosperity.

Mr. Baker, in his report on the condition of the population, after giving an instance of the contrast presented by the working-people living in better dwellings, situated in better cleansed neighbourhoods (to which I shall advert when submitting the evidence in respect to preventive measures), describes the population living in houses—

"With broken panes in every window-frame, and filth and vermin in every nook. With the walls unwhitewashed for years, black with the smoke of foul chimneys, without water, with corded bed-stocks for beds, and sacking for bed-clothing, with floors unwashed from year to year, without out-offices, * * * * while without, there are streets, elevated a foot, sometimes two, above the level of the causeway, by the accumulation of years, and stagnant puddles here and there, with their fœtid exhalations, causeways broken and dangerous, ash-places choked up with filth, and excrementitious deposits on all sides as a consequence, undrained, unpaved, unventilated, uncared-for by any authority but the landlord, who weekly collects his miserable rents from his miserable tenants.

"Can we wonder that such places are the hot-beds of disease, or that it obtains, upon constitutions thus liberally predisposed to receive it, and forms the mortality which Leeds exhibits. Adult life, exposed to such miasmata, gives way. How much more then infant life, when ushered into, and attempted to be reared in, such obnoxious atmospheres. On the moral habits similar effects are produced. An inattention on the part of the local authorities to the state of the streets diminishes year by year the respectability of their occupiers. None dwell in such localities but to whom propinquity to employment is absolutely essential. Those who might advocate a better state of things, depart; and of those who remain, the one-half, by repeated exhibitions of indecency and vulgarity, and indeed by the mere fact of neighbourship, sink into the moral degradation which is natural to the other, and vicious habits and criminal propensities precede the death which these combinations prepare."

No education as yet commonly given appears to have availed against such demoralizing circumstances as those described; but the cases of moral improvement of a population, by cleansing, draining, and the improvement of the internal and external conditions of the dwellings, of which instances will be presented, are more numerous and decided, though there still occur instances of persons in whom the love of ardent spirits has gained such entire possession as to have withstood all such means of retrieving them. The most experienced public officers acquainted with the condition of the inferior population of the towns would agree in giving the first place in efficiency and importance to the removal of what

may be termed the physical barriers to improvement, and that as against such barriers moral agencies have but a remote chance of success.

A gentleman who has had considerable experience in the management of large numbers of the manufacturing population stated to me that in every case of personal and moral improvement the successful step was made by the removal of the party from the ill-conditioned neighbourhood in which he had been brought up. When a young workman married, he interfered to get him a better residence apart from the rest; and when this was done important alterations followed; but if he took up his abode in the old neighbourhood, the condition of the wife was soon brought down to the common level, and the marriage became a source of wretchedness.

Benevolent persons, viewing the bare aspect of some of the most afflicted neighbourhoods, have raised subscriptions for the purchase of furniture, bedding, and blankets, for the relief of the inmates, but by this pecuniary aid they have only added fuel to the flame; that is, they have enabled the inmates to purchase more ardent spirits. The force of the habit, which is aggravated by misdirected charity, is indicated in the following instances, of which one was mentioned to me by the *Rev. Whitwell Elwin*:—

"I was lately informed by a master tailor of Bath that one of his men, who had earned 3*l*. a-week at piece-work for years, had never within his knowledge possessed table, chairs, or bedding. I found the statement on examination to be strictly true. Some straw on which he slept, a square block of wood, a low three-legged stool, and an old tea-caddy, are the complete inventory of the articles of a room, the occupier of which, with only himself and his wife to maintain, was wealthier than many in the station of gentlemen. He had frequently excited lively compassion in benevolent individuals, who, supposing that he was struggling for very existence, furnished him with a variety of household goods, which were regularly pawned before a week was out, and afforded to the superficial observer fresh evidence of the extremity of his distress. The cause of all this is quickly told: the wife was to be seen going to and fro several times a-day with a cream-jug of gin, and to gratify this appetite, they had voluntarily reduced themselves to the condition of savages. I could add numerous instances of a similar kind. Indeed, were a stranger to go through the town, and judge only from the appearance of things, I am convinced that he would select his examples of greatest privation not from the really poor, but from men who were in the receipt of more than 30*s*. a-week. Charity, which when prompted by pure motives, always blesses him that gives, does not always bless him that takes. I am afraid that the indiscriminate adoption of dirt and rags as a test of poverty, especially in a town like Bath, where private charity prevails on an extensive scale, operates as a premium upon ill habits, and as a discouragement to cleanliness, and leads many to affect a vice which was not habitual to them."

As an instance of that state of voluntary wretchedness which renders all such charity or assistance worse than useless, I may

give an incident mentioned to me by *Sir Charles Shaw*, the chief commissioner of the new police force in Manchester:—

"A week since," says Sir Charles, "I sent an inspector of police to examine a lodging-house. He came back to state that he had never witnessed such a sight. He found in one room, totally destitute of furniture, three men and two women lying on the bare floor, without straw, and with bricks only for their pillows. I observed, that I supposed they were drunk. 'Yes,' said the inspector; 'they were, and I found the lodging-house keeper himself in a tolerable bed, and in another room I found bundles of fine fresh straw. I blamed the man for not giving that straw to his lodgers. He answered, 'I keep that straw for the people who prefer purchasing it to gin: those above stairs preferred the gin.' It is, I find, a common thing here for lodging-house keepers to have straw for sale."

In the course of an examination which I took, under the Poor Law Commission of Inquiry, from the late *Mr. Walker*, the stipendiary magistrate of the Thames Police Office, he observed, in respect to cases of apparent destitution:—

"Casualties occurring among the indigent or profligate are at all times liable to be represented as cases resulting from the neglect of the proper authorities. Some time ago, in going round the parish of Whitechapel with the churchwardens, during service-time, we entered an old building in Rosemary-lane, for which there was then no owner, the stairs were so dark and ruinous that though it was mid-day we were obliged to have a candle, to enable us to go up to them: the first-floor was the receptacle of every description of filth. We entered one room, in which we found two half-naked dirty children; their mother lay in one corner on some dirty straw, covered only with a sack. There was no furniture nor other articles in the place, except a fagot of wood and a few broken plates, a basket of skate, and some sprats strewed on the floor. This woman was a fish-hawker, a business by which, in all probability, she gained enough to have made her extremely comfortable, but she preferred an alternation of great privation and profligate enjoyment. Had she accidentally died in this state, here would have been a scene of misery, and a case of excitement for the philanthropists! In our district there are other premises under similar circumstances, all of which are tenanted by persons of the very lowest grade; and it is surprising, considering the state in which they live, that unaccountable deaths, having the semblance of starvation, do not take place amongst them. From what I have observed of these places, I am fully convinced that if shambles were built on any spot, and all who choose were allowed to occupy them, they would soon be occupied by a race lower than any yet known. I have often said that if empty casks were placed along the streets of Whitechapel, in a few days each of them would have a tenant, and these tenants would keep up their kind, and prey upon the rest of the community. I am sure that if such facilities were offered, there is no conceivable degradation to which portions of the species might not be reduced. Allow these tub-men no education, and you would have so many savages living in the midst of civilization. Wherever there are empty houses which are not secured, they are soon tenanted by wretched

objects, and these tenants continue so long as there is a harbour for them. Parish officers and others come to me to aid them in clearing such places. I tell the police and the parish that there is no use in their watching these places, that they must board them up if they would get rid of the occupants. If they will give the accommodation they will get the occupants. If you will have marshes and stagnant waters you will there have suitable animals, and the only way of getting rid of them is by draining the marshes."

The *Reverend Whitwell Elwin* observes upon this subject that—

"Those who think that labourers will work for themselves a reform in their habitations very much underrate the effects of habit. A person accustomed to fresh air, and all the comforts of civilized life, goes into a miserable room, dirty, bare, and, above all, sickening from the smell. Judging from his own sensations, he conceives that nothing but the most abject poverty could have produced this state of things, and he can imagine nothing necessary to a cure but a way for escape. A very simple experiment will correct these erroneous impressions. Let him remain a short time in the room, and the perception of closeness will so entirely vanish that he will almost fancy that the atmosphere has been purified since his entrance. There are few who are not familiar with this fact; and if such are the effects of an hour in blunting our refined sensations, and rendering them insensible to noxious exhalations, what must be the influence of years on the coarser perceptions of the working-man?

"All who know the lower classes will testify that the last want felt by the dirty is cleanliness, that their last expenditure is on the comforts of their home. Two winters ago I found a painter whose bed was without blankets, whose room was without furniture, who was destitute even of the ordinary utensils of civilized life, whose floor was covered with worse filth than that of the streets—I found this man at dinner with a roast loin of pork stuffed with onions, a Yorkshire pudding, a large jug of ale, cheese, and a salad. I will undertake to say that half the gentlemen in Bath did not sit down on that Sunday to so good a dinner.

A number of communications simply assign "intemperance" as the cause of fever, and of the prevalent mortality. Of most of these communications, which it were unnecessary to recite, it may be observed, that when intemperance is mentioned as the cause of disease, as being the immediate antecedent, on carrying investigation a little further back, discomfort is found to be the immediate antecedent to the intemperance; and where the external causes of positive discomfort do not prevail in the towns, the workpeople are generally found to have few or no rival pleasures to wean them from habits of intemperance, and to have come from districts subject to the discomforts likely to engender them. In one of the returns from Scotland it is observed that with the people, whether for a fever, a cold, or consumption, or a pleurisy, whiskey is the universal antidote. The popular belief that fermented liquor or ardent spirits are proper antidotes to the effects of damp or cold has been

universal, and has not wanted even medical sanction. Out-door allowances of beer have been prescribed by some medical officers in marshy and undrained districts as the proper preservatives against ague or rheumatism. The Board will now be in a position to urge the importance of facilitating drainage as a means for the protection of the population by the prevention of disease and the inducement to pernicious habits, as well as a source of profitable industry. It is now beginning to be observed in several dangerous occupations that temperance is the best means of withstanding the effects of the noxious agencies which they have to encounter. Amongst the painters, for example, the men who are temperate and cleanly suffer little from the occupation, but if any one of them become intemperate, the noxious causes take effect with a certainty and rapidity proportioned to the relaxed domestic habits. The Inquiry presents many instances of the beneficial effects of the changes of the popular habit of having recourse to fermented liquors or to spirits as necessary protective stimulants. In several of the mining districts, for example, it is an extensive practice to provide for the accommodation of the miners out of the hot mines a room in which they may drink beer as a preservative against the effects of the change to the cold and damp air to which they are about to expose themselves. *Dr. Barham,* in his Report to the Commissioners appointed to inquire into the Employment of Young Persons in Mines and Manufactories, notices an admirable example within the province of voluntary exertion, and the beneficial effects produced by it at the Dolcoath copper and tin mine, Camborne, Cornwall. There the proprietors, besides establishing other easy and economical preventive arrangements, provide a warm room for the miners to change their dresses and take hot meat-soup, which is cheaper, probably, than beer. "And the men" (says a witness) "say they never feel cold when they take it. We conceive that there have been much fewer cases of consumption on the club since this practice has been adopted."

The effects of the noxious physical agencies on the moral condition of the population will receive more full illustration in connexion with the statistical evidence as to their effects, with the evidence on the practical operation of the means of prevention.

Domestic mismanagement, a predisposing cause of disease.

The subsequent examples relate chiefly to the effects of general domestic mismanagement as a concurrent cause of disease.

Dr. Baker, in his report on the sanitary condition of the population of Derby, states that—

"There is also another cause of sickness to be found in their houses, and which, like the former, *i. e.*, the external circumstances, is in con-

stant operation: I mean the want of domestic comforts, a want which the wages they earn would, in many instances, enable them to remove if their means were not, as too often happens, expended viciously or improvidently. It is with regret that I speak unfavourably of the poor, whilst my whole aim, in this communication, has been to awaken a sympathy towards those sufferings of which I have been so often a witness. But several years' experience of the habits of the poor, derived from my situation as an hospital physician, and backed by the additional evidence I have obtained by acting for three years as a guardian of the poor in this large town, has, I am sorry to say, served but to confirm me in the opinion I have just now expressed; and in support of which I shall instance the family of the Slaters mentioned at No. 12, in Short-street.

"The earnings of four members of this family were as follows:—

	s.	*d.*	
The father	14	0	per week, at gardening, &c.
The eldest son, aged 20	12	0	„ at a brewery.
Daughter . { Twins, } .	6	0	„ at a factory.
Son . . { aged 18 } .	9	0	„ at the same factory.
	£2	1	0 per week.

"The mother of this family, it appears, is left disengaged from all but her household duties and the care of the younger children; the house, nevertheless, is nearly destitute of furniture, and presents a picture of disorder and want. On the other hand, at No. 15, (Briggs) although the husband has for some years past been a weak and ailing man, the family is well ordered and cleanly; and to this fact I mainly attribute the milder and modified form of fever which affected the children."

The Committee of Physicians and Surgeons at Birmingham, in their report, indicate the powerful operation of depraved domestic habits as a predisposing cause to disease:—

"It cannot," they say, "be doubted that whilst the arts and manufactures of the place prove in some instances injurious to health, and in a few possibly destructive to life, these evil consequences, as well as hereditary predisposition to disease, are promoted by intemperance, not that intemperance is an infinitely more frequent cause of disease and death amongst the artisans than all the various employments of all the manufactories combined.

"In the expenditure of their weekly earnings, improvidence and thoughtless extravagance prevail to a lamentable degree. The observations upon which this opinion is formed are made upon the habits of the people themselves, confirmed by extensive and recent inquiries among the shopkeepers with whom they deal. Tea, coffee, sugar, butter, cheese, bacon, (of which a great deal is consumed in this town,) and other articles, the working people purchase in small quantities from the hucksters, who charge an enormous profit upon them, being, as they state, compelled to do so to cover the losses which they frequently sustain by bad debts. Huckster dealing is a most extravagant mode of dealing; there were in this town, in 1834, 717 of these shops, and the number has greatly increased since that time. Meat is purchased in the same

improvident manner; the working men generally contrive to have a good joint of meat upon the Sunday; the dinner on the other days of the week is made from steaks or chops, which is the most extravagant mode either of purchasing or cooking meat.

"The improvidence of this class of persons arises in many instances from the indulgence of vicious propensities. Drunkenness, with all its attendant miseries, prevails to a great extent, though it is by no means to be regarded as a characteristic feature of the mechanic of this town in particular. It most generally prevails among that class of workmen who obtain the highest wages, but who are often found in the most deplorable and abject condition. The improvidence of which we are speaking is to be traced in very many instances to extreme ignorance on the part of the wives of these people. The females are from necessity bred up from their youth in the workshops, as the earnings of the younger members contribute to the support of the family. The minds and morals of the girls become debased, and they marry totally ignorant of all those habits of domestic economy which tend to render a husband's home comfortable and happy; and this is very often the cause of the man being driven to the alehouse to seek that comfort after his day of toil which he looks for in vain by his own fireside. The habit of a manufacturing life being once established in a woman, she continues it, and leaves her home and children to the care of a neighbour or of a hired child, sometimes only a few years older than her own children, whose services cost her probably as much as she obtains for her labour. To this neglect on the part of their parents is to be traced the death of many children; they are left in the house with a fire before they are old enough to know the danger to which they are exposed, and are often dreadfully burnt."

Mr. Mott's report on the sanitary condition of the population of his district presents parallel instances of the different economy prevalent amongst these classes:—

Contrast in the Economy of Families.

1.	1.
Cellar in Wellington-court, Chorlton-upon-Medlock; a man, his wife and seven children; income per week, 1*l.* 11*s.*; rent 1*s.* 6*d.* per week; three beds for seven, in a dark, unventilated back room, bed-covering of the meanest and scantiest kind—the man and wife occupying the front room as a sleeping-room for themselves, in which the whole family take their food and spend their leisure time; here the family, in a filthy destitute state, with an income averaging 3*s.* 5¼*d.* each per week, four being children under 11 years of age.	In a dwelling-house in Chorlton Union, containing one sitting-room and two bed-rooms; a man, his wife and three children; rent 2*s.* 6*d.* per week; income per week 12*s.* 6*d.*, being an average of 2*s.* 6*d.* per week for each person. Here, with a sickly man, the house presented an appearance of comfort in every part, as also the bedding was in good order.
2.	2.
Cellar in York-street, Chorlton-upon-Medlock; a man—a hand-loom weaver—his wife and family (one daughter married, with her husband forms part of the family), comprising altogether seven persons; income 2*l.* 7*s.*, or 6*s.* 8¼*d.* per	In a dwelling-house, Stove-street, one sitting-room, one kitchen and two bed-rooms, rent 4*s.* per week. A poor widow, with a daughter also a widow, with ten children, making together 13 in family; income 1*l.* 6*s.* per week,

head; rent 2*s*. Here, with the largest amount of income, the family occupy two filthy, damp, unwholesome cellars, one of which is a back place without pavement or flooring of any kind, occupied by the loom of the family, and used as a sleeping-room for the married couple and single daughter.

3.

John Salt, of Carr Bank (labourer), wages 12*s*. per week; a wife, and one child aged 15: he is a drunken, disorderly fellow, and very much in debt.

4.

William Haynes, of Oakamoore (wire-drawer), wages 1*l*. per week; he has a wife and five children; he is in debt, and his family is shamefully neglected.

5.

George Locket, of Kingsley (boatman), wages 18*s*. per week, with a wife and seven children; his family are in a miserable condition.

6.

John Banks, of Cheadle (collier), wages 18*s*. per week; wife and three children; his house is in a filthy state, and the furniture not worth 10*s*.

7.

William Weaver, of Kingsley (boatman), wages 18*s*. per week; wife and three children; he is a drunken, disorderly fellow, and his family entirely destitute.

8.

Richard Barlow, of Cheadle (labourer), wages 12*s*. per week; wife and five children, in miserable circumstance, not a bed to lie on.

9.

Thomas Bartlem, of Tean (labourer), wages 14*s*. per week; his wife earns 7*s*. per week; five children; he is very much in debt; home neglected.

10.

Thomas Johnson, of Tean (blacksmith), wages 18*s*. per week; his wife earns 7*s*. per week; three children; he is very much in debt, and his family grossly neglected.

averaging 2*s*. per head per week. Here there is every appearance of cleanliness and comfort.

3.

George Hall, of Carr Bank (labourer), wages 10*s*. per week; has reared ten children; he is in comfortable circumstances.

4.

John Hammonds, of Woodhead (collier), wages 18*s*. per week; has six children to support; he is a steady man and saving money.

5.

George Mosley, of Kingsley (collier), wages 18*s*. per week; he has a wife and seven children; he is saving money.

6.

William Faulkner, of Tean (tape-weaver), wages 18*s*. per week; supports his wife and seven children without assistance.

7.

Charles Rushton, of Lightwoodfields, wages 14*s*. per week; he supports his wife and five children in credit.

8.

William Sargeant, of Lightwoodfields (labourer), wages 13*s*. a-week; he has a wife and six children, whom he supports comfortably.

9.

William Box, of Tean (tape-weaver), wages 18*s*. or 20*s*. per week; supports his wife in bad health, and five children.

10.

Ralph Faulkner, of Tean (tape-weaver), wages 18*s*. or 20*s*. per week; supports a wife and five children, three of them are deaf and dumb.

Mr. Harrison, the medical officer of the Preston union, observes that—

"I have known many families whose income has exceeded 100*l*. a-year, who in times of sickness have been in great distress, and even some who have been obliged to have recourse to the parish for assistance. And I am acquainted with several families now of the best paid

class of workpeople, whose total weekly earnings will average 2*l*., and in some cases 3*l*. a-week, who, should sickness overtake the head of the family, and some of the principal workers among the children, would be thrown upon the parish. I have been convinced from extensive observation, that the masters of these people have it in their power to improve the condition and happiness of their workpeople beyond what can be effected by any other agency."

These descriptions are not confined to the English towns Mr. Jupp and others cite instances from the rural districts. They are similarly prevalent in Scotland. As an example I would refer to the description given by Dr. Scott Alison, of the condition of the highly-paid collier population of Tranent. Take another instance of the condition of the same class, the colliers at Ayr, given by *Dr. Sym,* in his report on the sanitary condition of the population of that town:—

"Although the colliers have large wages, they are, from their want of economy and their dissolute habits, uniformly in poverty; and their families, though well fed, are miserably clothed, ill lodged, uneducated, and less industrious than the families of the weavers; the females of which work with great constancy at hand-sewing. The modes of living of these two classes are very different. The weaver is not intemperate, because he cannot afford to purchase ardent spirits, and the nature of his employment prevents him from having those hours of idleness during the day which the collier is so apt to consume in dissipation. He lives on very innutritious food, seldom eats butchers' meat, and the most indigent, who are generally Irishmen, subsist chiefly on potatoes. The collier, on the other hand, indulges to excess in ardent spirits, and both he and his family partake of animal food every day. In short, the colliers live better than any of the other labouring classes in Ayr."

Dr. Scott Alison, speaking of the colliers of Tranent, states that they obtain very high wages. "A man, his wife, and perhaps two children may earn perhaps 40*s*. a-week, if industriously employed during that time." On the subject of appearances of destitution, on which medical men sometimes report, he observes—

"I have had occasion to know that medical men, judging from internal appearances of the dwellings of the labouring classes, are liable to be led into erroneous inferences as to the extent of destitution. The appearance of the place or of the person is no test of the want of means or of the highness or lowness of wages. Filth is more frequently evidence of depravity than of destitution; indeed, in places where the wages or means are really scanty, there is very frequently considerable cleanliness. If a stranger went into the house of a collier, he might exclaim, 'What extreme wretchedness and destitution!' when, in fact, on the Saturday they had received 30*s*., which before the Tuesday had all been squandered. I think medical men, who are not intimately acquainted with the character of people, are often drawn into mistakes."

The domestic condition of this population admits of a contrast with the condition of individuals of their own description of employment, or with the condition of other classes of miners who

receive no higher wages, but whose condition is highly superior, to show that the depraved habits and condition are not the necessary result of the employment. He contrasts the condition of the colliery population of Tranent with the condition of the agricultural labourers in the immediate vicinity of the town:—

"With very few exceptions, the condition of the interior of the houses of the hind population is excellent, most pleasing to the eye, and comfortable. These respectable people, in spite of the defective construction of their cottages, manage to throw an air of comfort, plenty, neatness, and order around their homes. I have often been delighted to observe these characteristics, and not less so to mark the co-existence of pure, moral, and religious principles in the inmates, the presence of practical religion and practical morals. When the floor wears away, it is repaired; when the walls lose their whiteness, they are whitewashed; and every few days the whole wooden furniture in the house is subjected to thorough cleansing with sand and warm water. The various articles of furniture, and the different household utensils, are kept in places allotted to them; and the earthenware and china well cleaned, are neatly arranged, and made to serve as ornaments to the apartment. The metal spoons, candlesticks, and pitchers for containing milk and water, are well burnished. The milk taken from the cow may be seen set apart in vessels kept in the nicest order; and beside them lie the churning-barrel and strainer. A fire sheds its cheerful influence over the scene; the kettle never wants hot water; and the honest, frugal housewife is ever discharging some household duty in a spirit of placid contentment, attending to her partner when present, or preparing his meals against his return from the fields.

"The external economy of the houses of the hinds is on the whole very good. The ground in front of the cottages is kept clean and free of impurities. The little garden, which is almost invariably connected with the cottage, is kept in good order, and is in general well cultivated."

The like contrast, derived from an intimate knowledge of the population of another class, is presented in the following portions of a report from *Mr. Wood,* of Dundee:—

"There are many families among the working classes who are in the receipt of from 15*s.* to 22*s.* per week, who are insufficiently clothed, and irregularly and poorly fed, and whose houses as well as their persons appear filthy, disorderly, and uncomfortable. There are other families among them, containing the same number of persons, whose incomes average from 10*s.* to 14*s.* a-week, who are neatly, cleanly, and sufficiently clothed, regularly and suitably fed, and whose houses appear orderly and comfortable. The former class care little for the physical comfort, and far less for the intellectual, moral, and religious education of their children; in many cases, indeed, they neglect the education of their offspring when it is offered to them gratuitously, and in place of sending them to school, where they might be fitted for the duties and disappointments of life, they send them at a very early age to some employment, where they will earn the poor pittance of 1*s.* 6*d.* to 3*s.* a-week. The latter class, on the contrary, are most anxious to give their children a good education: they study to obtain it for them by every means in their power, and they pay for it most cheerfully. The former class again grasp at every benefit which the charitable institutions of the place have provided for the poor. When, for example, medical attendance is given them gratuitously, they not unfrequently despise and refuse it, unless medicines are given them gratuitously also. Whereas the latter description of families are not only ready and willing to pay for medicines when prescribed to them, but they generally manifest much gratitude, and very often present their medical attendant with a small fee.

"Now it is among the former class of families where generally there appears to me to be a deficiency of wholesome food and of warm clothing; where contagious, febrile diseases are most commonly found; and from whence they are most extensively propagated. Fever is no doubt found among the latter, more frugal, and therefore better conditioned families, but seldom of that malignant, contagious character which it invariably assumes among the other class of families. Here, then, we have on the one hand, filth, destitution, and disease, associated with good wages; and on the other, cleanliness, comfort, and comparative good health, in connexion with wages which are much lower. The difference in the amount of their incomes does not account for the difference in the amount of comfort which is found existing among the working classes. The statements just made make known the fact, that above a certain amount, say 12*s.* or 14*s.* of weekly income, wages *alone,* without intelligence and good habits, contributes nothing towards the comfort, health, and independence of the working population.* * * Were I asked how I would propose to relieve such a family, I would say, show them how they may live comfortably within their incomes; let them be taught and trained to habits of industry, frugality, sobriety, cleanliness, &c., and with this 12*s.* or 14*s.* they may live in health and happiness as others in similar circumstances have lived and are now living. The man who maintains himself and his family in comfort on 12*s.* or 14*s.* of weekly income, possesses what he well deserves, happiness at home, and he stands forth in his neighbourhood a noble example of honest independence. I am persuaded that the filth, fever, and destitution in many families is occasioned, not by their small incomes, but by a misapplication or a prodigal waste of a part, in some cases a great part, of their otherwise sufficient wages. Frequently cases are found where, with a want of skill and economy, there is combined the intemperate use of intoxicating liquors, and here the misery may be said to be complete.

"Such is the explanation which I have to offer regarding much of the misery now prevalent, and it is the explanation invariably given by the economical working classes themselves when questioned on the subject. Heads of families, having three or four children, whose incomes average from 14*s.* to 18*s.* per week, have assured me that a man with a wife and three or four children can live comfortably on 12*s.* or 14*s.* a-week; and they generally account for the misery and destitution existing among families by saying, that many who have good wages reduce themselves to poverty and deprive themselves of sufficient food and clothing by their mismanagement, want of frugality, and drinking practices. Cases of waste and dissipation have been related to me, where the husband having gone to the tippling-house to enjoy his glass and his friend, the wife, knowing this, sent for her bottle and her friend,

and enjoyed herself at home. A single visit to one of these spend-thrift families, who are in the receipt of good wages, would convince any one that their persons and houses might be far more orderly, clean, and comfortable, were they but half trained to the tastes and habits of household industry, sobriety, and economy."

The more closely the investigation as to the causes of epidemic disease is carried the more have the grounds been narrowed on which any presumption can be raised that it is generally occasioned by extreme indigence, or that it could be made generally to disappear simply by grants of money.

In the great mass of cases in every part of the country, in the rural districts and in the places of commercial pressure, the attacks of disease are upon those in full employment, the attack of fever precedes the destitution, not the destitution the disease. There is strong evidence of the existence of a large class of persons in severe penury in some places, as in Glasgow, being subject to fever, but the fever patients did not, as a class, present evidence of being in destitution in any of the places we examined. *Dr. William Davidson*, the senior physician of the Glasgow Royal Infirmary, who has written a Treatise on the Sources and Propagation of Continued Fevers, for which the prize instituted by Dr. Thackeray, of Chester, was unanimously awarded at the annual meeting of the Provincial Medical and Surgical Association, states in that treatise, when speaking of the influence of delicacy of constitution as a predisposing cause of fever,—

"We have kept a record of the physical habit of the patients admitted into the Glasgow Fever Hospital from May 1st to November 1st, 1839, and the following were the divisions adopted :—

"1. Moderate, by which is meant a person having an ordinary quantity of muscle and cellular substance.

"2. Full or plethoric, having an extra quantity of adipose texture or of blood.

"3. Muscular.

"4. Spare.

"5. Emaciated or unhealthy in appearance.

	Males.	Females.	Total.
Moderate	116	93	209
Full or Plethoric . . .	28	73	101
Muscular	44	..	44
Spare	24	41	65
Unhealthy or Emaciated .	2	8	10
			429

"The whole of these 429 cases were characterized by the typhoid eruption, and will therefore be considered as decided cases of typhus. It appears from this table that there were only 10 cases in an emaciated or unhealthy condition; and almost all of them, as far as could be ascertained, were engaged in their ordinary occupations at the time of their seizure. The spare and unhealthy, when added together, only form about 17 per cent. of the whole number."

He gives two tables of the proportionate numbers of persons admitted, during the year 1839, into the Glasgow Fever Hospital, whose persons were clean or filthy :—

"These two tables show that, among 611 cases admitted as continued fever, there were 340 filthy and 271 clean, or about 55 per cent. filthy; that among 395 cases of eruptive typhus, there were 245 filthy and 150 clean, or about 62 per cent. filthy; and that among 48 cases of febricula there were 14 filthy and 34 clean, or about 29 per cent. filthy.",

Amongst the fever patients are found a larger proportion of the highly intemperate than appear to be usually found amongst the labouring classes.

Dr. Davidson, in remarking on the influence of intemperance on fever, adduces the following table to show the proportion of temperate and intemperate individuals who were admitted into the Glasgow Fever Hospital from November 1st, 1838, to November 1st, 1839, whose habits could be ascertained with more or less certainty. He states that the eruptive cases only are included :—

	Temperate.	A little Intemperate.	Intemperate.
Typhus (Males)	125	51	73
Typhus (Females)	76	8	30

I have been informed that those were classed as "temperate" who never indulged in strong liquors to the extent of inebriety; those a "little intemperate" who now and again, perhaps at long intervals, drank to intoxication; and those as "intemperate" who were habitually so—who drank whenever they could get ardent spirits.

He adds,—

"In the Glasgow Fever Hospital there occurred 81 deaths from eruptive typhus in individuals whose habits were ascertained, and 34 of these were reported as intemperate, 19 a little intemperate, and 28 temperate. In Dr. Craigie's table of the deaths in 31 fever cases that occurred in the Edinburgh Royal Infirmary, there were 15 stated to be irregular or dissipated; only two regular; the habits of the remainder are not stated.

"It is also a singular fact, which has been noticed by several writers, that fever is more fatal among the higher than among the lower classes. Dr. Braken states, in reference to the fever which prevailed at Waterford during the years 1817-18-19, that 'it would be difficult to adjust the rates of mortality in the upper classes, but it seems probable that one-fourth, or perhaps one-third of all those persons who were attacked with fever fell victims to its power.'

"Drs. Barker and Cheyne, in their historical account of the Irish epidemic, state that, 'in every part of the country, fever was reported to have been much more fatal amongst the upper than the lower classes.' To what is this difference of mortality, so generally remarked by experienced hospital physicians, to be attributed, and

which in Ireland seemed to be very remarkable, namely, in the lower classes about one in twenty-three cases, and in the upper classes one in three or four generally, but in other places about one in seven? Can the difference in the mode of living account for this anomaly? as the first live very much on potatoes, while the others use a larger or smaller proportion of animal food; and the lower classes almost everywhere in this country use less animal food and stimulating dishes than those who are more wealthy and in a higher sphere of society."

In remarking on the supposed influence of fear and the depressing passions in producing fever, *Dr. Davidson*, however, remarks:—

"The influence of fear and the depressing passions has also been considered as very powerful in predisposing persons to be affected with typhus contagion. There can be no doubt that fear has a tendency to produce a temporary depression of the physical powers; but, as has been already shown, there is no proof that persons of a naturally spare or weak habit of body, who are generally very sensitive, are more liable to fever than those of an ordinary constitution; this opinion must also be considered hypothetical. Indeed the facts, as far as our inquiries have enabled us to judge, seem to prove that the apprehension of fever, more particularly when it is not epidemic, is very rarely felt until the person is actually seized with the disease; for some cannot recollect of a single circumstance by which they could be exposed to contagion; and a considerable number of those who had undoubtedly been exposed to it were only made aware of the fact when it had been elicited by cross-examination. We are quite aware that cases may be brought forward of sensitive individuals who have been seized with fever soon after visiting a person labouring under the disease; but as this fact can be opposed with at least an equal number of persons who were destitute of fear, and yet caught it after an exposure to contagion, no conclusion whatever can be drawn from them. It must be observed, however, that though there is no proof that persons who are naturally weak in body or of a sensitive disposition are more susceptible of fever than those who are naturally vigorous and robust, yet that, during famine or commercial distress, poverty, by depressing the mind and lowering the physical status from insufficient aliment, does powerfully predispose a community to become affected with fever. This has been already shown in a former part of the essay, and has been again alluded to in order that the distinction might be made between an individual of naturally weak mental and physical stamina, and one who has been reduced to that state by deficient nutriment."

There appears to be little evidence on one side or the other in support of this last hypothesis, other than such as that cited from Dr. Davidson himself; but it is to be observed that the wet or bad seasons, which suspend agricultural industry and much labour in the towns, is usually of a character of itself to predispose to disease, if not to produce it; and that it does propagate it amongst all classes, high and low, in proportion to their exposure to it. It appears to be highly probable that the privation attendant on the stoppage of work, by diminishing the means for

the purchase of fuel, of soap, &c., and in various ways by inducing lax habits of life, may increase the amount of exposure to and loss from the all-pervading cause.

The preponderant evidence given on this subject by the great majority of the medical officers in England who are accustomed to visit the labouring classes in their own dwellings, is however of the tenor of the following from the medical officer of the Whitechapel union acting in Spitalfields parish.

Mr. Byles, the medical officer of the Whitechapel union:—

"What is the number of cases you have had to visit during the year 1841 as a medical officer?—I think the number of cases I have had to visit during each year since the commencement of the Union has been upwards of 2,000 cases of various disease, of which 1,400 were cases out of the workhouse.

"Has the present winter been unhealthy?—I do not think it has; there has been an increase of fever cases during the last month. The number of cases is, however, still below the average of 1838.

"Is there not, however, unusual distress in your district, comprehending Spitalfields and a portion of Whitechapel?—Yes, there is: I believe that more than half the looms are out of work.

"Do you not find that fever attacks in greatest number those who are out of work?—On the contrary, the greatest number of the cases of fever we have are those who fall ill during the time they are in employment. I think they are more attacked when in work, when the windows are closed, and there is no ventilation. Many of them are obliged to work with closed windows, to keep out the moist air, and prevent the dust blowing upon their work. When they are out of work, they are more out of doors looking after work, more in the open air, and that very exercise may be the means of keeping them in health. This observation applies to the weavers. I find that they have generally less fever when they are out of work. The reverse, I think, holds as respects out-door labourers, such as those who work at the docks. When they are out of work, they stand about waiting in the cold, and when cold, they generally take cheap gin, and no food: they catch cold, and on going to their close filthy habitations, their cold is apt to generate fever.

"There was an unusual amount of fever prevalent in Spitalfields and Whitechapel, was there not, in the year 1838?—Yes, there was; in the proportion, perhaps, of more than two to one of the present amount. My last account for the year ending Lady-day, 1842, was about 250 fever cases; it has been as high as high as 800.

"Did it prevail proportionately amongst the weavers?—Yes, I believe it did.

"Was there any marked or unusual distress at that period?—Not that I remember.

"Do you find in the course of your experience that the diminution of food is followed by fever?—Not as a general cause, I should say. If these two persons, casually exposed to the contagion of fever, the one in full vigour, and with a full stomach, the other with an empty stomach, the person with the empty stomach would be the most obnoxious to its influence. In my experience, however, intemperance is a much more frequent antecedent to fever than destitution or want of food.

"Have you ever observed that habits of intemperance are created by distress of mind?—Such cases may occur, but I have not observed them, and I think it does not operate as a general cause.

"What are the chief remedies which your experience in this district would lead you to recommend for the prevention of fever and contagious diseases?—The promotion of cleanly habits amongst the poor; the promotion of sewerage and drainage; having proper supplies of water laid on in the houses; the removal of privies from improper situations. I could point out in our neighbourhood many houses, and some courts, that ought to be pulled down as wholly unfit for human habitation.

"What is the personal state of the labouring classes in your district?—Generally extremely filthy. I have said that I could almost smell from what street a man came who came to my surgery: I do not think the poor themselves are conscious of it, but the smell to other persons must be extremely offensive. I certainly think that the want of personal cleanliness, and of cleanliness in their rooms, and the prevalence of fever, stand in the relation of cause and effect.

"Your colleague has pointed out that the want of proper and convenient supplies of water is an antecedent to the filth and the fever. Does your experience enable you to concur with him?—My experience entirely agrees with his on that point."

The late *Dr. Cowan*, of Glasgow, and the great majority of the medical officers, assign the foremost place to these physical agencies as antecedents to fever.

The medical controversy as to the causes of fever; as to whether it is caused by filth and vitiated atmosphere, or whether the state of the atmosphere is a predisposing cause to the reception of the fever, or the means of propagating that disease, which has really some other superior, independent, or specific cause, does not appear to be one that for practical purposes need be considered, except that its effect is prejudicial in diverting attention from the practical means of prevention.

Dr. Bancroft, one of the controversialists cited by Dr. Davidson, observes,—

"That fever often exists in them" (gaols) "cannot be denied; but this circumstance can afford no evidence of its being generated therein, any more than the multiplication of vermin in such places could demonstrate the spontaneous generation of these and other insects by the nastiness which favours the deposition and hatching of their eggs."

Taking the controversy at this point, and admitting the force of this statement, the decision upon it will not alter the practical value of cleanliness, or of its protective effects in prevention, whether it remove an original or only a predisposing cause.

Yet it cannot but be regretted that the enlightened force of the professional opinion should sustain any diminution from an apparent want of unanimity on so important a question as the necessity of removing these causes, whether original or predisposing: that, for example, whilst the fleets were ravaged by fever and disease, men of high standing should have occupied the attention

of the public with speculations on contagion, and infection from the gaols as the original cause, and diverted attention from the means of prevention, cleansing and ventilation, the means by which, as will hereafter be shown, the pestilence was ultimately banished. The main error of those who have ascribed fever to destitution, appears to have been in adopting too hastily as evidence of the fact of destitution, such *primâ facie* appearances as are noticed by Dr. Scott Alison, an error which non-professional experience may correct. In more than one instance where, in a district in which the demand for labour was still great, and the wages high, benevolent gentlemen have propounded similar doctrines, which, being at variance with the known state of the labour-market, I have requested that the names of these fever cases might be given, that their antecedent circumstances might be examined, and the accuracy of the conclusions tested, by officers of experience in such investigations; but I think it right to state the names or means of inquiry have never been forthcoming. In general, medical practitioners and benevolent individuals are extremely liable to deceive themselves and to deceive others, by what they call the evidence of their own eyes. The occurrence of severe destitution is denied as a general cause of fever, not as a consequence. The evidence shows that the best means of preventing the consequent destitution are those which prevent the attacks of fever and other epidemics upon all classes of the community.

By an extract from a report of the late Dr. Currie, of Liverpool, given in the Appendix, it will be seen that at the time he wrote, 1797, when only 9500 of the population are reported to have lived in cellars, the proportion of fever cases was nearly the same as at present, when the cellar population has risen to 40,000; the disease has been almost as constant as the surrounding physical circumstances of bad ventilation, filth, and damp then pointed out as removable, and the disease has continued in every period of the prosperity of the town in its progress from a population of 77,000 to 223,000 in 1841. So the late Dr. Ferriar, of Manchester, when writing between 30 and 40 years ago, of the state of the population in periods of great prosperity, especially for hand-loom weaving, described the effect of the bad economy of the habitations much as they were described in the year 1829 by Dr. Kay, and as they are described in 1840 by Dr. Baron Howard. *Dr. Ferriar*, when he wrote to warn the labouring classes as to the choice of their dwellings, stated that—

"The custom of inhabiting cellars also tends to promote both the origin and preservation of febrile infection. But even in them the action of filth and confined air is always apparent when fevers arise. I have often observed that the cellar of a fever patient was to be known by a shattered pane, patched with paper or stuffed with rags, and by every external sign of complete dirtiness."

The false opinions as to destitution being the general cause of

fever, and as to its propagation, have had extensively the disastrous effect of preventing efforts being made for the removal of the circumstances which are proved to be followed by a diminution of the pestilence.

The opinion of the majority of the medical officers of the unions in England on this topic, acting in districts in every condition, might be expressed in the terms used by *Dr. Davidson*:—

"It has already been shown that filth and deficient ventilation tend much to spread the contagion of typhus, being almost constant concomitants; and that while it generally affects the whole members, or the large proportion of a family among the lower orders, it rarely spreads in this manner among the better classes of society, who attend more to cleanliness and ventilation. It is quite obvious that an amelioration of the physical condition of the lower orders, in these particulars, would, in proportion as this was effected, diminish their chances of catching the contagion, which would not only operate in lessening directly its diffusion, but by reducing the number of its sources, must tend to lessen the actual quantity of this principle that might be generated in a given time.

"But can this amelioration be effected to any appreciable extent; or, if effected, could it be maintained for any length of time? We fear that little permanent amelioration could be effected without a legislative enactment; for though our philanthropists are very active in their charities during the prevalence of an epidemic, it no sooner subsides than they relapse into a comparative quiescence, and our working population into their former habits of filth and intemperance. And the evil will continue to assail us so long as our cities contain so many narrow and filthy lanes, so long as the houses situated there are little better than dens or hovels, so long as dunghills and other nuisances are allowed to accumulate in their vicinity, so long as these hovels are crowded with inmates, and so long as there is so much poverty and destitution. Why, then, should we not have a legislative enactment that would level these hovels to the ground—that would regulate the width of every street—that would regulate the ventilation of every dwelling-house—that would prevent the lodging-houses of the poor from being crowded with human beings, and that would provide for their destitution? It may be said that this would interfere too much with the liberty of the subject, and no doubt it would be vehemently opposed by many interested persons. In place, however, of being an infringement on the liberty of the subject, it might rather be designated an attempt to prevent the improper liberties of the subject; for what right, moral or constitutional, has any man to form streets, construct houses, and crowd them with human beings, so as to deteriorate health and shorten life, because he finds it profitable to do so? As well ought the law to tolerate the sale of unwholesome food because it might be profitable to the retailer of it."

But the professional experience and weight of professional testimony on this subject is not confined to this country. In a report prepared under the superintendence of a commission of the Royal

Academy of Medicine at Paris,* appointed to investigate the epidemics prevalent in France, similar general conclusions are announced upon similar evidence adduced, of which we select the following instance:—

"If an example," says the report, "be necessary to justify this placing of circumstances as cause and effect, we shall find one in the terrible epidemic which desolated the commune of Prades, in the department of Ariège, at the end of the year 1838. Out of 750 healthy and vigorous inhabitants of this commune 310 were attacked with the disease, and 95 died, thus the deaths were 1 in every $3\frac{1}{4}$ cases. The cause of this epidemic, violent and sudden in its nature, and which broke out in all points at once, is not less evident. It proceeded from a sewer, the receptacle of all the water from the neighbourhood, and of the filth which the water brought with it, and of the dead animals of the district. The hot, damp weather which preceded it no doubt augmented the activity of this focus of infection. The first persons attacked were the women employed in washing linen in this pestiferous pool, and the labourers working in the neighbourhood of it. This terrible epidemic recurred three times, which the invalids in their simplicity attributed to the influence of the moon, but which mainly depended upon the wind at certain periods passing over the infected pool, and bringing the miasma in the direction of their dwellings. If for want of sufficient description it is not possible to prove completely the similarity of the epidemic at Prades with the typhus fever, yet it may be inferred from the symptoms, viz. that when the skin was broken deep sores were formed, and that serous abscesses showed themselves in the lymphatic ganglions, that this disease was very similar to the ancient putrid and malignant fevers formerly described by authors, and which are entirely replaced in our *nosology* by the typhoid affection. The physicians of Ariège, in order to prove that the disease was not *contagious*, and to re-assure the inhabitants, lay in the beds from which the invalids had been removed."

Adverting to the local reports they have received, the Commissioners state—"These reports have awakened in us the sad conviction that many localities are quite devoid of even the most simple ideas on public health; the inhabitants live surrounded by marshes, drains, stagnant pools, manure heaps, without having the slightest idea of the dangers they are incurring. Indeed, many of them blindly speculate in these heaps of infection, increasing the manure which is to enrich their fields at the expense of their health, and often of their lives."

The Commissioners observe,—"Most of the improvements in public health have been brought about through the experience and science united in our large cities; so much so that now epidemics often come to us from the rural districts. These epidemics are generally much less fatal than formerly, but are still very prevalent even in the wealthiest and the most civilized depart-

* Rapport de la Commission des Epidémies de l'Académie Royale de Médecine pour l'année 1839 et un partie d' 1840. Par M. Brichetau, Secrétaire Rapporteur de la Commission.

ments. It would be an important problem to solve, what are the causes which produce these epidemics in the agricultural as well as in the manufacturing counties, as in ancient Normandy and Picardy. One cause is certainly the unhealthiness of the houses. The inhabitants of these districts are, in general, well fed, well clothed, but ill lodged. We are surprised to find in the midst of a fertile plain wide districts covered with luxuriant vegetation, villages buried in the ground, *smothered* with large trees, and cottages constructed without any art or plan, and almost entirely without windows." The Commissioners state, further,—"If you wish to have a robust and healthy people, you must have a care for their physical education, their houses, and their modes of living. Do not allow generation after generation to be depressed under the evil effects of recurring epidemics, which must eventually ruin the strongest constitutions, as is seen to be the case in marshy and ill-drained districts, where fevers, *goitres*, and scrofulas constantly prevail."

In another report made on the proceedings of the Conseil de Salubrité, the diseases prevalent amongst the population in the towns is adverted to:—"We must be like the men so well painted by the Psalmist, to reject such evidence—*eyes have they, and see not.* How shall we explain, or rather to what shall we attribute the difference that is remarked between the mortality of one quarter and that of another quarter of the same town; of one street and that of another street of the same quarter or of the same village; or, lastly, the difference that is observed in this respect between the houses of the same street and those houses which are completely isolated? Misery, it is replied to us, is the cause. Yes, without doubt, misery is a powerful cause; but it is so especially when it is driven back into the most insalubrious quarters, streets, and houses; when it lives habitually in the midst of filth and dirt, that is to say, in the midst of an infected atmosphere; and when there is no misery, or when it exists in the same degree in the quarters, in the villages, in the streets, and in the houses with which the comparison is made; and, stronger still, when poverty is met with precisely there where there is the least mortality; in what is to be found the cause of this difference, if it is not in the insalubrity of the dwelling-places?"

The report on the local epidemics concludes by earnestly recommending to the government—"That sanitary measures be adopted by means of which the constitution of the people may be renewed, and their longevity increased. If this recommendation be fulfilled, we may then hope to see the condition of some of the departments ameliorated, in which now the population is so degenerated that the men seem to diminish in size each time they are measured for the conscriptions."

Evidence on the mismanagement of expenditure in respect to supplies of food, on mismanagement also in respect to clothing

and fuel by the labouring classes, might be added to complete the view of the principal causes of disease prevalent amongst them, but these do not come within the immediate scope of the present inquiry, which has been directed chiefly to the investigation of the evils affecting their sanitary condition, that come within the recognized provinces of legislation or local administration.

The information on the means for the prevention of epidemic disease arising in the common lodging-houses maintained for the accommodation of trampers and vagrants, might also have been considered in connexion with the subject of the effects of overcrowding and filth which they strongly exemplify; but it appeared most convenient to consider them apart, from the exposition of what may be termed the indigenous evils that afflict the settled inhabitants of the labouring class.

I would now submit for consideration, 1st, the total expense of the present state of things, so far as a proximate view of it can be obtained, on the health, strength, and life of the lower classes of the population. 2d, a proximate view of the pecuniary expense of such partial remedies as are at present applied or applicable to alleviate the consequences of these preventible diseases.

IV.— COMPARATIVE CHANCES OF LIFE IN DIFFERENT CLASSES OF THE COMMUNITY.

Very dangerous errors arise from statistical returns and insurance tables of the mean chances of life made up from gross returns of the mortality prevalent amongst large classes, who differ widely in their circumstances. Thus we find, on inquiry into the sanitary condition of the population of different districts, that the average chances of life of the people of one class in one street will be 15 years, and of another class in a street immediately adjacent, 60 years. In one district of the same town I find, on the examination of the registries, the mortality only 1 out of every 57 of the population; and in another district 1 out of every 28 dies annually. A return of the average or the mean of the chances of life, or the proportions of death in either instance, would and does lead to very dangerous errors, and amongst others to serious misapprehensions as to the condition of the inferior districts, and to false inferences as to the proper rates of insurance. With the view of arriving at some estimate of the comparative extent of the operation of the chief causes of sickness and mortality proved to be prevalent, amidst the different classes of society, in the towns where the sanitary inquiries have been made; I have obtained the following returns from the clerks of the several unions acting as superintendent registrars. These returns have, as far as practicable, been corrected by particular local inquiry, and are submitted as the best approximations that can readily be obtained. In all districts, and especially in the manufacturing districts, there is some migration of labourers which would, for the obtainment