heard talked of were effected, and straight and wide streets carried in different directions through these depositaries of wretchedness." Yet it was not until 1866, well nigh fifty years later, that the community through its representatives confessed its sin in the preamble to the City Improvement Act :— "Various portions of the City of Glasgow are so built, and the buildings so densely inhabited, as to be highly injurious to the moral and physical welfare of the inhabitants." Private philanthropy foreran this public action. When the purchases, begun under the resolution of the plague-stricken forties, were exhausted, a number of citizens, of whom Mr. Watson was one, entered into combination for the private purchase of unwholesome property, which they naturally effected on more favourable terms than any public body could obtain. They subsequently handed over all their acquisitions at original cost to the Improvement Trust. The modern form of Divine Right —the infallibility of the majority—was never more disparaged than by the manifestation of popular feeling which burst out on the imposition for the first time of that most righteous tax—the City Improvement Tax—and wreaked its vengeance on Lord Provost Blackie, who carried through the scheme. There had been no opposition in the Town Council, none in Parliament. All the opprobrium of those testimonies of half-a-century must be wiped off. The "Fever-tax" was to be displaced by the "Improvement tax." Mr. Blackie represented a ward in the centre of the city which actually embraced many of those plague spots. He wished to assist in the initiation of the gigantic and then unprecedented scheme. His re-election was challenged distinctly and expressly on the ground of the Improvement Tax, and he was defeated! So shallow at times are the thoughts of the multitude.

CHAPTER II.

THE DECADE, 1862-1871: FIRST EFFORTS OF THE NEW ADMINISTRATION.

(*a*) ADMINISTRATION. (*b*) HOSPITALS.

In the preceding chapter we have had described the embryo Administration which had been designed to cope with the sanitary requirements of the period.

Dr. (now Sir) William T. Gairdner had been appointed Medical Officer of Health, and shortly thereafter the Corporation, having embarked on a definite policy of providing hospital accommodation for the treatment of its infectious sick, Dr. Russell was appointed as Medical Superintendent of the Parliamentary Road Fever Hospital.[1]

Hitherto the argument for sanitary reform had proceeded generally by marshalling the facts so as to produce broad effects. The aim had been to produce a series of impressionist pictures, which were best suited to appeal to the public conscience.

Now discrimination was possible. Disease in the individual was to be traced to defects in the social organism, and Typhus Fever supplied the first clinical evidence of the results of domestic overcrowding.

There lay ready to hand the new and hitherto untried provision for "ticketing" the smaller sized houses, which was shortly to demonstrate its value, in Dr. Gairdner's hands, in the extinction of Typhus Fever in Binnie's Court and the Drygate "Rookery."

The provision of hospitals also opened up new aspects of municipal responsibility, and the need for associating this with provision for disinfection and washing, and for the supervision of certain classes of contacts with infectious disease, soon became apparent.

[1] Also known as Kennedy Street Hospital.

From the very outset the wretched conditions of the housing of a large section of the population attracted attention. Throughout the successive Reports of Dr. Gairdner this is frequently insisted upon, and in 1870 he reviewed the whole subject of house construction as a cause of Mortality before the Philosophical Society of Glasgow.

In connection with the hospital policy also new questions were arising. Their site and construction, organisation, dieting and nursing all had to be considered, and the narrative, as detailed in "Evolution," may here be interrupted in order to summarise shortly the experience of both Officers as related in their Reports issued during this decade.

Among the early difficulties was the lack of information regarding the occurrence of cases of Infectious Disease. The Infectious Disease (Notification) Act was many years in the future, and a special non-medical Inspector, detailed from the police force, was employed to trace out new fever cases.[1]

Regarded from the point of view afforded by the facilities now existing, the provisions for disinfection were of an equally elementary character. "As yet the official operations have been limited to washing and white-washing the floors and walls of the infected apartments, with thorough ventilation, and purification of their contents. I am of opinion, however, that it will be expedient in many cases, where sufficient facilities do not exist for the thorough purification of the bed and body clothing of the sick, that this duty should also be undertaken by the public; and as this will sometimes involve expenses which will fall to be defrayed by the Parochial Board,[2] it will be necessary to secure their co-operation in the proposed proceedings."[3]

Insufficient hospital accommodation for Typhus Fever led to overcrowding of wards, and the eighteenth century experience of Sir John Pringle with the Army in Flanders had been repeated in civilian hospitals at home.

"In the last really considerable epidemic of fever in Glasgow—viz., in the years 1847-48, when so many fever sheds were built within the grounds of the Royal Infirmary, a serious error was undoubtedly committed, in holding this excellent institution responsible for the indefinite or practically unlimited admission of cases of epidemic disease. The consequence was, during that great epidemic, that the supply of cases was for a long time greatly in excess of the means at the disposal of the Managers; and further, that cases were brought to the Infirmary from great distances and under circumstances

[1] Dr. Gairdner's First Report, April, 1863.
[2] Dr. Gairdner's First Report, April, 1863.
[3] First Municipal Disinfection and Washing-house provided, 1864.

which rendered their removal a source of most serious danger, not only to themselves, but to many other persons. The same evils were felt, perhaps even to a greater degree, in Edinburgh, where the Royal Infirmary was looked to as the sole resource in cases of fever over a wide area of the east country. Hence arose, both in Glasgow and Edinburgh, the most pernicious overcrowding of the wards, a very high rate of mortality of the fever, and *the almost certain seizure of all persons within the range of infection, and especially of the nurses and attendants on the sick*. These evils, there is every reason to believe, may be avoided; but they can only be avoided by due foresight, by keeping the accommodation constantly in advance of the demand, and by placing it within reasonable limits of distance from the infected localities."[1]

The policy of tracing new cases of Typhus Fever, however regularly pursued, proved quite inadequate to stem the rising tide of Typhus Fever while overcrowding remained unchecked, and in July, 1863, an application of the ticketing Clauses (385-388) of the Police Act of 1862 was proposed to tenements in Binnie's Court, in Argyle Street, and 83 Drygate.

"It is no uncommon thing for fever cases to run a course of a week, or even a fortnight, before they are discovered in the houses of the poor; nay, it is to be feared that some are never discovered at all, and that medical assistance is only sought when two or three of a family have taken ill, and when, in all probability, contagion has been at work for weeks in the infected locality. From inquiries I am quite satisfied that many fever cases, even in the worst possible sanitary circumstances, in the most overcrowded houses, in the midst of neglect, filth, and wretchedness, are not, and some of these cannot be, removed to the Infirmary. I am equally well satisfied that so long as this is so, and so long as healthy persons are unwittingly or unavoidably exposed to the contagion of fever in overcrowded and ill-ventilated apartments, sanitary visitation can only be an imperfect check upon the spread of this disease. The strong convictions I entertain on this subject and the very decided support afforded to those convictions by the facts of the present epidemic, have induced me to recommend a more stringent application than heretofore of the new powers conferred by the Glasgow Police Act in two of the most notorious fever localities; and I shall be guided by the effect of these recommendations in making further efforts in the same direction. It is of importance that in the application of these stringent clauses there should be nothing ill-considered, nothing arbitrary or indefensible. I am, therefore, well content that these two cases should be fully and

[1] Dr. Gairdner's First Report, April, 1863.

clearly before the public as a basis for future action; and I hope that, by securing in advance the influence of free discussion and the support of public opinion to the measures proposed, they will be rendered both more safe and more efficient for the purpose in view—the gradual reformation, and in some cases reconstruction, of the houses of the poorer classes, in accordance with those conditions which can alone deprive epidemic disease of its most dangerous peculiarities."[1]

In concluding the special report on the Application of the Clauses referred to, Dr. Gairdner observes :—

"For the first time in the history of the City, the authorities have acquired power to signify to the proprietors the limits within which the population of small dwelling-houses of one, two, and three apartments must be restricted; and also, in certain extreme cases, to insist upon structural alterations in accordance with the Act. The Clauses of the Act here referred to have been framed after very careful consideration, and it is impossible to doubt that their judicious and considerate application, from time to time, to buildings, the state of which is demonstrably injurious to the public health, no less than to safety of the individual inmates, will be productive of great good. There is no social law more certain in its operation than that by which neglected or mismanaged property becomes dangerous, both physically and morally, to the community. The absence of the means of health and comfort has a tendency, in the first instance, to repel the industrious and respectable artizan; and sooner or later the temptation becomes irresistible to admit greater and greater numbers of a class having lower pecuniary means and less scrupulous habits of living; the gradual degeneration of the property and its occupants being equally injurious to landlord and tenant."

The machinery against overcrowding having been set in motion, and the provision of hospital accommodation being in contemplation, a further step is suggested in the Report for October, 1863. This was the provision of Reception Houses ("Houses of Refuge," Dr. Gairdner calls them) for the accommodation of the families of those who were seized with fever in excessively overcrowded apartments "during the period that might be necessary to secure them against infection in cases where it was found impossible to do so by removing the sick and purifying the infected house."

The need also for making provision for washing and disinfecting the clothing and bedding of the sick by the local authority is again insisted on.

This Report contains many vivid pictures of the Epidemic Areas of the period. The language of Sanitary Science to-day

[1] Second Report of the Medical Officer, July, 1863.

suffers in no small degree by reason of the inflexibility of its terms. A house is uninhabitable because it is damp, or defective in light and ventilation; it is structurally neglected so that defects in the plaster expose underlying bricks or laths. The terms are the same, but the conditions described vary. Let anyone familiar with the structure which may be described in the foregoing terms compare it with what is implied in the following sentences. "*In one court (in the Eastern District) a square block of building intended for a middenstead, has been roofed over and made into a dwelling-house. In another a room built for a wash-house has since been similarly occupied.*"

As we have said, throughout the Reports of the period the wretched character of the moderately and low rented house accommodation for the poorer classes of the population is frequently referred to in connection with the prevalence of disease among their occupants, and in 1870, Dr. Gairdner discussed the "Defects in House Construction in Glasgow as a Cause of Mortality" in the knowledge that public opinion was not yet sufficiently formulated on the question to support the radical changes necessary.

The question was not a new one to a Glasgow audience, indeed, in one form or another, it had entered largely into the discussions which, in former years, had preceded unification of legalised poor relief in Scotland. It finds notable expression in the writings of Rev. Dr. Thomas Chalmers, at the time when he was minister of St. John's Parish in Glasgow, and a most strenuous opponent to what he called "interference by the legislature into the sphere of benevolent relief." Chalmers' advocacy of the sufficiency of the parochial system without a poor rate is well known, and the success of his scheme in St. John's Parish amply demonstrated the strength of his contention. But his views on the need for sanitary reform have somewhat been lost sight of. To those familiar with his work, it need not be recalled that his political economy was founded on the New Testament narrative; and that he found therein a distinct cleavage between the method obtaining for relieving want and that for treating disease. "Nor is it difficult," he says, "to apprehend the principle of this distinction. A known provision for want, if it be want irrespective of character, is sure to create and multiply its own objects in every neighbourhood where it happens to be established—seeing that all who choose might make their way to it, by the accessible and inviting path of a little more indolence or a little more dissipation. It is not so with an asylum of disease, for which men will not qualify voluntarily. . . ." "What we have now stated is but introductory to the further statement of the fears

we at one time had for Scotland, and which are not yet wholly set at rest. A Bill was lately in progress through Parliament having for its single design the promotion of the public health, and especially among the lower classes of society—those, in particular, who are congregated together in the deep and dark and densely-peopled recesses of our larger towns. We trust that it will fully comprehend, at whatever expense, all the provisions which might contribute to the success of so beneficent a measure—as *drainage, and ventilation, and the minimum size of houses, and the proper width of streets and alleys; and withal the establishment of a medical police for the removal of nuisances, and even a cheap if not rather a gratuitous supply of professional services for the general population.*"[1]

Dr. Gairdner's paper is published in the Proceedings of the Philosophical Society, Vol. III. (1870-71), from which we take the following extracts :—

I beg to proceed to make some remarks upon defects of house construction, as they occur in Glasgow. We are all aware there has been a great deal of public attention bestowed upon this subject of late; and therefore it has occurred to me that, with the number of practical and at the same time scientific men who form this Society, it might be useful to put before you a statement or an argument tending to bring the question of house accommodation back, as it were, to its first principles—to shew what is, and what is not, the central idea of a house, and how that central idea of a house has been in times past, and possibly is even now, violated in this great city of ours. I am quite aware that the faults that exist are faults which have been in great part transmitted down to us from our ancestors, and that the cure of them will be a matter of time, and will require a great amount of public energy and public thought. I think that hitherto there has not been, perhaps, a sufficiently widely drawn attention either to the extent of the evil or to the measures that are regarded as remedial measures. And speaking as the organ, as one may say, of medical opinion, in so far as it has been called to it officially; I may say our difficulty has been all along the fear that our own position is not sufficiently secure—the fear and the certainty, indeed, that we could not propose, with any chance of carrying public opinion with us, measures of the extremely strong and radical order that are absolutely necessary to cope with the immense evils we have to deal with. Till we have public opinion with us—and this is not only having the arm of the law, as represented by the authorities, with us,

[1] See Section on "The Medical View of the Question" in the works of Thomas Chalmers, D.D., LL.D., Prof. of Theology in the University of Edinburgh, and corresponding Member of the Royal Institute of France.

but the large concurring force of public opinion—till then, I believe we shall be too weak to cope successfully with the evil; but I am not without hopes, from the great attention bestowed on the subject by newspaper editors and commissioners, by deputations from the Corporation to English towns, and from the various ways in which the attention of the public has been called to it—in a manner it never has been before—that the principles that lie at the bottom of the whole matter will now obtain a degree of consideration they have never hitherto had. Now, it is difficult to know where to begin,—the evils in our great towns are so many, the bearings of those evils are so intricate, the interweaving of the physical with the moral is so extremely complex. But perhaps we may begin at the fact of overcrowding—a primary fact, one recognised in every investigation into the state of great towns, from the time of the first inquiry by Lord Shaftesbury, then Lord Ashley, and Mr. Chadwick, about 1832 and 1834, down to the present time. We may take it as admitted that overcrowding is perhaps the greatest cause of disease in our great towns, and that it is also very intimately connected, in some way or other, with the social degradation and misery of a very large portion of our working classes.

It may seem paradoxical, but, nevertheless, I believe it is perfectly true, to say that overcrowding is both the cause and effect of a large number of those evils. It is, in the first instance, the cause, because populations come from remote parts of the country, with perhaps very imperfect ideas of domestic comfort, and with a tendency, therefore, to overcrowding, and are subject to inducements to overcrowding which are greater than those existing in the country. But the evil does not stop with the first generation, because the second generation is brought up under a set of mental and moral impressions, and under a set of physical insensibilities, so to speak, which tend to make overcrowding a worse evil in the second generation than in the first. Whatever the original cause of these and other bad habits, you may take it for granted that they tend to impress themselves indelibly after a time, on the whole nature, moral and physical, of entire generations of men. It may be said, without the slightest exaggeration, that there are scores of thousand of persons in this great city who have been so brought up that they literally do not know, and literally cannot feel, the value of house-room—of more space in the house in which they dwell; and they cannot even rise to the idea of the most limited kind of domestic comfort. Nay more; it is the case that they literally prefer discomfort—absolutely prefer overcrowding; they regard it in the light of a positive inconvenience to have more than one room for the

family, because, they say, "What is the use of other two or three rooms? you would simply have your neighbours coming and sorning upon you." It would simply be an inducement to the less well-housed to come in and eat up their family resources. Now, many evils result from this state of things; but I shall only mention four of the consequences of living in that condition of overcrowding and domestic discomfort. The first consequence is enormous liability to epidemic disease; and not only to epidemic disease, but to consumptive disease, and various diseases of the lungs; and, further, a literally enormous rate of mortality in young children in particular, partly, of course, from epidemic disease, but partly also from a great number of other diseases, especially nervous diseases, convulsions, hydrocephalus, tubercular diseases of the abdomen, and various other kinds of disease which we know to be destructive of infantile life. The second consequence is, that, from living in this state of habitual overcrowding, the sense of decency is injured inevitably, and ultimately it is lost altogether. The third consequence is, that almost inevitably a craving for alcoholic stimulants is generated; in many cases due not merely to bad habits, not merely to bad examples, and not merely to the neighbourhood of spirit shops, but due to the want of what we may call natural stimulants, which go with us all to make up the idea of domestic comforts. Of course, I do not mean that there may not be persons who, by dint of superior virtue, are able to preserve themselves almost under any circumstances from these evils. It is the internal discomfort, it is the dreadful want of fresh air and of anything to relieve the monotony and dulness of life at home, that drives many to the public-house. Instead of regarding the public-house as the creator of the evil in the full sense, as some of our more extreme teetotalers do, I think the public-house arises where the demand exists, and where there are none of those natural stimulants which help to make home a desirable residence. The fourth consequence of this state of overcrowding, in badly-constructed houses, is a great degree of moral degradation and of religious apathy. How should it be otherwise? How is it possible for the most elementary ideas of morals to be kept up, where husband and wife, and ever so many children of different sexes, or where husband and wife, one or two young women, and a male lodger sleep in the same apartment? How is it possible that the ministrations of the minister of religion can be in any way effective in these circumstances? How is it possible that the highest and the most refined transcendental idea, as it were, of human nature should gain access to homes of the kind that I have described? The thing is simply impossible.

We therefore put down moral degradation and religious apathy as among the ultimate consequences of this evil. Now, I anticipate at this point a certain objection to the views I am going to present. It will be said, "You have spoken of this as an evil of great towns; but has it not been proved over and over again, in the reports of the Sanitary Commissioners, that overcrowding is just as great and as rife in the most remote country districts as it is in the great towns? Is it not proved that the inhabitants of an Irish cabin in Galway, and of a Highland shieling in Lewis, are just as overcrowded, just as physically dirty, and their inhabitants physically living upon as low a scale of comfort as the lower classes in great towns like Glasgow?" But, on the other hand, it may be said "that overcrowding is always and everywhere an evil." It is not in the same sense or degree an evil in the isolated hut or row of cottages as it is in the tenement of houses in a great city; for in the great city there are several conditions that do not exist in the isolated hut or shieling, let them be ever so overcrowded—let the physical outside of them be ever so poor, and the interior ever so squalid. In the *first* place, in the town there is the overcrowding of the ground as well as of the room. There is not merely the overcrowding of human beings in the room or house, but there is the overcrowding to an enormous extent of the number of rooms and houses upon a given space of ground. The consequence of this is, that there is literally no possibility of wholesome occupation, exercise, and amusement out-of-doors on the neighbourhood of the homes. As to the most squalid Highland hut, there is the hillside to go to; there is the neighbouring burn to carry away impurities; there is the grass meadow, the riverside, the trout to catch in the burn for the children, and every sort of outdoor recreation in the midst of fresh air. In the town there is nothing of the kind. The evil of overcrowding in the town, as regards facilities for recreation out-of-doors, is therefore enormously greater than it is in the country. *Secondly*, there is not merely overcrowding of the ground space with houses and with tenements, but there is overcrowding of the tenements with rooms, and of the rooms with persons. As there can be no true occupation, amusement, and healthful recreation out-of-doors, so there can be no time, day or night, when the family is safe from invasion, and when the instincts of home can possibly be cultivated, in the middle of those great collections of human beings, in tenements crowded upon a small space of ground. In both these particulars our cities, and especially our Scotch cities—perhaps Glasgow above all other cities—have erred in permitting such constructions as make it simply impossible to preserve the domestic habits; and this

has been going on increasing in amount, from year to year, for at least several generations. It is true that the habits of the immigrants into our great towns are often aboriginally bad, especially where, as in the case of Glasgow, many of them come from Highland shielings and from Irish cabins. But then the effect of these bad habits is intensified, and in most cases bad habits are meanwhile created by the transference of these rural aborigines to the town habitations. Hence, from generation to generation, a progressive deterioration, and finally an almost total loss, of the instincts of the family.

Now, it is at this point that I approach, as it were, the theme of the present discourse. What I want to prove to you is, that, to a great extent, it is the house that makes, and the house that mars, the individual and social man, not to say for a moment that individual character has not a great deal to do in the matter,—not to say that the pure-minded, noble-minded man, with heroism in the blood and bone of him, with physical instincts of the most exalted kind, will not preserve himself pure from contamination in the midst of all these evils. But, speaking of the average of man, I hold that such as is the house, such will be the men. If you persistently keep up dwelling-houses that are inconsistent on a large scale with domestic comfort, you not only allow to grow up in these houses, but to squat in them, generations of men whose ideas of domestic comfort will go on deteriorating every year. Consider how much is implied in what I have called "the domestic instincts." How many of the noblest virtues are embraced in that category? Is home not for every one of us the real school of all the virtues? Is it not true that home, and everything that grows round the home, is the real God-appointed school for virtue, religion, everything that raises humanity above the beasts? Well, then, you cannot consider a house as a mere mass of stone and lime. You cannot consider it as just four walls. You must consider it in the light of a home to bring up a family in. If you establish in your cities dens (I have called them over and over again "fever dens," but let us say, in the meantime, dens) that are not fit for the dwellings of men, you may depend upon it that the inhabitants will grow up with the habits of wild beasts. I assert, without fear of contradiction from anybody who knows the state of the case, that in most parts of Glasgow, and of other great cities in Scotland, a healthy and well-trained family is not even a possible thing, from the overcrowding of the ground on the one hand, and of the houses and tenements on the other. These evils are constantly aggravated by the pressure of the rural population towards and into the great towns, whereby larger and larger proportions of the population

of the whole country are exposed to the deteriorating influences of homes in which it will be literally impossible to preserve even the traditions of healthy family life. Hence the rising death-rate, the increase of epidemic sickness, and deteriorating morals with respect specially to drunkenness, and of sexual immorality among the lowest classes in our great towns, at the very time—observe, I speak of the last fifty years—when the upper and middle classes have everywhere improved in their habits, and are less subject to the causes of mortality than they were half a century ago.

Here, then, is the problem you have to solve. When our middle and upper classes are rising in the scale, our lower classes are going down, and down, and down, and a larger number every year is pressing into our towns, to become part of the enormous mass of degraded humanity. Now, studying this subject from the simple point of view of sanitary reform, and dismissing for the time moral and religious considerations altogether—although I hold that the two cannot be separated—let us try to discover what is the minimum of house accommodation consistent with health, and, if you will, moral health; but moral health, not in respect to sin and crime, but merely in respect of the cultivation of the common instincts of humanity. I have discovered this minimum by asking what is the minimum of requirements which can be reconciled with the healthy development of the individual family. I take the family as the unit of society. If you can render your houses such as will conduce to the healthy development of one family, you may depend upon it that society at large will not deteriorate; but if, on the other hand, you cannot do that, society must inevitably deteriorate. It is not too much to affirm that the following eight points are essentials in a house. The first is *adequate cubic space* in the apartment; by that, meaning, of course, the sleeping apartment. This was intended to be secured under the Glasgow Police Act; but every one knows it has been very imperfectly secured by the legal minimum of 300 cubic feet for every adult and every person above eight years in the family, and 150 cubic feet for every person below eight years. The minimum allowance of cubic feet is far too small for a healthy existence; but it was so put into the Police Act—and I do not say unwisely—under the impression that any higher requisition than this would simply be more likely to be disregarded. Even this limited allowance, however, is not properly enforced, partly owing to legal difficulties and partly to the tenderness of individual magistrates, who have felt, not unnaturally, when poor wretches were brought up to be fined for living in over-crowded houses, and pleaded in extenuation that they could not

afford to get more house-room, reluctant to inflict a fine under such circumstances; yet the fining of the occupier has hitherto been considered the only way to meet the evil.

Now, I think this is beginning at the wrong end. The conviction has been growing in my mind from year to year, that *the only way to prevent overcrowding is to throw the legal responsibility for it on the owners*, and not on the occupier. It is the factor visting the property from week to week, uplifting the rents, who can, if he pleases, prevent overcrowding. He knows perfectly well the class of people that crowd into these houses, and he can, with comparatively little hardship, make them feel it to be an essential requisite that they shall not continue the practice of overcrowding. I believe that the powers of the law would throw this responsibility upon the owners and factors; but our Procurator-Fiscal doubts it. If, then, the powers of the law won't do it, let us get new powers, and devolve the responsibility upon the owners.

The second essential is the *means of separation and privacy for the sexes within the houses*. The first question that arises is, Whether separation and privacy for the sexes are possible under the condition of single apartment occupancies? That is a momentous question in Glasgow. I am not in a position to state positively—the next census will perhaps inform us—what is the number of single apartment occupancies in the city; but, from all I know, or have been able to discover, from my assistants and others, I believe that it is not much less than 35,000. At all events, it is between 30,000 and 35,000; or, in other words, you may say that probably something like a third of the whole inhabitants of Glasgow are living at the rate of one family to a room, and in some instances lodgers are taken in besides. Now, taken in this large way, I suppose no person here will have the slightest difficulty in answering the question, Whether separation and privacy are compatible with a single occupancy? Certainly not on a large scale; and yet, I think, it would probably prove an unwise measure to proscribe single apartment occupancies altogether, because you must recollect that families are not always large. A young man and his wife begin housekeeping without children. They go on for a year or two, and, while the children are young, there may be no violation of propriety or domestic comfort in occupying a single apartment, which they do with much greater economy and, if of prudent and saving habits, with a much greater power of saving up money for the future.

Then there is the case—and it requires peculiar tenderness—of widows and of old couples without children, or whose children have passed away or gone out into life. These are cases for single apartment occupancies; and therefore I should

be very sorry indeed to see an iron rule applied proscribing single apartment occupancies altogether. While, however, single apartments may be allowed to a certain limited extent, it is perfectly clear that tenements wholly or chiefly composed of single apartments are quite inadmissible in a well-regulated town, and ought to be put down without the slightest remorse. Yet in Glasgow, the manufacture of single apartment occupancies, out of buildings originally constructed for houses of two or three apartments, has been going on for many years, unchecked by any process of law; while vast numbers of tenements, originally built otherwise, have been deliberately degraded, with a view to profit, into warrens of single apartments. In very few instances has a contrary process taken place—viz., the destruction or removal of such, to replace them by more healthily-constructed houses.

The third essential is *a proper means of access*. To judge by the tenements at present existing, one would say that proper means of access have literally been considered of no account at all by our Glasgow builders. The whole traditions of house architecture in Glasgow, the whole ideas of Glasgow builders, seem to me to have been based on the principle that the mode of access to rooms was not of the slightest consequence, provided people were able to smuggle themselves into them—in fact, that the cheapest mode, the cosiest mode, the darkest mode, and the dirtiest mode, was absolutely to be preferred. The usual plan of the Scotch common stair, even in the houses of the middle classes, has been all along essentially bad—a receptacle for foul air, usually closed in at the top, and receiving the effluvia from all the houses on the stair, the lobbies of the individual houses being internal, and almost always unlit, except from the rooms, and therefore close, dark, and stifling, and the water-closets usually ventilating into, and being lighted from, the common stair. This is the plan of thousands of houses in Glasgow reputed fairly decent and wholesome, but which are simply a collection of sanitary abominations, and ought to be restrained and disallowed by law in newly-built houses. But when the same principle of internal lobbies or corridors, abutting upon or opening to many rooms, without separate ventilation and lighting, is carried into the tenement houses of the poor, and especially into houses of single apartments, all the evils above indicated, with the exception of the water-closets, of which there are rarely any in such houses, are immensely exaggerated in effect, and the facilities for the communication of infectious disease are correspondingly increased. Yet such is the construction of tenement houses. Until within the last two or three years, no builder ever thought of constructing a tenement

house in Glasgow upon any other plan. The sanitary evils have been increased to the very utmost in many cases by the accumulation of numbers of ill-ventilated and overcrowded single apartments, with corridors wholly devoid of separate lighting and ventilation, and with internal closed common stairs, so that the whole tenement is pervaded by an atmosphere common to all the houses, and literally loaded with the germs of disease. This is the leading and all but universal error of house building in all the Scotch towns; and until it is thoroughly and systematically corrected, there cannot be a moderately healthy population. I may remark that, about seven years ago, in a course of lectures I delivered in Edinburgh upon public health, and which were afterwards collected into a volume, now out of print, I commented upon the fact, that while in certain marked instances the English towns were lowering in their death-rate the Scotch towns were almost universally increasing in their death-rate, and connected that fact in my own mind with this feature of Scotch house construction, which does not prevail in England at all, where almost invariably a tenement is technically called the house of an individual man, and there is some individual person responsible for it; whereas in Scotland no one is responsible but the factor. The question has been raised by a zealous and energetic gentleman, whether some good might not be done by causing, or enforcing by law, that in each of those great tenement houses there should be some resident tenant who should act as a kind of *concierge* or porter and preserver of the peace and cleanliness of the whole. The Scotch system of building you may consider as a draft from the Continent. It was owing, I believe, to our greater intercourse with France that this system came in, as opposed to the English one; but then you observe, in the Continental system, the building always has its *concierge*, who is responsible for the keeping of the whole; whereas our Scotch common stair is just simply a mass of chaos and confusion, with no one to keep order.

The fourth essential of a house, in my opinion—keeping in view a family as the occupants of the house—is proper *lighting and ventilation of rooms, as well as of lobbies.* The mere structure of Scotch houses leads to the neglect of that: and neglect caused by mere structure has not been removed by ordinary means of ventilation; but in newly-constructed houses I believe it is quite possible, as has been done in London, to introduce a shaft between the walls of the building and the chimneys, giving rise to a ventilating current that would draw off from the rooms; and even in old houses in the city I have seen considerable improvements effected, consequent on a simple expedient—one introduced by Mr. Hoey,

father of the secretary of the section of Sanitary and Economical Science; and I have no doubt that even our old houses could be improved by careful and diligent consideration applied to this matter. But, besides, the windows have often been too small, or have not been made to open, or have been built up by walls interfering with the circulation of air. Box-beds or dark closets have been used as sleeping apartments, and underground dwellings still exist which ought to be shut up.

A fifth essential is *adequate privy accommodation.* I regard this as a first necessity of healthy domestic life in a town. No habitation can be considered admissible in towns where accommodation of this kind is not provided, so as to be easily accessible to women and children, as well as to men; and so far brought into connection with individual tenancies as to secure real privacy, as well as the responsibility of individual householders for cleanliness and the prevention of nuisance. It is scarcely necessary to point out that, in this particular, our Glasgow houses, even of the respectable working classes, have often been systematically deficient; and in the tenement houses of the lower working classes, it seems as if the very idea of privy accommodation had been deliberately abandoned. We know, in fact, that in a past generation the midden heap in the open court was often the only form of deposit for filth, contemplated by the builders of houses intended to lodge hundreds of human beings, and in very many instances the ground has been so occupied, and the structure of the houses has been so complicated, that neither without nor within the house has it been found possible to supply the deficiency. The system of public privies is no doubt an advance on this absolute want; and you have only to look to the reports of Dr. Neil Arnot and Albert Smith to see that the absolute want of privies was the rule thirty or forty years ago. But the system of public privies does not properly supply the want; indeed, a public privy is a contradiction in terms, and is quite inconsistent with a due regard to the cultivation of the domestic habits. I do not here enter on the disputed question, how far water-carriage, on the one hand, or other systems of removal, on the other, are the preferable modes of disposing of excrementary filth; the one point needful to be maintained at present is, that the privy should be really what its name implies, and not, as it is throughout the poorer quarters of our Scotch towns, a common resort of the men in all the families of a populous tenement, while women and children almost invariably refuse to go to it. But how this improvement is ever to be accomplished, except by a complete change in the views of builders, or of the authorities controlling builders, as to what are the domestic

essentials of such tenements, I confess I cannot see. In houses constructed for the poor, we are in this dilemma: to admit the water closet, or any form of privy, into the interior of the house, is simply to court the diffusion of unwholesome gases; while to rule in favour of accommodation outside of the house, is to sacrifice the whole idea of decent retirement and make the privy a place for the deposit of miscellaneous filth of a whole village of persons, many of whom are already lost to all self-respect, and perfectly careless both of their own comfort and of that of others.

The sixth essential of a house is *an adequate water supply.* Upon this subject I shall say little, because, by the aid of the Water Commissioners, Glasgow has now been supplied with water almost as effectually as the existing nature of the houses admits. But here, too, the construction of these tenement houses has stood in the way of the supply of water. In the house represented by one of the diagrams before you there was no water supply until quite lately; and although it is a house of sixty or seventy families, there is no water except in the close. The reason was, that the whole interior of the lobbies was so utterly dark that to put a water supply in any lobby or landing would simply be to keep the place in a perpetual state of slop and puddle; while, on the other hand, to put water in the rooms, would bring in the objectionable principle of having water-sinks, and therefore the possibility of regurgitation of gases in single apartments and bed-rooms. Hence we were obliged to decide that no water supply should go into that house of six storeys high until it was remodelled.

The seventh essential of a house *is baths and wash-houses.* Upon this point I shall also say very little, because the propriety of the thing is almost universally recognised, and it is only owing to adventitious circumstances that efforts have not been made by authority to supply the want hitherto. But it will require careful consideration even now, not only on what principle a public bath is to be managed, but also on what principle you are to supply wash-houses to the inhabitants of these enormous tenement houses. As a rule, these people do not like to go to public wash-houses at a distance. They much prefer to wash in their own apartments; and if you want to seduce them out of that habit, and thus give them facility for washing upon a larger scale, you must have wash-houses placed in such proximity to the rooms, that one wash-house is only used by a limited number of persons. That is nearly impossible in the old tenement houses of Glasgow. Here again, therefore, we find the same difficulty, the construction of the houses having been such as not only not to supply the first wants of domestic life, but to make it impossible, by any

subsequent attention to details, to supply those wanting elements in anything like a reasonable and useful form.

The eighth and last particular I shall touch upon as an essential to a house is *airing and recreation ground.* Now, perhaps even some persons here will be inclined to say, "Oh! this is quite an extravagant view of the subject. Have we not good broad streets? Airing and recreation grounds are not always attached to the houses of the better classes,—why have them for the poor? This is an altogether Utopian idea!" Well, I say, from the very fact of placing this among the essentials of a house, it will appear that a verdict of condemnation is passed upon the entire system of multiple occupancies within vast tenements, such as exist in Glasgow and most of the other large towns in Scotland. Yet the verdict is not too severe, where it can be proved that over considerable areas 600 to nearly 1,000 persons—men, women, and children—live together, in what are supposed to be families, upon a statute acre of surface. What kind of family life, it may be asked, is even possible under such circumstances, where the children have literally no place to meet each other, except in these dark lobbies of the houses? or, if they go out of them, no place whatever except in the middle of the street, and this in parts of the town where thousands and tens of thousands of families are brought together, and where there is literally no street that is not a crowded thoroughfare; where the houses have no back yards, and where, excepting the street and the close, and the nasty, stinking, dirty lobbies, there is literally no place for children to play, or in which old people can take a little exercise.

HOSPITALS: THEIR ORGANISATION, ETC.

In the direction of hospital provision also the Local Authority were obtaining new aspects of the extent of their responsibility. During the years '65-'72 Dr. Russell, as Physician Superintendent of the Parliamentary Road Fever Hospital, issued five reports. It was characteristic of his work that no opportunity should be lost of marshalling the facts of observation so that general principles of wide application should be disclosed rather, as it were, by a process of evolution than as a distinct act of logical inference. It must be remembered that at this time the economics of hospital service were but in their infancy, and municipal acquaintanceship therewith entirely unknown; nor were principles of construction better understood, while the popular conception of nurses and their qualifications had been, in quite recent years, crystallised in the pages of Mr. Charles Dickens. It was natural, therefore, that the reports issued

from Kennedy Street should deal with such questions as hospital construction, organisation, dieting, and nursing as questions of the first moment, and rarely has their importance been better urged.[1] The introduction to the first report indicates the earnestness with which the work was undertaken and the level of efficiency in administration aimed at.

"In thinking over the plan of the following Report, I had not gone far before it became apparent that I could not take for a model the ordinary form of such documents. Hospital Reports in general merely narrate what has been accomplished by an institution which has been long in existence, the internal economy of which is thoroughly known and well established, where the management is, so to speak, public, and the responsibility for its good conduct distributed over many. The subject of the present report is not such an institution. It was erected to meet an emergency—entrusted, without constitution, or staff, or rules of conduct, to the care of one person—and opened with no certain prospect of duration. Excepting to a few, the principles adopted in the working of the Hospital, and the various incidents of its management, are unknown. I feel, therefore, that I occupy the position of one who ought to narrate, with all the aid of diaries, copies of correspondence and despatches, the results of a distant administration rather than that of one who has been working under the immediate observation of those to whom he is responsible."[2]

ESSENTIALS OF SUCCESS IN HOSPITAL MANAGEMENT.

The importance of an efficient and reliable nursing staff is now so well recognised that one must read the description of the difficulties then existing in order to appreciate their magnitude.

In the earlier Report these are dealt with at considerable length, and are even now of interest, because they formed the basis of "A plea for the establishment of a Nurses Home and Training School in Glasgow," which inaugurated a new era in hospital and private nursing.

The successful management of a hospital depends almost entirely on the careful pre-arrangement of two departments—*the Kitchen* and *the Nursing*. Financially, the larger proportion of the working expenses falls under these heads. Medically, no advantages of situation, of professional skill, or sanitary arrangements will make up for defective nursing; and it is absolutely necessary that the dietary be carefully considered and planned, so as to aid medical treatment and at the same time be economical.

[1] The Reports also contain much valuable clinical material, some of which is included in the Chapter on "Clinical Studies."

[2] From Introduction to First Hospital Report, 1865-6.

All this is most especially true of a fever hospital. With regard to the *Dietary*, there is now no doubt that in the judicious administration of suitable food lies the secret of the successful treatment of fever. While actually in the heat of the disease, the principle to be remembered in the choice of diet is, *the maximum of nutritive power, combined with digestibility proportioned to the enfeebled stomach of a fever patient.* It is, therefore, a grave mistake to supply articles of inferior quality. The whole strength of the dietetic resources of the hospital ought to be spent upon the first ten days of a patient's residence. Life or death is the question decided in that time.

"The second of the two departments, on the careful pre-arrangement of which the successful management of a hospital chiefly depends, is the *Nursing*. I shall take this opportunity of proffering a few remarks on the general question of the education of nurses. This I am the more anxious to do because the subject is one which, with all deference be it said, does not receive that attention it merits either from the general public of Glasgow or from the managers of its public institutions.

Two circumstances render the maintenance of an efficient staff of nurses in this Hospital unusually difficult. It is a *Fever* Hospital, and the number of respectable women, willing to become nurses, who have had fever, is small; and of those who have not, few will encounter the danger, which, as our own experience has proved, is not exaggerated. It is also a *temporary*[1] Fever Hospital. All risks being run, no prospect of permanent employment could be held out to any one: so that, with such a prospect, an engagement at a half less wages was preferable. Still, making every allowance for the difficulties peculiar to my present position, my experience elsewhere, and all I can learn of the experience of others, is of such a nature as to convince me of the urgent need for pressing upon public attention the importance of a supply of good nurses and the present want of it. As things are, nurses have no organization as a class, and no *morale*. The popular idea, particularly of a hospital nurse, resembles that of a washerwoman—drinking is inseparable from both. The idea is only too true, in fact; and its very existence and truth react against any individual effort to raise the standard of character. Indeed, I often fancy good people are amused while listening to my complaints, and surprised that I have not yet learned to believe that drink and

[1] By the Police Act of 1866 the Municipality bound themselves to provide and maintain Hospital accommodation for Infectious Diseases.

dishonesty are essential properties of a nurse. I admit that at present nursing is the last resource of female adversity. Slatternly widows, runaway wives, servants out of place, women bankrupt of fame and fortune, from whatever cause, fall back upon hospital nursing. When on a rare occasion a respectable young woman takes to it from choice, her friends most likely repudiate her, her relatives resort to various ways of concealing her whereabouts. . . . For all this we have ourselves to blame. Until our nurses have conferred upon them the dignity and *morale* of which a special education, special organization, firm and kind moral supervision, with high pay during active service, a home when not actually engaged, and a superannuation fund to look forward to in old age, we never shall have good nurses—or if we have them, we don't deserve them. Fortunately we do find good nurses, as good as any system could produce; but they attract the eye here and there by their stability amid a succession of waifs and strays, which float in and out of the institution as each month comes and goes. Instead of having a stock of nurses in different stages of their education upon which to draw when necessary, the present state of things is this:—Our large parochial hospitals are entirely left to the care of pauper nurses, the best that can be chosen of a bad lot—and well some of them do their cheerless, thankless task; but having, as a rule, no good to say of them, I prefer to be silent. Where paid nurses are employed, after passing in review a host of women of the sort I have truthfully described, a 'likely' person is selected. With no better testimonial of fitness than that of being 'likely,' she is put at once into a ward as day or night nurse. She certainly has received no previous instruction in the art; she may never have given a cup of cold water to a sick person—never made a poultice or administered an enema, or seen a person die—as once happened in my own experience, when a nurse, from sheer ignorance, told me a patient had 'fallen quiet,' who was actually dying! She may be the best material in the world to *make* a nurse out of; but if she providentially becomes one, it is more a freak of nature than the result of design—like Topsy, she must have 'growed.' I have never seen any systematic effort made to instruct a nurse. The visiting physician makes remarks to the student—the house-surgeon teaches the dresser bandaging and the putting up of fractures; but there is no such thing as educating the nurse. Yet I have seen, for example, a case of secondary haemorrhage in a surgical ward, where, had the nurse been taught to put her thumbs over a certain spot, and press firmly, the bleeding would have stopped; but she never had been taught—she ran for aid—and in a few minutes the patient was dead! I believe

that many fever cases would be benefited by the constant presence of a doctor, to give and withhold stimulants from hour to hour according to the pulse and general symptoms. If so, how important must be the intelligence and well-informed judgment of the nurse who alone is always beside the patient. Nor is it the patients merely who profit by the services of a faithful nurse. The amount of waste which one who is dishonest or undutiful may cause or encourage, and therefore the economy which one who is faithful may promote, is incalculable—to say nothing of the economy of life, which is the real end to be served by hospitals, and which, as a rule, is more controlled by the nurse than the doctor; that is to say, a fever patient with a bad nurse and a good doctor has a worse chance than one with an indifferent doctor and a good nurse."

REQUIREMENTS OF PRIVATE NURSING.

"I cannot pass from the advocacy of the cause of Hospital Nurses without remarking that efficient private nurses can never be educated save in Hospitals, and that, therefore, until a better system is adopted for the nursing of hospitals, private nurses will exhibit the same defects. If the public were open to no other argument than self-interest, which I do not believe, then no better case could be made out than that for the systematic training of Hospital Nurses. In the endeavour to supply ourselves, we have obtained many painful glimpses of how the public are supplied. I have in my mind the case of a woman who had the best of private nursing, who was engaged here simply on this ground, and was sent by us to Bridewell for theft; and more than all, as we now know, before she obtained this position as a private nurse, she had been in prison on a similar charge; and more still, she has already got employment as a nurse in another city. The scarcity of trustworthy nurses, especially for infectious diseases, is shown by the frequent applications made to the Matron for aid in their search by persons sent by the leading practitioners of the city. All this arises from the want of organisation. Living here and there in bad localities, exposed to temptation, and struggling with poverty, private nurses are as much to be pitied as blamed. They ought to have a headquarters when disengaged, where they might report themselves and be reported on by their employers, and whence they might be taken with a certainty that their history and character are known, and they themselves are trustworthy.

It may encourage those who feel interested in this matter to say that I feel convinced that, even for a fever hospital, a class of women superior to any hitherto employed as nurses

may be found by holding out adequate inducements. In the case of general hospitals the task would, *a fortiori*, be much easier. We were early forced to the conclusion that two classes of applicants were not to be received at all—those who had been in a poorhouse, and those who had been in other hospitals. We found it best to engage women of good character who knew nothing about nursing, and to educate them. We put Miss Nightingale's little work into their hands as a text-book; and, fortunately, the one nurse who remains of the set we started with is a woman of great experience, well able to instruct. Amid the many demands upon my time during the winter, I regret that more systematic means of instruction could not be adopted, but no opportunity was lost, and I hope during the summer to be able, by more special means, to increase the efficiency of the staff. . . ."

EDUCATION OF NURSES.

"The special means so much enforced in last Report for the education of the nurses were kept steadily in view throughout the year. Through the liberality of the Board a small library has been provided for their use, numbering above eighty volumes. It contains, in addition to works of general interest, such simple treatises on human anatomy and physiology as that published by the Messrs. Chambers for the use of schools; and during the winter they had an opportunity of seeing a set of large diagrams which the late John Henderson of Park was in the habit of lending for occasional use at popular lectures. . . . I have also put into the hands of my nurses note-books, and encouraged them to observe and record the various changes in the condition of the patients during their period of duty, the effects of the medicine administered, &c., with the result of cultivating habits of intelligent observation, and creating an amount of interest in their duties which could not otherwise be expected. The only difficulty has been in procuring the material which can profitably be subjected to this regimen. I only regret that, both from the smallness of the staff and the difficulty of recruiting it, so few come under the influence of the system. If prosecuted on a large scale in general hospitals, where the danger does not deter the sensible and intelligent from entering upon the profession, I am satisfied the result would be so evidently good that hospital surgeons and physicians would require for a nurse something more than a tidy woman with a white apron before her, and we should hear no more sneers at the idea of *teaching nurses anatomy*."

DIETARY.

"Food must be given judiciously in small quantities from hour to hour, day and night, without distinction. One patient is stupidly sleepy, and must be roused now and then to take milk or beef-tea, not waiting until he asks it; another is delirious, perhaps violent, and must be soothed, and only as a last resource restrained, which is the first notion of a bad and lazy nurse; another is obstinate or full of notions of poison in his drinks, and must be coaxed, or cheated, or overcome, in any way which will result in getting the nourishment into his stomach. Apart from such peculiar incidents, the majority, even in the ordinary course, are restless—tossing the clothes off, and requiring them to be put kindly on again—crying for drinks, and needing that they be given with a soft word, not with a scold for the trouble of it—in many respects being as helpless as infants, while yet having the weight and unwieldiness of adults. There is, I assert, no sort of nursing so laborious and exacting as fever-nursing. Let any one who would be convinced of this look into a ward in each department of the Royal Infirmary at any time, but especially at night. As a rule, in the medical and surgical wards things are quiet. The night-nurse may keep her seat, and give a draught of water when it is asked—help to shift out of an uneasy posture, or administer the medicine at the prescribed hour, and do her duty well with little labour. But in the fever wards there generally are noisy delirium, and distracting calls from various quarters, and constant occasions for lifting and turning, and patients for whom there is no motion of the body for any purpose, or to any extent, without aid or actual lifting as of a dead thing—when duties have to be performed, gently and with tenderness, from which naturally one would shrink. Indeed I have often stood at midnight and looked upon a ward full of males, mostly adults—one strong and violent, and strapped down—others helpless and dependent as infants—others restless, and no sooner calmed than up again, burning with some wild fancy; and then wondered at the courage a woman must have to pass the long hours of a night watch alone in such company, and still more at the rarer gentleness where such courage exists, which must combine with and soften its manifestations. Women enough are to be found who are callous and hard, equal to anything; who flock to a fever hospital, who protest their want of fear, who have had the 'fivver' repeatedly, and whose faces seem incapable of kindly emotion; who by sleeping draughts and strait-jackets make things snug, and enjoy a quiet sleep during the night—who

nevertheless through the activity of their imagination and the extent of their 'experience' are able to give a marvellously natural and graphic account of how the patient 'passed the night' to the physician at the morning visit. We have depicted the harassing attentions required of the fever nurse. But suppose her to be one of this sort—suppose she neglects her duty, goes to sleep, gives no drinks, no medicine, no wine —suppose she even drinks the wine: how can the delinquency be detected? The fever patient is usually stupid and incoherent; and even when most intelligent, his statements cannot be safely trusted. But, indeed, one never hears of complaint even in such circumstances. A shrewd eye may see it written on the sunk face and parched tongue, and on their poor bodies in bed-sores; but otherwise a bad fever-nurse is without a witness against her. I might show further how much independence of judgment, how much manual dexterity in certain delicate operations which she ought to perform, are required to make a good fever-nurse; but I have already said enough to direct the attention of those who have fever wards or hospitals under their care, in the most pointed manner, to a scrutiny of their nursing as a part of the treatment of fever which lies close to the secret of success."

HOSPITAL CONSTRUCTION.

"The only disadvantage of the pavilion system is the area required for a hospital of any great extent of bed accommodation; and this is, financially, a serious matter in or near a large city. Considered as to mere fitness for the treatment of various infectious diseases, there is no doubt that separate buildings, conveniently near to one another, yet perfectly isolated, and preserved from infection by the intervention of open air, are much to be preferred to a system of wards piled one above another, separated merely by floors and partitions, and united by a common stair. Another practical advantage is the readiness with which patients can be transferred from the van to the ward, without being carried up flights of stairs; and also the tempting ease with which the convalescents can reach the open air for exercise without fatigue or the risk of meeting, in a confined space, the convalescents from any other disease which is being treated under one management. There has consequently been no instance of the intercommunication of such highly infectious diseases as small-pox, scarlet fever, or typhus, with each other, though all have been under treatment at once—a mishap which is not rare in hospitals differently constructed. Within the individual wards, also, the ventilation has stood very severe tests. For, to say nothing

of their freedom from smell and sense of closeness, a very thorough test of the speedy dilution and dissipation of the fever poison by fresh air is afforded by the fact that I have treated all my cases of gastric fever, as well as such cases of pneumonia, bronchitis, and other diseases sent in by mistake as were not dismissed to the care of the parish or returned home, in the open ward with the typhus cases, as long as they were confined to bed, only taking care to *shift them immediately they became convalescent* to another part of the house. They were thus prevented from going to the fever, and in no instance has the fever come to them. A case of enteric fever, in which the patient was inadvertently put into the bed of a typhus patient, caught that fever. The Matron, also, I am thankful to say, though she performs her duty most efficiently, spending some time daily in the wards, has hitherto escaped, though she never had typhus. All this shows that very close contact with the persons of the patients is requisite to impart the poison in a form sufficiently concentrated to be infectious. It was in reliance upon this that Dr. Gairdner advised the admission of the 'relatives, and especially very near relatives,' in certain cases, and under certain conditions.[1] I have not met with any instance of infection attributable to this source, though, seeing that in most instances the fever is already at their houses, it would be difficult to trace the origin of fresh cases to the wards. Having spoken of this concession, which being novel was partly experimental, I may state that otherwise it has caused no inconvenience to us. It has been a source of gratification, as was anticipated, to many. It uncovers the usually mysterious interior of a fever ward, and leads to contentment regarding the issue of the illness, whether it be life or death, as the relatives see the patient is comfortable and well cared for. I also allow them to fetch little proofs of their thoughtfulness, such as biscuits, oranges, &c., provided they are all passed through my hands to the nurse. I have not found the privilege abused above five or six times by the hundreds who have been admitted; and as to corrupting the nurses with drink, &c., that is a thing which, as the staff

[1] (Note by Dr. Gairdner in submitting Report.) This innovation led to remonstrances, at the time, from one or two of my medical friends, who regarded it as being more or less dangerous, on the ground of the probability of infection. I am fully persuaded, however, that the very slight, indeed almost inappreciable risk from this cause (admitting in theory that there may be at least some risk), is much more than compensated by the very important advantages here referred to by Dr. Russell. It is, indeed, a most extreme and (so to speak) superstitious view of fever infection, which would strain the consequences of the doctrine to the point of preventing all access of the public to a fever ward; and it would not be difficult to point out many evils arising from such exclusion far more serious than any conceivable amount of danger from the practice adopted in the City of Glasgow Hospital (W. T. G.).

improved in general faithfulness, became less and less likely. Indeed, only one such case has been reported to me."

DEFECTS IN EXISTING POLICY OF HOSPITAL PROVISION.

Indeed, it seems to me that the hospital treatment of fever in Glasgow has hitherto been carried out on principles which are in every respect erroneous. Looking back over the history of successive epidemics which have passed over the community wave-like, with intervals of remission, we find that each wave has been met by expedients extemporised in the midst of its onset. The money expended has been drawn from the public purse by different channels. Whether in the form of Parochial or Police Assessment, or of voluntary contributions to the funds of the Royal Infirmary, still the funds have been derived from one purse. Two evident disadvantages attend this *pro re nata* method. Large sums of money have been spent on perishable erections, and on the administration of those erections. The immediate crisis being passed, those temporary hospitals have been dismantled and their officials dispersed, leaving the City, after all, with nothing to represent the past outlay. Not only so, but valuable time is lost in hesitation, tampering with a disease which, being grappled with at once, might have been "stamped out," or greatly mitigated. We may arrive at a just estimate of such a method of dealing with fever by supposing the same principles to be applied to the City Fire Brigade. If, during a few months, no fire had broken out, and, urged by a popular cry of economy, our civic rulers sold their fire-engines and disbanded their staff of firemen, then half the City might be burned before the fire-engines could be reconstructed and the brigade reconstituted. Just so it is with our provision for the treatment of fever. One winter's epidemic seizing upon the community will absorb the entire saving of years in which fever has been comparatively absent. One generation is economical, but only at the expense of another. Let us apply the same principles to the economics of fever as prevail in ordinary business transactions. The loss of one year is taken into account with the gain of another, and while the balance of one year may be unfavourable, the balance of a series of years displays a profit. These ordinary business principles have never yet been brought to bear on the management of fever in Glasgow; and the consequence is, that during the past twenty-five years an amount of public money has been expended through various channels which, if concentrated on the erection and maintenance of a permanent hospital or hospitals, would have placed the community in the position of being always prepared, and, taking one year with another,

would have resulted in a clear saving. There are also advantages which cannot be represented in sums of money; and it is true that some disadvantages are more apparent than real. A fever hospital standing empty is being purified for future use. During the moderation of the disease, the wards may be occupied in rotation. Above all *it exists*; and in place of an intermittent outpouring of money on temporary and imperfect preparations, the public have no doubt a stated annual expenditure, but also permanent efficiency. The time for deliberating about a Fever Hospital is during the interval *when there is no fever in the City*. We surely do not require to *see* the disease actually ravaging the people before we can be convinced that it is necessary to spend money in providing accommodation for its victims.

CHAPTER III.

GENERAL RESULTS: 1875-1894.

DEVELOPMENT OF ADMINISTRATIVE ACTION

THE last of the great Epidemic prevalences of Typhus Fever had occurred in Glasgow in the year 1869-70, when over 2000 cases were treated in Kennedy Street Hospital; and the administration was now at liberty to develop its attack against other forms of infectious disease.

Early in the present period, co-operation with the School Boards was invited in order to obtain early information of infectious diseases among school children; popularly worded leaflets on the management of Scarlet Fever, on the law regarding infectious diseases, and on the care of children were issued; smoke testing of drains was introduced; methods of refuse removal reformed; District Baths and Wash-houses were provided.

The beginning of the period also saw considerable displacements of population from insanitary areas, and the establishment, by the Improvement Trust, of Model Lodging-houses.

In the later years of the period the first installation of a system of Sewage purification was opened at Dalmarnock, and a beginning had been made with the provision of children's playgrounds.

The average death-rate of the years 1873-4-5 was 30.6; of the years 1892-3-4, 21.9 per 1,000.

The narrative in detail is now continued from the volume on "Evolution."—(ED.)

This period reaped the first-fruits of the steady work of the Sanitary Department and the operation of the City Improvement Act. The campaign against infectious diseases was pushed home. The ordinary "Fevers" having been subdued, attention was turned to the now more destructive infectious

diseases of children. A system of co-operation with the School Board to prevent their dissemination through schools was established. In olden times the highest demand of reformers was that there should be disinfection of house and clothing, &c., after removal to hospital. Under the new regime the practice as regards clothing was extended to washings during the currency of cases of fever treated at home. The systematic attack on the (so-called) minor infectious diseases meant, therefore, not merely hospital treatment where possible, but a vast

1875-1884.

Mean Population, 511,302.

	SANITATION.		HEALTH.
		1875.	Milk Epidemic of Enteric Fever—Washington Street, Pollokshaws Road, and Kingston.
1876.	Hospital Treatment of Infectious Diseases wholly in the hands of Municipality.		
1871-79.	7 District Model Lodging Houses erected.		
1877.	Small-pox Hospital, Belvidere, opened.	1877-78.	Milk Epidemic of Enteric Fever—West-End.
,,	*Streets Improvement Act.*		
1878.	*Public Parks Act.*		
1878-84.	5 District Public Baths and Wash-houses erected.		
1879.	DAIRIES AND MILKSHOPS ORDER.		
,,	Fulwood Moss leased.		
1880.	*Improvement Act Extension Act.*	1880.	Milk Epidemic of Enteric Fever—North and Central.
1881.	First Refuse Despatch Work opened.		
,,	Arrangement made with Registrars for Returns of Vaccination Defaulters.		
,,	Resolution to admit all Citizens free to Hospitals (April).		
1882.	Systematic Drain Testing begun.		
1883.	New Municipal Washing and Disinfecting Establishment opened at Belvidere.		
1884.	Second Refuse Despatch Work opened.	1884.	Milk Epidemic of Enteric Fever—Hospitals.

Ten Years, 1875-84.		*Ten Years*, 1875-84.	
32 Articles Washed, &c., per case of Infectious Disease registered.		Birth-rate,	39·4
15 "Nuisances" removed per annum per 100 houses inhabited.		Death-rate,	26·9
		Highest Death-rate (1875),	30·8
Two Years, 1883-84.		Lowest do. (1879),	24·6
683 Drain Tests per annum.		Death-rate under one year per 1000 born,	150
		Death-rate, Zymotic Diseases,	5·05