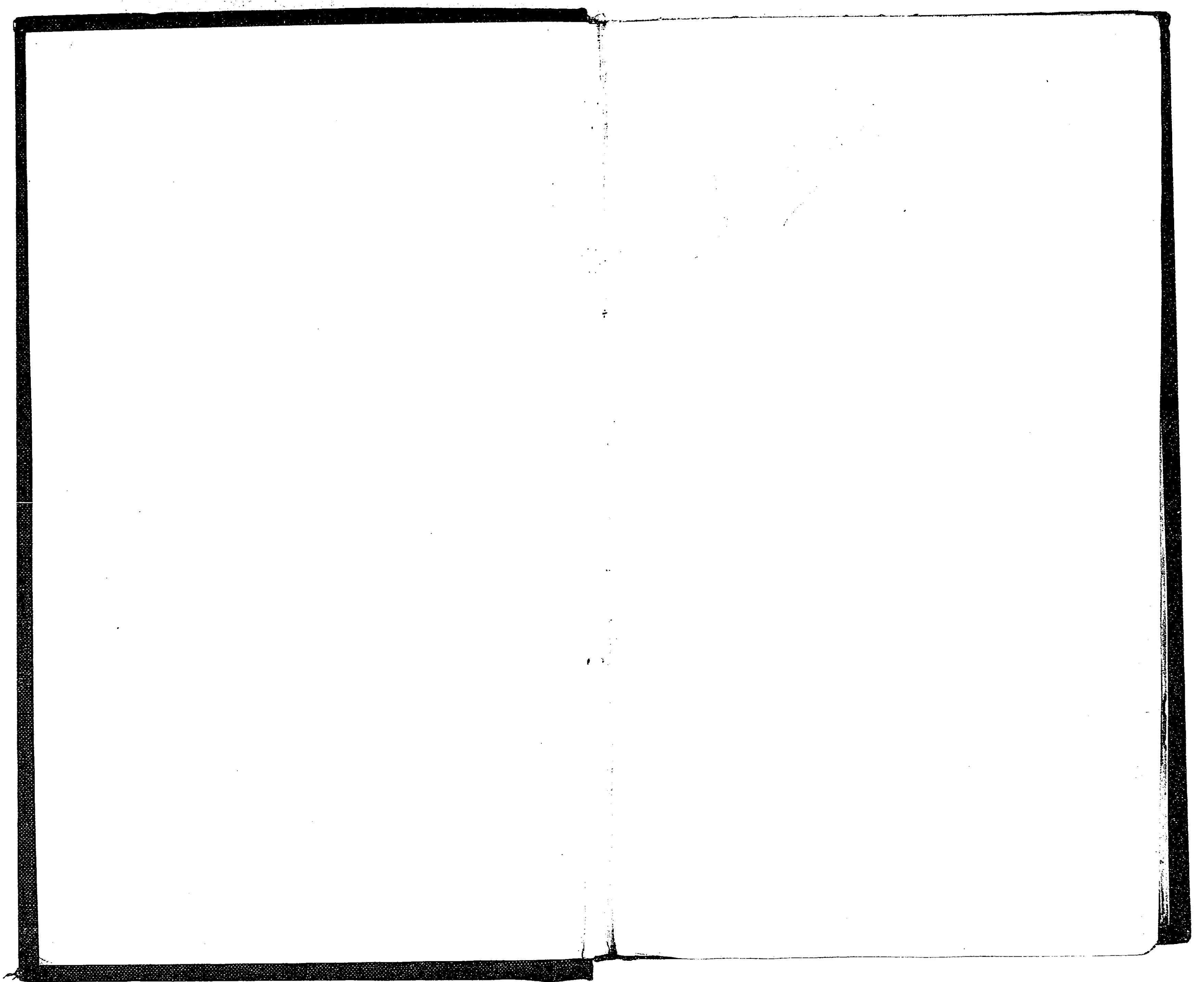


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PUBLIC HEALTH ADMINISTRATION
IN GLASGOW

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PUBLIC HEALTH
ADMINISTRATION IN
GLASGOW

A MEMORIAL VOLUME OF THE WRITINGS OF

JAMES BURN RUSSELL

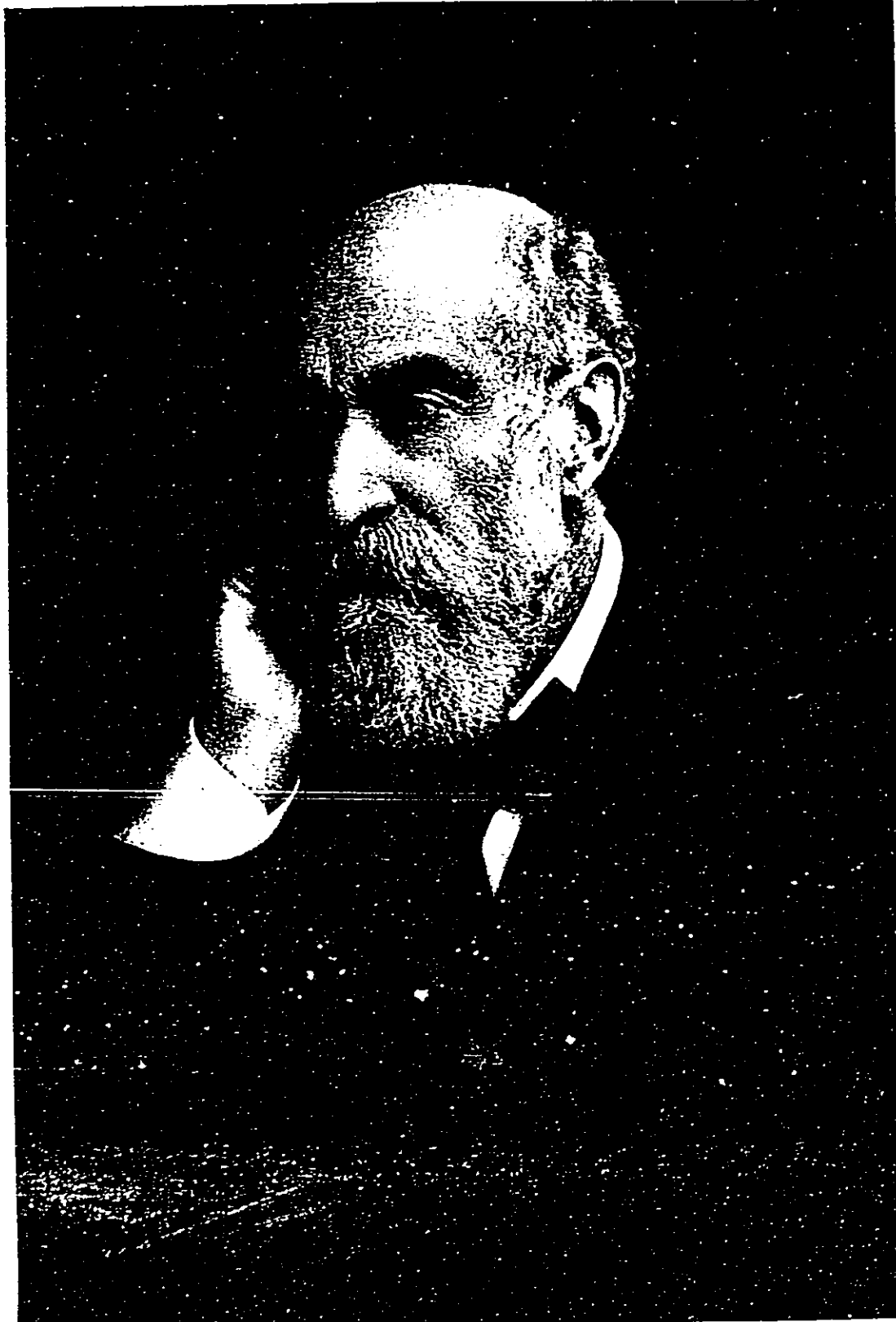
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MEDICAL MEMBER OF THE LOCAL GOVERNMENT BOARD FOR SCOTLAND
AND FORMERLY MEDICAL OFFICER OF HEALTH FOR GLASGOW

EDITED BY

A. K. CHALMERS, M.D.

MEDICAL OFFICER OF HEALTH FOR GLASGOW



Photographs by J. & E. Arman & Sons

Yours very truly
J. B. Russell

GLASGOW
JAMES MACLEHOSE AND SONS
PUBLISHERS TO THE UNIVERSITY

1905

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PREFACE

BY SIR WILLIAM T. GAIRDNER, K.C.B.

HAVING been asked to contribute an introduction to the volume of Memoirs herewith presented, I do so with the more satisfaction because not only did the suggestion of gathering these papers together in a volume originate with me, but there is no man living who, from his close association with Dr. Russell, is more in a position to view his sanitary work as a whole, and to state in a few words the principles which underlay it, and the ideals at which he aimed.

Having been for nearly ten years, 1863 to 1872, Chief Medical Officer to the City of Glasgow, and having been the means, indirectly, of introducing Dr. Russell to that position, I have always declared that the chief service that I was enabled to do for the City was to have discovered Dr. Russell, and placed him in the track of my succession. I trust, indeed I am confident, that the material provided in the present volume will completely bear out what is here said, and will show that in clearness of insight, steadiness of aim, and the conciliatory temper which alone could achieve success in such an enterprise, Dr. Russell presents a model for all future sanitary officials.

The Memoirs here printed fall into several groups, of which it is not necessary to say more than that, though not in strict chronological sequence, they are easily distinguishable by their object and character.

It is not necessary to enlarge upon the first group relating to his services as Physician to the Fever Hospital further than that it displays the same qualities of originality (as most of the Hospitals were constructed entirely under his superintendence) and successful resource as do all the rest. When he came in 1872 to the full position of Sanitary Officer, I think he must very soon have become persuaded that although (as it is commonly said) it is "not possible to make men moral by Act of Parliament," yet as regards the external

conditions of their life, their environment (to use a modern phrase) it is almost all-important, and at all events it is very possible so to guide both legislation and the ideals of public service, as to an almost indefinite extent to influence the habits of great numbers of men. This is not, however, to be done in a hurry, or even at all by mere official regulations. Glasgow, at the time I took office in 1863, was perhaps the most aggravated instance in the whole country of evil habits growing out of centuries of deficient control, which had practically created a large and increasing body of citizens living in conditions that were absolutely inconsistent with anything like reasonably good sanitation, not to speak of good morals. It was Dr. Russell's privilege to realise early in his career that there was no other mode of dealing with these complicated evils than what he usually termed "pegging away," *i.e.* dealing with individual instances of intolerable neglect in the light of large general principles which could be explained so as to make the individual instances a lesson all round; not only to the miserable victims of past carelessness and civic unwisdom, but to landlords, factors, tenants and everyone concerned in the miseries thus arising. It was under the influence of these ideals that such educative, and at the same time picturesque papers as "Life in One Room," "Uninhabitable Houses," "The Children of the City," took their origin, as will appear clearly to the reader of this volume.

The Glasgow City Improvement Act, which was passed in 1866, without much difficulty or opposition in the House of Commons, was greatly retarded by local consideration, so that it can hardly be said to have come into practical operation until Dr. Russell took up the control in 1872. The study, therefore, of the effects of this Act from the very beginning, came under his official cognizance, and is the subject of more than one of the Papers here presented. Dr. Russell was much more than a statistician, or a mere dealer with accomplished facts; nevertheless, I believe that the Papers devoted to this subject constitute an absolutely unique disclosure, both as to the results, and the processes, of dealing with the displacement, under Acts of Parliament, of large masses of population especially of the poorest and most ignorant classes.

One of the conclusions reached and expounded by Dr. Russell, which although obvious enough to all who have carefully studied the various Commissions on the Health of Towns, etc., from the time of Chadwick, Arnott, and Lyon Playfair onwards, is that gross sanitary neglect inevitably tends to the production and multiplication of a class which is not only helpless and progressively in a state of degradation from generation to generation, but has in itself no power of

redemption, so that as regards the community at large, it becomes a truly *parasitic* class, living upon the classes above it, in such hovels as are provided for it, and absolutely precluded from every kind of spontaneous improvement, and therefore bound to become worse and worse with each generation. This was the class in Glasgow which had assumed such formidable proportions in 1863 when I took office, in the midst of a rising epidemic of typhus fever, and it was in dealing with this class that I was led to say at the time, that all our efforts, as then possible under the Glasgow Police Act of 1862, were merely "scratching the surface," and that much more decisive legislation would be required before any permanent impression could be made on the causes not only of typhus fever, but of other epidemics, and even of some diseases not commonly considered epidemic, such as tuberculosis. It is well known how much good has been done in this direction under Dr. Russell's supervision, and it will be seen, I think, that the Glasgow Improvement Act has been a very considerable factor in this social amendment.

Another evil with which Glasgow and all great industrial centres have to contend, and which is perhaps even now far from adequately met in our great cities, is the migration into them of large numbers who, while they lived in the country, and were occupied with rural work, had at all events some reasonable prospects of retaining average health, but when enclosed in towns, and induced by the prospects of better wages to take to different occupations, were extremely apt to sink into hopeless poverty and irredeemable neglect of all the conditions of moderately good sanitation.

I remember very vividly a visit which I paid during the time of my official work to a great lady in the Highlands, who is still alive, but who, I fear, will never be able to read these lines, so as to confirm what is here set down. This excellent lady had devoted herself for many years to the improvement of what I ventured to call the "Happy Valley," one of those running down from the north-west towards the Caledonian Canal. She knew almost every family within her own great domain; encouraged them in every way as regards keeping their houses in order, and, in fact, became a far-reaching, good influence that was extremely evident, even to a casual visitor. I remarked to her one day that according to my experience of human nature there would always be a certain number of people who, either from intemperance, or hereditary idleness and inattention, would not be won over to become fitting inhabitants for the "Happy Valley," and "what, I ask, will become of such people?" "Oh," she replied, "I suppose they find their way to Fort William." Yes, I reflected, perhaps

without expressing it, "and perhaps if they do not find themselves well suited there, they may find their way to Glasgow."

It has always been my conviction as a Sanitarian that our great towns need to be furnished with means of protection against the immigration of undesirable persons of this kind, and that it would be in the end a really beneficent rule that would make the permanent residence of what may be called a parasitic class *impossible*, either in town or country. It was difficult to express such opinions unguardedly under the pressure of official responsibility, but the Memoirs published in this volume will, I think, tend to press home such convictions on every attentive reader.

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BIOGRAPHICAL NOTE

BY THE EDITOR.

ALTHOUGH a simple record of work accomplished must always remain the most fitting record of a life spent in the service of others, there exists the natural desire in the mind of the reader to get beyond the work to the personality of the worker, and to the surroundings of the every-day toil amidst which the work itself was done.

It seems desirable, therefore, if only for the information of the large class of readers to whom Dr. Russell was known only, or chiefly, through his writings, that some notes of a biographical character should be added to the outline of his work contained in Sir William Gairdner's prefatory note.

Some reference may first of all be made to the circumstances under which the preparation of the present volume was undertaken. In a note in the *Scotsman* on the morrow of Dr. Russell's death, Sir William Gairdner—as he himself states—gave public expression to the feeling which was present in the minds of many, that a selection of the many papers which Dr. Russell had contributed to the literature of Sanitary Science and allied Social questions, should be issued in the form of a memorial volume.

The suggestion was taken up most sympathetically by the Committee on Health, and finally obtained the unanimous approval of the Corporation of Glasgow, who appointed the Convener of the Health Committee (Councillor W. F. Anderson) and Councillor Clelland, along with the present writer, to prepare the volume for the press.

On the last has fallen the responsibility of selecting and arranging the papers.

When this work was considerably advanced, there were discovered among Dr. Russell's papers copies of several of those now grouped together in the Chapter on the Sociological Aspects of Sanitation, in which annotations had been made

by himself with a view to their re-issue,¹ and care has been taken in the present volume to give effect to such alterations as his manuscript notes shewed to have been his intention.

As indicated by Sir William Gairdner, a strictly chronological arrangement of the papers has not been adopted in the present volume. Nevertheless the aim has been to present them so that the history of sanitary progress, as illustrated by the development of public health administration in Glasgow, may be traced from the period of awakening interest in the first half of the Nineteenth Century until that in which much that engrossed the attention of the pioneers of sanitary reform had passed away with the generation which had set itself so strenuously to accomplish this object. Some such form indeed was suggested by Dr. Russell's Memoir on the subject, and the narrative contained therein has been here adopted as descriptive of the general movement which the other papers selected for reproduction may serve to amplify or illustrate.²

But while the illustrations are drawn from local conditions, the administrative problems which they presented are common to all large communities, and the successive steps in their solution may serve in turn to illustrate many of the phases through which public health legislation generally has passed during the last half century.

Where it seemed desirable, a short summary of the contents has been inserted by way of introduction to several of the chapters, in the hope that the path of the general reader may be made easier.

For some years prior to his death, Dr. Russell was Medical Member of the Local Government Board for Scotland, but most of his best work was accomplished and almost the whole of his life was spent in the service of the Corporation of Glasgow.

It is a fitting tribute, therefore, to the service which he rendered to the city of his birth, that a volume dedicated to his memory should be issued under the authority of its Town Council.

Dr. Russell was born in Glasgow in 1837, and his boyhood and early youth were spent in the neighbouring burgh of Rutherglen under the influence of his paternal grandfather,

¹ In response to repeated suggestions, but interrupted by recurring illnesses.

² The desirability of compressing the work within the limits of a single volume rendered it necessary to omit the text of several important papers—more especially those in which the successive milk epidemics of enteric fever were traced—but their bearing on subsequent legislation has been noted, and effort has been made to render the list of published papers, which is appended hereto, as complete as possible. Copies may be found either in the Library of the Faculty of Physicians and Surgeons or in the Library of the Royal Philological Society, Glasgow.

whose sterling worth of character was in time to be reflected in his grandson. His early education was completed in the High School of Glasgow, from which he passed to the University, where he enrolled as a student in the Arts Faculty in the Winter Session of 1854-5. Graduating as Bachelor of Arts in 1858, he began the study of medicine in the following winter. In the interval, however, he was selected by Lord Kelvin (then Prof. William Thomson) as one of his assistants on board the "Agamemnon" and at Valencia, during the first successful effort to lay the Atlantic Cable between Europe and America, and the incidents of the voyage were afterwards related in "Leaves from the Journal of an Amateur Telegrapher" published in the *West of Scotland Magazine* in 1859.

After a distinguished career in the classes of the Faculty of Medicine, he graduated M.D., C.M., at the University of Glasgow in 1862, and spent the next two years first as House Physician in the Glasgow Royal Infirmary, and afterwards in the hospital wards of the City Poorhouse. On the erection of Parliamentary Road Fever Hospital, he was appointed, on the recommendation of Dr. Gairdner, its first Medical Superintendent, and here he continued almost until his appointment as Medical Officer of Health in 1872, in succession to Dr. Gairdner. When the Local Government Board for Scotland was reconstituted in 1894, he found himself unable to accept the suggestion then made that he should transfer his services to the wider field which thus offered; but the invitation being again renewed in 1898, he accepted the position of Medical Member of the Board. After six years' service there, his death occurred in Edinburgh on October 22nd, 1904, and the loss to sanitary science in general, and especially to sanitary administration in Scotland, was at once reflected in medical and lay journals alike. With almost singular unanimity, all bore witness to the strength of purpose and high moral aim which characterized and inspired his work: from almost none, was the note of personal regret absent. Rarely indeed were man and work more happily conjoined, for to the power of scientific analysis which the work required, he brought the added gift of a synthetic imagination which found no circumstance of human life isolated or unplaced. To this rare combination of faculties, and to the command of a literary style which was always pleasing and lucid, and could on occasion be picturesque and forcible, the literature of Sanitation owes much that is stimulating and suggestive.

From the application of these qualities to the work of his after years, it is interesting to revert to the period while they were still developing, and the following notes of appreciative

description by a life-long friend and former fellow-student (the Right Honourable James Bryce, M.P., author of *The Holy Roman Empire*, &c.) will be read with interest :

" James Burn Russell and I were fellow-students at Glasgow University in 1853-57. He was not very widely known in those days, being naturally of a modest and retiring disposition ; but he had won the warm respect and affection of those who came to know him well. He had not then turned his thoughts to science, but was showing a remarkable gift for literary production, and an equal capacity for the criticism and appreciation of literary work. His reading in English authors, and especially the English poets, including the older ones, such as Chaucer, and even the Anglo-Saxon Caedmon, was unusually wide ; and in all questions relating to them we were accustomed to defer to his opinion, which was sure to be based on exact study. His own verses had the charm of refined thought and a simple grace of expression. His friends often wished in later years that circumstances had permitted him to cultivate this gift. But he was singularly devoid of any desire for fame ; and his professional work carried him off into very different fields. With this love of poetry there went a great love of natural beauty. He lived, if I remember right, at or near Rutherglen, which was then a quiet little town in a pretty country, and I can recall walks with him over the Cathkin Hills, one of his favourite spots. The sweetness of his temper, and his power of drawing pleasure from simple things, made him a charming companion, as the range of his attainments made him no less an instructive one, from whose talk one always went away the wiser. The mental qualities then discernible, which contributed to his subsequent eminence in his professional career, were, I should say, his habits of accurate observation, of patient reflection, and of steady devotion to whatever work he undertook. He was solid rather than swift, careful, exact, conscientious, with a winning gentleness of nature. We all felt sure that he would attain high distinction, though we could not foresee in what line his work would lie. There can be but few left who remember him from those days, but they must all cherish his memory as one of the most pure and candid souls they have known, full of sympathy, bent on high things, true and constant in friendship."

Writing in the *Glasgow Medical Journal* for December, 1904, Sir Hector C. Cameron records as of interest in relation to the work which engaged Dr. Russell's attention in after years, that he seemed " specially to have been attracted by literary and scientific study," and in consequence many of his prizes were gained in those two departments of intellectual

exercise. Thus in 1854 (Humanity—Private) he was bracketed second for English verse composition. James Bryce (now the Right Honourable James Bryce, already mentioned (being first ; in 1855-56 (Logic—Junior) he was awarded a prize for the best verses on the subject, " Italy : A Sardinian Poet's Dream " ; also a prize (Humanity—Vacation Exercises) given for the best translation into English verse of certain pieces of Catullus ; in 1857-58 he gained a prize (Natural Philosophy) for Special Investigation on Electrolysis ; in 1858-59 he won the University Silver Medal for the best essay on Vital Dynamics ; and, in 1860-61, the Lord Rector's prize for the best essay on " The Probable Influence of Western Civilisation on the Social, Political, and Moral Condition of China."

It has been the privilege of the present writer to peruse many of the literary fragments which remain of this period of Dr. Russell's life. Some of these are collected in a volume of miscellaneous papers, largely in manuscript, others appeared in the *Glasgow University Album* for 1858-59, which was edited by students. To some of them only can reference be made, although interest attaches to all. All bear witness to the power of facile and graceful expression which even at this period had already attracted the attention of his fellow-students. Nor is their variety less noteworthy.

Life is full of buoyancy, and the invitation in the " Song of the Blue Tit "—

" Who would be merry must come with me
Now here ; now there ; on the swinging tree."

reveals a habit of communing with Nature which was the source of one of his chief enjoyments in life.

Or again, it is memory that speaks with a soothing cadence, and in the opening lines of a " Reminiscence " addressed to an uncle, we catch the gift of melodious expression to a degree which is far from common—

" Voice of friendship ! Voice of kindness !
Oh ! how sweet it is to hear
All those accents, soft and soothing,
Wooing the enchanted ear.
Oh ! 'tis sweet as ere was music
On a peaceful summer's day,
Gently breeze-borne o'er the ocean,
Chasing every care away."

Indeed he possessed a power of versification of no mean order, but probably nowhere better shown than in a translation of part of a chorus in the " Agamemnon " of Aeschylus, prepared as a class exercise. The incident described occurs when the Grecian Fleet is storm-stayed at Aulis, on its way to

Troy. Agamemnon had killed a hart belonging to Diana, and is told by the priest Chalkas that unless he sacrifices his daughter Iphigenia to the goddess the storm will not abate. The Apostrophe to Zeus runs thus :

“* * * but Zeus remains,
And he to purest thought attains,
Who chaunts in loud triumphant lays,
With honest heart his matchless praise :

His, who sons of earth has taught
How to climb the heights of thought ;
His, who fixed that hours of pain
Should alone experience gain.
Pangs, the fruit of bygone ill,
Oft through slumbering bosoms thrill ;
Oft the voice of wisdom finds
Paths to reach unwilling minds ;
Oft to life in mortal hearts
Ave of heaven, unbidden starts.”

Of more serious effort in the realm of pure literature there may be cited as illustration a paper “On the Nationality of our early poetical Literature,” which was published in the volume of the *University Album* already mentioned. The argument is directed to show that the social life of a period, even before the day of Piers Plowman and Chaucer, may be reconstructed from its ballad poetry.

Again, in “Caedmon, our Anglo-Saxon Milton,” the Cowherd, and ultimately the poet-monk of Whitby, the author of the “Dream-Song” and the “Metrical Paraphrase,” we are led to “the cradle of English literature and English greatness. . . . The first faint utterance of history is an echo of the lyre. We find nations emerging with songs on their lips; songs of which snatches still survive, preserving the mind and spirit of the past, and even enabling us to conjure up bodily forms although they be often like phantoms.”

In the last example of his work at this period to which we can refer, “Illustrations of Anglo-Saxon Mind and Manners, Pagan and Christian, from the native poetry,” there is a further and more sustained effort of the synthetic imagination applied to the social life of England in the sixth century; and we leave this portion of Dr. Russell’s life with the feeling that if administration had not claimed his energies in after years, the power of reconstructing social conditions from the literary survivals of a period would have won for him laurels in the domain of scientific history.

Early in his career as a student of medicine, he came under the influence of Lord Lister, who was at that time just entering on his duties as Professor of Surgery at the University

of Glasgow, and here again we may quote from the notice by Sir Hector Cameron, already mentioned. “Lord Lister, who ever held Russell in high esteem, narrates an interesting fact of those student days in a recently written letter. ‘One thing,’ he writes, ‘I remember about Russell that indicated the high opinion the students had of him. At the end of my first winter course, the class presented me with a document expressing their gratitude for my lectures, &c., and Russell was the man commissioned to read it to me. That class was an unusually large one, as the men of the fourth year attended it as well as those of the second and third years. Russell’s selection by a class of so many senior students was really strong testimony of the esteem felt for him.’”

At the same time he was also a member of Sir William Gairdner’s first class, after his appointment to the Chair of Medicine in the University of Glasgow in 1862-63.

It is not difficult to trace in this early association with these masters of scientific method the stimulus afforded to a mind already developing along lines of close observation and critical enquiry into causal relationships, and the influence of the association was shortly to be turned to practical uses on Dr. Russell’s appointment as Medical Superintendent of Kennedy Street Fever Hospital in 1865.

Municipal Fever Hospitals were still in the stage of experiment; and his hospital reports are models of terse and pointed reasoning. Everything had to be thought out, from the design of the hospital buildings to the organisation of its nursing staff. Difficulty was but a stimulus to the discovery of methods by which it might be overcome, and from the lack of suitable women to act as hospital nurses there emerged a forcible appeal for the education of women to undertake the duties of private nursing.

Again, when he took up the duties of the office of Medical Officer of Health, much of the machinery of administration which had been devised during the previous decade was largely untried, and much that now forms the every-day weapon of the Sanitarian had still to be forged.

Epidemics and their repression supplied the dominant note in sanitation. Conclusions as to their method of spread lay along the lines of inductive reasoning, and the doctrine of particulate contagion was fast becoming a working hypothesis of great value.

In the year following his appointment as Medical Officer of Health, an outbreak of enteric fever occurred in Parkhead, which was to afford material for the first of a series of brilliant studies in the epidemiology of the disease, and to help in no small degree to establish the doctrine that infection might be

conveyed by milk. Having establish this first in a local example, subsequent outbreaks were utilised to illumine the whole current of the milk supply of towns, from its production until it reached the consumer.

Legislation now provides an easy method of obtaining from the purveyor of any milk supply associated with the distribution of disease, complete details both as to its source and distribution. But at the time we write of no such provision existed, and the case against a suspected milk supply might require to be established in face of a refusal to disclose information which might, it was erroneously believed, prove prejudicial to the trade interests of the vendor. Each report revealed some new avenue by which infection might gain access to milk; now it was an impure water supply; or, again, the alternative use of the milk scullery for the purpose of a domestic washing-house; and the result was to build up a picture of the insanitary condition of Dairy Farms which did much to stimulate a demand for reform in this branch of rural sanitation, and also to show the direction in which it might be accomplished.

We have elsewhere indicated the methods which he adopted shortly after his appointment as Medical Officer to familiarize the public mind with the methods by which infection may spread. The infectious diseases of childhood, in particular, had in the past been almost beyond the reach of administrative effort, but the expansion of the hospital system, after the erection of Belvidere, opened up new opportunities of dealing with them. Here, as in so many other instances in his work, the prevalence of infectious disease became the guide to conditions prejudicial to health otherwise; and the pathos of child-life in cities stirs him to describe the modern city as the product of a "Board of Bachelors, or Malthusians, or Herods," so little had the requirements of healthy childhood been considered.

This paper on the "Children of the City" formed almost the first of a notable series of studies on the Sociological aspects of Sanitation which followed in quick succession, and which did much both to quicken public interest in the well-being of the poor in cities, and to create a sense of social responsibility for conditions which had arisen among them during a long period of neglect. Facts were collected with a wealth of detail formerly unknown in such enquiries, and their collation resulted in graphic representations which unaided rhetoric alone would have failed to accomplish. Around a full knowledge of the conditions which form the groundwork of these papers there plays the force of a vivid imagination, which renders them picturesque; and when the deep human

sympathy which prompted it all becomes apparent, the appeal for active measures of reform becomes irresistible.

But while the life of the poor under conditions irreconcilable with moral and physical well-being ever stirred him to remonstrance, his nature revolted at the evidence of moral obliquity with which it was so frequently interwoven. Justice to the well-doing demanded equal justice to those who perforce prey on them. Intemperance and vice were not only social offences but factors in disease, and if their victims were to be redeemed, the first step in the process of reform was to create in them a sense of civic responsibility.

How much of this might be accomplished through patient and continuous effort along the lines of administrative hygiene is a theme to which he reverts again and again with ever-varying illustrations.

Patient perseverance in well-doing was indeed with him not only an axiom of life, but a principle of action; and, social reformer though he was, his methods were not of the sort commonly called heroic. To the inhabitant of the wynds the problems of life were problems of hygiene, and so hygiene could become the handmaiden of reform. But before reform was possible, the slum dweller had to be brought into social perspective, not only because he was a ready prey to diseases which had an uncomfortable tendency to spread, but also because he was surrounded by conditions which were beyond his unaided power to remove, and which, so long as they continued, threatened to strangle the impulses to good with which he was endowed. It was on this that the strength of his appeal for the elevation of the poor to a higher plane of civic recognition rested.

Something of the statesman's power of reading lessons for the future in the experiences of the past was also his. In the early years of his appointment as Medical Officer of Health, extensive clearances were being effected under the first City Improvement Act. But the complement to displacement—the power to prevent the erection or alteration of dwellings which would reproduce the defects of the old—was still required; and time and again he insisted on the need for building regulations to control this, long ere their acquisition became an accomplished fact.

One who was in friendly intercourse with Dr. Russell for many years, and associated with him in shaping the later policy of the Health Committee—ex-Bailie Robert Crawford, LL.D.—writes of him:—I avail myself gladly of this opportunity of associating myself with all those who bear testimony to the marvellous results achieved in Scotland, and to a large degree also throughout the kingdom, by the exercise of Dr. Russell's

great moral and intellectual gifts, stimulated as they were, constantly and vividly, by a burning zeal and passion to benefit humanity.

It was my high privilege to enjoy the close personal friendship of Dr. Russell for over twenty years, and during thirteen of these years I was in almost daily touch with him in many matters, official and individual—first as a member, and latterly for ten years as chairman, of the Committee on Health. These years were for "my chief" (as I always styled and felt Dr. Russell to be), as well as for myself, years of intense conviction, burning desires, and remarkable progress in the development of Glasgow towards the possibility of a clean and healthy life for all its citizens, and my association with him during this period of "incandescence" produced a revolution on my whole outlook on the world and its affairs, and developed in me an affection and admiration for the man, his nature and his work, which nothing can ever diminish or impair.

In writing thus of one whose memory I will ever reverence, I can also testify that my predecessors who worked in close official and personal contact with this great pioneer of public health were inspired by the same feeling. The first chairman of the Glasgow Health Committee, and the man who in darkness, doubt, and difficulty laid the foundation of the sanitary administration in Glasgow, was John Ure, LL.D., who, during his term of office as Lord Provost of the city, retained also the post of "Chairman of Health," so deeply was he attached to this work. Succeeding him as chairman came Mr. W. R. W. Smith, a breezy, enthusiastic reformer of unconventional nature, who for some years carried the sanitary administration of this city forward with rapid strides, and on his retiral nominated me as his successor, after infecting me with some share of his own cheery optimism in dealing with obstacles and difficulties. When I took up the reins and essayed to continue the work which they had established with so much labour, and with so great success, I found that they had received the same inspiration of motive, the same enlargement of view, the same comprehension of principles, and the same passion for the work from Dr. Russell as I was myself to experience, and that their affection for, and appreciation of, his beautiful nature had been, and remained, a constant joy to them.

Nor were those feelings confined to those who in the course of public business came very close to Dr. Russell. They were shared in little less degree by every member of his committee, by every representative and official in the Corporation, and by his fellow-citizens generally; and his enduring monument will ever consist in the great and valuable work which he accom-

plished for the city which he loved, and in the gratitude which the citizens will ever bear to his memory.

Intimately as I knew Dr. Russell during the most active and productive period of his official and public life, I find it hard to pick out and differentiate the special qualities which might be supposed to have led to his great success in a prominent public position, and exposed therefore to continual criticism from all sides, and to opposition from interests adversely affected by his action on lines of public policy. He was averse from advertising himself, modest and retiring, continually full of reason and moderation in meeting the difficulties of individual hardship in the carrying out of public policy, and yet firm and unswerving in maintaining the broad principles of the public weal as opposed to class interests. It became necessary for him frequently to lay down sharp and definite lines, which seemed to cut deeply into the accepted rights of property while necessary for the conservation of health and life; but so graciously was he esteemed, and so convinced were all classes of his wisdom, sagacity, and moderation, that it was rare indeed to find his judgment questioned or his conclusions seriously combated. To me it seemed that his influence and prestige—among his professional brethren throughout the country and with all classes of the people in his own city and neighbourhood—arose from a special combination of rare qualities and gifts which I can best express by the description of "Guide, philosopher, and friend"—which he was indeed to me.

The readers of this book will learn for themselves how highly qualified he was to guide the action, quicken the conscience, and illuminate the understanding of a great community, brought face to face as it was with the complex sanitary and social problems which became acute about the middle of the last century, and are still only partially solved. With admirable prescience Dr. Russell seemed to grasp clearly, not only the right direction in which to move, but exactly how far it was practicable for the public authorities to advance in any particular direction at any given time. He seldom had to vary his course—never so far as I can remember had to retrace his steps—and, on the other hand, he never provoked reaction by going too fast or too far. He had to verify all his conclusions by scientific inquiry—he assiduously educated the responsible authorities and the public as to their line of duty—and while seeing very far ahead himself, was content to achieve day by day what was then practical and possible. In private intercourse I found him an idealist, throbbing with impulse in many directions for the good of humanity, and very impatient and indignant with narrow-minded objectors

and unsympathetic obstruction to progress, but preserving all the time to his committee and to the Town Council in all his recommendations a certain patient dignity and impassiveness, as of a mind convinced—unhasting and unresting. At committee meetings he spoke very little, and only when called upon by the chairman. But his personal magnetism seemed always to dominate the proceedings, his ideas were always sympathetically discussed, and his conclusions were clothed with a sense of authority. His greatest power, however, lay in his pen. As a master of terse, lucid, convincing English I have never met anyone to excel him. And this, too, on subjects of an unattractive kind, such as slum dwellings, obstructive buildings nuisance, outbreak of epidemic disease, &c. His reports on these subjects cut clean as a surgical instrument, and always achieved their purpose.

It is not my province to refer to the many notable advances made and deeds accomplished by Dr. Russell while medical officer for Glasgow. They are written in this book, in the records of the Town Council, and elsewhere. The full results of his work can never be written in any book, but may be seen by all who can compare the condition of life in Glasgow—especially in the poorer quarters—with what prevailed 30 to 40 years ago. Dr. Russell took no narrow view of the functions and responsibilities of his office, nor of the responsibility and duties of a Health Committee. It was not enough that the immediate and direct work for which they were primarily responsible should be well done. He always held that it was their duty to guide, and if necessary to stimulate, all other departments of the public service whose work touched directly or indirectly on the great matters affecting the amenities of life in a city. He was an ardent advocate of the gospel of soap and water, sunshine, air, and room to live and move. Hence his aid and counsel were often called in to advance questions outside his immediate jurisdiction, such as the cleansing of the city, water supply, the provision of baths and wash-houses, parks, recreation grounds, and open spaces, building regulations, sewage purification, and a host of cognate questions. On all such matters his views were clear, broad, and philosophic, and to have had the great advantage of freely discussing these subjects with him in all aspects, as I constantly had, was in itself a liberal education. Many of Dr. Russell's public friends had the impression that in spite of his graphic lucidity in writing he was reticent and timid in the expression of his views in ordinary talk or discussion. In one way this was true. When called upon to speak at a meeting of committee or before a mixed company of any sort, he was always reticent and almost painfully reserved, and indeed

seemed to have difficulty in giving ready or adequate expression even to views or convictions which already existed in his mind in a clearly cut and carefully considered form.

In striking contrast to this, however, his most intimate associates knew Dr. Russell to be a most delightful ready give-and-take debater, full of swift perception, keen wit, and rippling merriment. An hour's talk with him on such subjects as I have mentioned acted on one like a tonic or a holiday. This broad, philosophic outlook gave him a splendid comprehension and grasp when writing a report on subjects beyond the technical details and statistics of his own special work. He had a quick and clear view of the right relationships that ought to exist between the various units making up a community. Necessarily the rights, duties, and responsibilities of property as related to the rights of the community in matters of health and life are never absent from the mind of the Medical Officer of Health and the Sanitary Inspector in a city like Glasgow. On this subject his views were those of an idealist, his practice moderate and progressive, his advice always practical and sound. Courtesy, moderation, and reason were his watchwords, and it is not too much to say that largely through his wise advice and moderate counsel the whole tone and attitude of the landowner, landlord, and factor towards the public authorities changed during his term of office from bitter opposition to one of reasonable if not even cordial co-operation.

Of a similar character were his opinions about the relations which should exist between the individual citizen and the community as represented by the public authorities. Dr. Russell had little faith in the possibility of the redemption of the worthless members of the "submerged tenth." He would have isolated them or banished them "furth of the city," and would have prevented their further importation. He had just as poor an opinion of the value of charitable doles as a means of permanent improvement of the conditions of the parasite class, and was opposed to pampering of every kind. On the other hand, he had clear and decisive views of the "right to life" which belongs to all citizens alike. Uninhabitable houses were his abomination, as were dark closes, filthy courts, narrow streets, and absence of light and air. He held it to be the duty of the community to prevent the use of all dwellings incompatible with decency, cleanliness, and health, and to put an end to all physical surroundings and conditions tending towards the production of the "undesirables," and to create, or cause to be created, such a condition of physical environment as would ensure for every man, woman, and child in the city the possibility of leading a clean, cheerful, healthy, and there-

fore useful life. On the duty and responsibility which attach to such individuals in relation to the community, he was no less clear. He had scorn and contempt for that kind of citizenship which thinks it has done all that is required of it when it reluctantly pays its rates, and wants things done for it which it can quite well do for itself, evading all the moral claims which the community is entitled to have upon every one of its members.

Glasgow thus possessed in Dr. Russell an official and servant whose whole life and work have been of a character to arouse and stimulate every form of civic virtue, and to encourage all movements for municipal progress. He has gone from us, but his influence still lives, and moves men to thought and action.

"Yea, saith the Spirit, for their works do follow them."

It was characteristic of him that every moment of life should be filled with the expression of some purpose.

In 1868 he undertook the editorship of *The Glasgow Medical Journal*, and under his guidance that magazine entered upon a new term of usefulness. In 1870 Mr. Henry E. Clark, L.R.C.P. Edin., M.R.C.S. Eng. (now C.M.G., and President of the Faculty of Physicians and Surgeons, Glasgow), became associated with him in the editorship, and the *Journal* was continued under their joint management until Dr. Russell's appointment as Medical Officer, when he retired.

To an illness which confined him to his room, and largely to bed, for weeks together, we owe one of the most interesting monographs possessed by any municipality on the Evolution of Administrative Hygiene. During the same illness, but at a later period, he published a report on the Prevention of Tuberculosis, which was afterwards issued—with permission—by the Government of Massachusetts as a State paper; and after ten years it is still the most complete study of Tuberculosis that exists, from the standpoint of administration.

Public recognition of his work was extensive and varied. A report on Anthrax among Hair-workers, published in 1880, was included in the Appendix to the Annual Report of the Medical Officer to the English Local Government Board for the year 1878. In 1885 his *Alma Mater* conferred on him the degree of LL.D. (*honoris causa*); in 1891 the British Medical Association awarded him the Stewart prize for his researches on "The Origin, Spread, and Prevention of Epidemic Disease"; and in 1889 he received the first Bisset-Hawkins Memorial Medal, awarded by the Royal College of Physicians of London for zeal in the promotion of public health. On the appointment of the Royal Commission on Sewage Disposal,

he was nominated one of its members. He was also an honorary member of several foreign societies for the advancement of public hygiene.

Many of his papers were first issued as addresses to the Royal Philosophical Society of Glasgow, of which he was President, first of its Sanitary and Social Economy Section, and afterwards of the Society itself. On his removal to Edinburgh, his name was placed on the list of its honorary members; and at his death, an appreciative sketch of his life was prepared for the "Transactions" of the Society by Dr. Brownlee, Physician Superintendent of Belvidere Hospital.¹ He was a Director of the Western Infirmary of Glasgow, of Anderson's College Medical School, of the Royal Hospital for Sick Children, and of the Glasgow Sick Poor and District Nursing Association. To all he brought a wealth of administrative experience and of sound judgment, which his fellow Directors were not slow to acknowledge. The Central Dispensary he did much to found, and he remained until his death on its Board of Management.

His appointment to the Local Government Board was universally welcomed as a tribute to the eminence of the service which he had rendered to sanitary science, and in the few years which remained to him, after undertaking the duties of his new office, there was ample evidence of the zeal with which they were discharged.

In private life, and in the familiar avenues of friendship, intercourse with him was a stimulus to those whom his lovable personality attracted. Rich in knowledge of the mainsprings of human effort, and with a mind well attuned to the higher harmony which dominates the ages, his conversation was then apt to play over life's mosaic with a wealth of illustration which illumined and defined it. It was the pointed and picturesque language of his writings, but more flexible because spoken.

Earnest he was in all things, regarding every duty as a sacred obligation. Associated through all his life with the Congregational Church in Scotland, he was interested in every scheme which had the welfare of mankind as its object. "While his creed," says the Rev. Ambrose Shepherd, D.D., in a memorial sermon preached in Elgin Place Congregational Church on November 6th, 1904, "was not a long one, it did not shorten as you measured it. The length and breadth, the height and the depth, was the living Christ. When he saw wrong and sorrow, poverty and trouble, he knew what his Lord did in His day, and he was in no doubt about what his

¹ To Dr. Brownlee I am indebted for the preparation of a most useful index to this volume.—[Ed.]

Lord would have him do to-day. 'Pure religion, and undefiled,' we are told, 'before God and the Father is this, to visit the fatherless and widows in their affliction, and to keep ourselves unspotted from the world.' And if this is a working definition of Christianity, then our friend translated its letter, as but few men do, into a spirit and life of continuous and practical obedience. 'There is no way more sure,' he once remarked to me, to the loftiest and holiest life of heaven, 'than that which lies through a quick deep sympathy with the needs of earth.' "

Over the closing months of his life there hung the shadow of much physical suffering, yet through the shadow the sterling qualities of his character and his courage stood out in even bolder relief. In the intervals life went on for him with its old zest, and he continued at work almost until the end came.

"He was buried," says Sir Hector Cameron in the article from which we have already quoted, "on 26th October, in the Necropolis of Glasgow, in the presence of a company from which few of his old friends, private and official, were absent; while no board or institution with which he had been connected seemed to be unrepresented. It is seldom one can so certainly trace, as an observer could do on that occasion, the grave expression of a universal grief and regret in the faces of those who stood around the place where the body was laid."

It formed a fitting resting-place for one whose life had been so spent, for, within easy reach of his grave—almost within sight of it—there was growing up a new population and a new city which his work had done much to render possible. "He seems," says one who knew him well, "always to have been of the best." His work was productive of much good while he still lived, the spirit in which it was done remains as a stimulus and inspiration.

Among the every-day problems of sanitation, he found ready means of giving practical expression to the religious convictions which lay at the foundation of his character, and helped to make him one of the greatest of modern sanitarians.

It remains to add that his wife, a daughter of the Rev. Peter Davidson, D.D., of Edinburgh, predeceased him by many years, and that he is survived by a son and two daughters.

LIST OF PUBLISHED PAPERS.

	YEAR.
1. Analysis of 300 cases of Typhus Fever (<i>Glasgow Medical Journal</i>), - - - - -	1864
2. Suggestions for the Logical Use of Hospital Statistics (<i>Hospital Report</i>), - - - - -	1866
3. A Clinical Study of Stimulation in Typhus Fever (<i>Glasgow Medical Journal</i>), - - - - -	1867
4. On the Distribution of Enteric Fever in Glasgow (<i>Glasgow Medical Journal</i>), - - - - -	1869
5. Note of Disinfection with Carbolic Acid Vapour (<i>Glasgow Medical Journal</i>), - - - - -	1869
6. Cases of Typhus Fever, fatal, with rare complications (<i>Glasgow Medical Journal</i>), - - - - -	1869
7. Cases of Typhus Fever, fatal, with Intestinal Hæmorrhage (<i>Glasgow Medical Journal</i>), - - - - -	1869
8. On Excretion of Urea in Typhus Fever, in relation to Temperature (in conjunction with the late Dr. Joseph Coats) (<i>Glasgow Medical Journal</i>), - - - - -	1869
9. Clinical Observations on Hydrate of Chloral as a Hypnotic in Typhus Fever (<i>Glasgow Medical Journal</i>), - - - - -	1870
10. Liebreich's theory on the action of Chloral (<i>Glasgow Medical Journal</i>), - - - - -	1870
11. Cases of Pyogenic Fever (Jenner) (<i>Glasgow Medical Journal</i>), - - - - -	1871
12. On Sub-Glottic Œdema of the Larynx and permanent Stricture following Typhus (<i>Glasgow Medical Journal</i>), - - - - -	1871
13. On revaccination (<i>Glasgow Medical Journal</i>), - - - - -	1871
14. Notes on the use of Xylol in Small-pox with reference to the fallacies incidental to the treatment of Small-pox (<i>Glasgow Medical Journal</i>), - - - - -	1872
15. A Study of 972 cases of Small-pox with reference to the modifying influence of vaccination (<i>Glasgow Medical Journal</i>), - - - - -	1872
16. Report of an outbreak of Enteric Fever connected with milk supply (Parkhead) (<i>Glasgow Medical Journal</i>), - - - - -	1873
17. The Air of Glasgow, a review (<i>Glasgow Medical Journal</i>), - - - - -	1873
18. Occasional Reports on local Outbreaks of Epidemic Disease (<i>Glasgow Medical Journal</i>), - - - - -	1874

LIST OF PUBLISHED PAPERS

	YEAR.
19. On the immediate results of the operations of the Glasgow Improvement Trust as regards the inhabitants displaced (<i>Royal Philosophical Society of Glasgow</i>), - - - -	1874
20. Report on Construction of Small-pox Hospitals, - - - -	1874
21. Report on certain outbreaks of Enteric Fever in Glasgow (Milk Epidemic--South-side), - - - -	1875
22. Further information on the immediate results of the Operations of the Glasgow Improvement Trust as regards the Inhabitants displaced (<i>Glasgow Medical Journal</i>), - - - -	1876
23. An Address on the sanitary results of the Glasgow Improvement Act delivered at the opening of the Section on Public Medicine at the Sheffield meeting of the British Medical Association (<i>Sanitary Journal for Scotland</i>), - - - -	1876
24. Local Vices of Buildings, as affecting the Death-rate (<i>Sanitary Journal for Scotland</i>), - - - -	1876
25. Report upon uncertified deaths in Glasgow, - - - -	1876
26. On the influence of the Friendly Societies Act, 1875, upon the proportion of uncertified deaths in Glasgow (<i>Glasgow Medical Journal</i>), - - - -	1876
27. On the comparative prevalence of Filth Diseases in town and country (<i>Royal Philosophical Society of Glasgow</i>), - - - -	1877
28. Illustrations of a high death-rate independently of Zymotic Diseases (<i>Sanitary Journal for Scotland</i>), - - - -	1877
29. Report on outbreak of Enteric Fever in the West-end of Glasgow and Hillhead, with Memorandum on the milk supply of Glasgow in relation to dissemination of disease by milk, - - - -	1878
30. Report on the Air of Glasgow, chiefly relative to enclosed spaces and smoke, by William J. Dunnachie, in co-operation with the Medical Officer of Health, - - - -	1879
31. Lectures on the theory and general prevention and control of infectious disease, and of air, water supply, sewage disposal, and food, by William Wallace, Ph.D., F.C.S., delivered under the auspices of the Lord Provost, Magistrates, and Town Council of the City of Glasgow, and published by them, - - - -	1879
32. First principles of cleanliness as regards earth, air, and water (<i>Sanitary Journal for Scotland</i>), - - - -	1879
33. On the result of Inquiries after defaulters under the Vaccination (Scotland) Act, 1863 (<i>Sanitary Journal for Scotland</i>), - - - -	1879
34. On the conveyance of the contagion of Anthrax to Hair Factory Workers, as illustrative of the particulate theory of infection (<i>Royal Philosophical Society of Glasgow</i>). (See also report of certain cases of sickness and death occurring among the workers in Adelphi Hair Factory, Glasgow, 1878, in Appendix to the Report of the Medical Officer of the Local Government Board of England, 1878), - - - -	1880

LIST OF PUBLISHED PAPERS

	YEARS.
35. Ventilation. Local Authority of Glasgow v. Young (<i>Sanitary Journal for Scotland</i>), - - - -	1880
36. Itch. A memorandum on the duties of Local Authorities with regard to Itch, - - - -	1880
37. Certain epidemic outbreaks of Enteric Fever in April, 1880, traced to contamination of milk, - - - -	1880
38. Remarks by the Medical Officer to accompany Quarterly Tables on Mortality, - - - -	1873-80
39. A Sanitary retrospect (<i>The Decade, 1871-81, Proceedings, Philosophical Society of Glasgow</i>), - - - -	1881
40. The House (<i>Glasgow Health Lectures</i>), - - - -	1881
41. The Decennial Census as a basis for the statistics of intervening years, illustrated by the case of Glasgow, with tables from the Census, - - - -	1881
42. Report on cases of infectious disease in Dairy Farms, - - - -	1881
43. On the existing sanitary regulations of the Milk Trade (<i>Sanitary Journal for Scotland</i>), - - - - Part I.,	1881
44. On the existing sanitary regulations of the Milk Trade (<i>Sanitary Journal for Scotland</i>), - - - - Part II.,	1881
45. Adulterated Butterine (<i>Sanitary Journal for Scotland</i>), - - - -	1881
46. Report on an outbreak of Splenic-apoplexy, or Anthrax, at Elderslie, near Glasgow (<i>Sanitary Journal for Scotland</i>), - - - -	1881
47. Report on outbreak of Fever at Balfron (<i>Sanitary Journal for Scotland</i>), - - - -	1882
48. Memorandum on the Hospital accommodation for infectious diseases in Glasgow, - - - -	1882
49. On transgression of jurisdiction in medical relief of sickness (<i>Sanitary Journal for Scotland</i>), - - - -	1882
50. The policy and practice of Glasgow in the management of epidemic diseases, with results, 1881-82 (<i>Epidemiological Society of London</i>), - - - -	1883
51. Remarks upon night inspection for overcrowding during last 11 years in Glasgow (<i>Sanitary Journal for Scotland</i>), - - - -	1883
52. Sanitary reform in the rural districts of Scotland. A necessity in the interests of populous places (<i>Sanitary Journal for Scotland</i>), - - - -	1883
53. On Disinfection (<i>Glasgow Medical Journal</i>), - - - -	1884
54. Report on outbreak of Enteric Fever in Glasgow Royal and Western Infirmarys, and at the Fever Hospital of Belvidere in Glasgow, - - - -	1884
55. The houses of the poor and the responsibility of landlords: an address (<i>Sanitary Journal for Scotland</i>), - - - -	1884
56. Public Health and Pauperism (<i>Sanitary Journal for Scotland</i>), - - - -	1884
57. Children of the City. What can we do for them? (<i>Edinburgh Health Lectures</i>), - - - -	1886
58. The Vital Statistics of the City of Glasgow, Parts I., II., and III., including a retrospect of the 15 years 1871-85, - - - -	1886

	YEARS.
59. On some Sociological aspects of Sanitation (<i>Proceedings, Royal Philosophical Society, Glasgow</i>), - - - - -	1887
60. The house in relation to Public Health (<i>Insurance and Actuarial Society of Glasgow</i>), - - - - -	1887
61. Reports on the air of Glasgow, with tables of wind, temperature, and rainfall, by S. M. Dickson, B.Sc., in co-operation with the Medical Officer of Health (7 in number), - - - - -	1887-88
62. On the "Ticketed Houses" of Glasgow, with an interrogation of the facts for guidance towards the amelioration of the lives of their occupants (<i>Proceedings, Royal Philosophical Society, Glasgow</i>), - - - - -	1888
63. The history and circumstances of a peculiar outbreak of febrile disease in St. Mary's Roman Catholic Industrial School for boys, Glasgow, - - - - -	1888
64. The City of Glasgow Fever and Smallpox Hospitals, Belvidere,	1888
65. Life in one room: A lecture delivered to the Park Parish Literary Institute, - - - - -	1888
66. Sanitation and Social Economics (<i>Proceedings, Royal Philosophical Society, Glasgow</i>), - - - - -	1889
67. On Common Lodging-houses (<i>Social and Sanitary Society of Edinburgh</i>), - - - - -	1889
68. Sanitary requirements of a Dairy Farm, - - - - -	1889
69. Errors in diagnosis of infectious disease, - - - - -	1890
70. Report on Greening Vegetables with Sulphate of Copper, - - - - -	1890
71. On some relations of the business of the Dairy Farm to public health: An Address to the Glasgow and West of Scotland Agricultural Society, January, - - - - -	1890
72. Memorandum on the proposed open space in Cowcaddens, - - - - -	1892
73. Obituary of W. R. W. Smith, - - - - -	1893
74. On food preservatives in relation to the provisions of the Food and Drugs Acts, - - - - -	1894
75. Uninhabitable houses: A paper read at the Congress of the Sanitary Association of Scotland, - - - - -	1894
76. The evolution of the function of Public Health Administration, as illustrated by the sanitary history of Glasgow, etc., - - - - -	1895
77. Prevention of Tuberculosis, - - - - -	1895
78. On the physical laws which govern the distribution of infection: An Address as President of the Preventive Medicine Section, British Institute of Public Health, Glasgow Congress, - - - - -	1896
79. A history of meat inspection in Glasgow. The detective <i>v.</i> Clearing-house system. An Address as President of the Sanitary Association of Scotland, Annual Congress, Dumfries, - - - - -	1896
80. Public health and social problems: An Address to the Glasgow University Medico-Chirurgical Society, February, - - - - -	1898

CHAPTER I.

THE FIRST HALF OF THE CENTURY: A PERIOD OF AWAKENING.

WHEN the progress of hygiene during the nineteenth century comes to be treated historically, a rough distinction may not unreasonably be drawn between the period in which public opinion was slowly ripening towards an intolerance of the overcrowding and grosser physical surroundings of life which the rapid growth of towns had made clamant, and that which followed when the removal of these conditions became the objective of much legislative and administrative effort. And to fairly appreciate the progress during this later phase some knowledge of the precedent conditions is necessary; for in them, once their relationship to disease was recognised, lay the stimulus to reform.

What these precedent conditions were, and whence they arose, are now matters of history. The industrial revolution, which the introduction of the factory system had inaugurated, was already producing, early in the century, rapid changes in the distribution of the population of the country.

Villages sprang into being wherever mineral wealth abounded, or a mountain stream could be harnessed to a mill wheel; towns entered on a period of growth unparalleled in their past history.

And with the new industrial conditions, came the ever-increasing demand for labour, which the rural districts gave freely of their manhood to supply.

A social revolution was to follow the industrial one; but the rising centres of industry, which were quickening with the new and strange life, were at first ill-adapted to cope with the industrial invasion. A new sense of civic responsibility was to be evolved from the chaos which resulted; but the time had not yet come when the modern city could recognise that its chief dangers lay within its own gates.

Populations had not as yet learned to appreciate the dangers of aggregation; and so pressure on area—or density of population—came to be lightly regarded. Nor were the requirements of refuse removal held in greater urgency, and accumulations were permitted in and around dwellings, which only convenience and an ignorance of their danger could tolerate. From this pollution of the soil arose also danger to water supplies, but it required an invasion of cholera to interpret the lesson which the more prevalent water-borne diseases failed to enforce.

And so, on a groundwork of overbuilding, overcrowding, pollution of soil, air, and water, fever prevalences grew apace, and for a time obscured by their magnitude the less startling but equally destructive ravages of lung diseases, and the diseases of childhood.

The life of the worker under such conditions could not but be held on a very insecure tenure. Sickness came to impair his economic value; and it is an interesting fact, now frequently overlooked, that sanitary administration as a function of government was evolved from an enquiry into the causes and conditions of poverty. The reports of the Poor Law Commission in England with which the names of Sir Edwin Chadwick and others are so closely associated, drew attention to the large proportion of pauperism which was due to preventable diseases. This led in 1843 to the appointment of a Royal Commission on the Health of Towns, and the report of this Commission formed the basis of the first Public Health (England) Act of 1848.

The first half of the century was thus essentially a period of awakening to the Public Health dangers which lay in the path of the new Industrialism, and what was true of towns generally, was almost in a special sense true of Glasgow in particular. Contemporary observers have left on record their opinion that its population during this period were living under conditions worse probably than any other town of the kingdom, and it is from this point that its advance in hygiene is to be measured.

During a period of exhausting illness in 1895, Dr. Russell devoted the weeks of his enforced rest to the preparation of a monograph, which was published towards the end of that year, in which he traced the Evolution of the Function of Public Health Administration as illustrated by the Sanitary History of Glasgow in the nineteenth century.

This monograph is in many ways unique. It begins by presenting a series of graphic word pictures, taken from the writings of several observers, of the local conditions existing in the early part of the century, and presents in a concrete

form the successive steps in the movement towards reform, with a wealth of illustration which still stands alone in the history of local sanitary effort.

In the portion selected for reproduction, in the present chapter, the narrative is brought down to the sixties decade, in which definite sanitary progress may be said to have begun.

The text, as now reproduced, is taken *verbatim* from the original.—(ED.)

THE EVOLUTION OF SANITARY ADMINISTRATION IN GLASGOW.

1800-1854.

POPULATION.¹

1801, - -	82,805.	1831, - -	202,426.
1811, - -	110,460.	1841, - -	280,602.
1821, - -	147,043.	1851, - -	347,001.

SANITATION.

HEALTH.

- | | |
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| 1800. <i>First Police Act.</i> ² | |
| 1806. The Glasgow Waterworks Company constituted. Works, Dalmarnock. Clyde Water. | |
| 1807. <i>Second Police Act.</i> | |
| 1808. The Cranstonhill Waterworks Company Constituted. Clyde Water. | |
| | 1818. Typhus Epidemic. |
| 1821. <i>Third Police Act.</i> | |
| 1830. <i>Fourth do.</i> | |
| 1832. THE CHOLERA ACTS. | 1832. Do.
First Cholera Epidemic—2842 deaths, or 14 per 1000. Death rate, 46. |
| | 1837. Typhus Epidemic—2180 deaths. Death-rate, 41. |
| 1837. <i>Fifth Police Act.</i> | |
| 1838. Amalgamation of the two Water Companies. | |
| 1843. <i>Sixth Police Act.</i> | 1843. Relapsing Fever Epidemic—1398 deaths. Death-rate, 32. |
| 1846. <i>Seventh Police and Extension Act.</i> | |
| „ NUISANCE REMOVAL (SCOTLAND) ACT. | 1847. Typhus Epidemic—4346 deaths. Death-rate, 56. |
| 1848. Gravitation Water introduced to Gorbals by Private Company (February). | 1848-9. Second Cholera Epidemic—3772 deaths in 1849, or 11 per 1000. Death-rate, 35. |
| | 1851-2. Typhus Epidemic. |
| 1854. SCOTCH REGISTRATION ACT. | 1853-4. Third Cholera Epidemic—3885 deaths in 1854, or 12 per 1000. Death-rate, 42. |

¹The populations here given are the census populations of Glasgow and Suburbs within the area adopted in 1821 for the Bills of Mortality referred to in the text (ED.).

²Local Acts are printed in *Italics*; Imperial in SMALL CAPITALS.

Prior to 1855, the register of burials kept by the wardens of church-yards was the only source of information as to the number of deaths or their causes. "Mortality Bills" made up from these sources were systematically published from 1821, and from 1832 a succession of able statisticians issued annual reports, which kept vividly before the community the facts so far as known regarding the prevalent causes of death. What these facts were may be very shortly stated. The city was devastated with epidemics of "Fever" and Small-pox. Though Typhus did not arrest attention by any epidemic prevalence until 1818, it was in the city from the very beginning of the century. Its subsequent history was that of an active volcano, periods of deceptive repose alternating with violent eruptions. For short intervals it smouldered in the wynds. When the steady influx of immigrants, attracted by the prospect of work, had reproduced a susceptible population, it burst out into an epidemic. Small-pox, though warded off from the infant population by the early introduction of Jenner's discovery, was scarcely ever entirely absent, apparently feeding chiefly on the Celtic immigrants, and becoming epidemic at intervals as they accumulated. There were three severe epidemics of Cholera in this period—the first in 1832, the second in 1848-9, the third in 1853-4. An outbreak of Relapsing Fever in 1843 attacked more than a quarter of the inhabitants of the poorer districts. Underneath these periodic eruptions flowed a continuous condition of ill-health, which represented the chronic as the former represented the periodic results of precisely the same physical circumstances in the environment of the population.

It is difficult to convey to the present generation any adequate conception of what such varied recurrent epidemics meant in the experience of their forefathers. An attempt may be made so far as figures will go. In 1837 the population of Glasgow was 253,000, the death-rate was 41 per 1000, the number of deaths from "Fever" was 2180, or 8.6 per 1000. It was estimated that at least 21,800 persons suffered from the disease that year. In 1847 the population of Glasgow was 320,470, the death-rate was 56.4 per 1000, the number of deaths from "Fever" was 4346, or 10.4 per 1000, representing in cases some 45,000 persons.¹ If every case now treated in our Hospitals was one of Typhus they would only feebly

¹The worst epidemic year of recent years was 1901, in which the population of Glasgow was 761,712; the general death-rate, 20.6; the number of deaths from "fever," 220; the number of cases of "fevers" notifiable, 1385; and the number of deaths from all infectious diseases, 3416, or 4.4 per 1000 living. The total number of cases of infectious diseases registered during the year was 21,145, or less than the number believed to have suffered from "Typhus" fever alone in 1837 (Ed.).

represent the number of typhus patients pressing for admission to the Infirmary and Parochial Fever Wards of those days. Inside these gaunt figures there are the recurrent panics, the spasms of lavish expenditure, as barren of real profit as the costs of war, the burials to be defrayed by the public, the widows and orphans to support, the lives of medical men, of clergymen, and of nurses annually lost.

It is interesting and important to note what was said by the contemporaries of these events as to their causes and done for their prevention. The pamphlet literature is considerable and the medical part of it very out-spoken. From the advice given as to what ought to be done, we can at least learn what had not hitherto been done. We have also reports upon the sanitary condition of Glasgow, made from time to time by Royal Commissioners and others, who weighed with a sense of official responsibility what they wrote. The following are quotations from a few of the more striking of these testimonies arranged in chronological order:—

1818.—DR. ROBERT GRAHAM, Regius Professor of Botany
in the University.¹

"If any man wonders at the prevalence of continued fever among the lower classes in Glasgow, or at its spreading from their habitations, let him take the walk which I did to-day with Mr. Angus, one of the district surgeons. Let him pick his steps among every species of disgusting filth, through a long alley, from four to five feet wide, flanked by houses five floors high, with here and there an opening for a pool of water, from which there is no drain, and in which all the nuisances of the neighbourhood are deposited in endless succession, to float and putrify and waste away in noxious gases. Let him look as he goes along into the cellars which open into this lane, and he will probably find lodged, in alternate habitations, which are no way distinguished in their exterior, and very little by the furniture which is within them, pigs, cows, and human beings which can scarcely be recognised till brought to the light, or, till the eyes of the visitant get accustomed to the smoke and gloom of the cellar in which they live. I have been to-day in several dens of this kind, where I did not see persons lying on the floor near me, till Mr. Angus, whom a previous visit had taught where to find them, inquired after their health. I was in one closet, measuring twelve feet by less than five, on the floor of which he told me six people had lain, affected with fever, within these two days, and where I saw the seventh inhabitant now confined. We found in one lodging-house, fifteen feet long by nine feet from the front of the beds to the opposite wall, that fifteen people were sometimes accommodated; and when we expressed horror at the situation in which they were placed,

¹Practical Observations on Continued Fever, especially that form at present existing as an Epidemic, with some Remarks on the most efficient plans for its suppression. Glasgow, 1818.

the woman of the house, somewhat offended, and, I believe, a little alarmed lest we should cause some enquiry to be made by the police, said, in support of the character of her establishment, that *each family* was provided with a *bed*, and that she very seldom had anybody lying on the floor. I shall only mention one other instance of misery. In a lodging-house consisting of two rooms, separated by boards, the first thirteen feet by eleven, the other fifteen by eight, twenty-three of the lowest class of Irish were lately lodged. To-day there are fourteen, of whom two are confined with fever, three are convalescent, and one only has hitherto escaped. There are only three beds in this house (denominated with that facetiousness which enables an Irishman to joke with his own misery, Flea Barracks)¹—one of them in a press half-way up the wall, the others wooden frames, on which are laid some shavings of wood, scantily covered with dirty rags. Most of the patients were lying on the floor. A man, two sons, and an adult daughter, were lying side by side on the floor of the first room, their bedding of the same materials with the others, and the boys being destitute of shirts. Could imagination feign a combination of circumstances more horribly conducive to disease and immorality ?

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“An important step towards ventilation would be effected, if we could even open up the lanes in which the lower classes live. In Glasgow, the hovels which they inhabit are collected into dense masses of very great size between some of the larger streets. I believe it would greatly add to the healthiness of the place, if some improvements which I have heard talked of were effected, and straight and wide streets carried in different directions through these depositories of wretchedness. It would not, I think, be easy to devise a more judicious charity, than the building of houses for the poor on an approved plan, and in a good situation. . . . However difficult it might be found to effect a proper ventilation of the houses of the poor, the crowding of these may surely in many cases at least be prevented by the police. Perhaps it might be thought a strong measure to enter a man's house, and regulate the accommodation of his family, even though public good seemed to require it, but I should conceive that lodging houses are strictly under the cognizance of the police, and that the Magistrates are quite entitled to license these, and to put them under regulation. . . . With regard to lessening of some of the circumstances which favour the action of contagion, I am confident the police can and ought to do a great deal. They can compel the removal of the dunghills, or the filling up of the ground on which they stand, so that they may no longer remain a pool of stagnant filth; they can renew the pavement in the closes, giving them all an inclination towards the street, so that the water may not stagnate in them; or, if this cannot

¹“I then [1815 or 1816] left Lady Marshall's Close, and came to the foot of the Old Wynd, and took lodgings in a celebrated spot called the 'Flea Barracks.' This place was on a ground floor, *near a dung-heap*. It was kept by an Irish woman. . . . The Flea Barracks, to my knowledge, have been the resort of all sorts of bad characters for the last thirty years.” “Hawkie,” in his Autobiography, written in Town's Hospital, 1840-50. Glasgow, David Robertson, 1888.

be done, they may put drains in them, to carry the water to the common sewer; they can compel the cleaning of the closes by the inhabitants themselves, which can be no difficult task, as almost everywhere there is one, and sometimes two water-pipes in these places. I believe the flooding of the kennels in the closes once every day, and the removal of the multiplied nuisances with which they abound, would go further than is generally supposed in the prevention of contagion.”

1837.—DR. COWAN, Professor of Medical Jurisprudence in the University.¹

“Many of the causes of the production and propagation of Fever must be ascribed to the habits of our population; to the total want of cleanliness among the lower orders of the community; to the absence of ventilation in the more densely peopled districts; and to the accumulation, for weeks or months together, of filth of every description in our public and private dunghills; to the over-crowded state of the lodging-houses resorted to by the lowest classes; and to many other circumstances unnecessary to mention.

“Before the Municipal Bill for Glasgow is presented to the Legislature, a well-digested system of medical police should be drawn up and incorporated with the other necessary enactments. Power should be vested in the police to enforce the daily removal of filth of every description. Public water-closets should be established, and every measure calculated to promote the general health rigidly enforced.

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“A few thousand pounds, judiciously expended in opening up the districts most densely populated, and in other obvious ways, would greatly tend to alleviate the pressure of our heaviest municipal tax—the ‘fever tax.’”

1838.—J. C. SYMONS, Assistant Commissioner on the Condition of Handloom Weavers.²

“These districts [the low districts of Glasgow] contain a motley population, consisting in almost all the lower branches of occupation, but chiefly of a community whose sole means of subsistence consists in plunder and prostitution. Under the escort of that vigilant Officer, Captain Miller, the superintendent of the Glasgow Police, I have four times visited these districts, once in the morning and three times at night; I have seen human degradation in some of its worst phases, both in England and abroad, but I can advisedly say, that I did not believe, until I visited the wynds of Glasgow, that so large an amount of filth, crime, misery, and disease existed on one spot in any civilised country. The wynds consist of long lanes, so narrow that a cart could with difficulty pass along them; out of these open the ‘closes,’ which

¹Statistics of Fever and Small-pox in Glasgow. Read to Statistical Society of Glasgow, 1837.

²Reports from Assistant Handloom Weavers Commissioners, Parliamentary Paper, issued 27th March, 1839.

are courts about fifteen or twenty feet square, round which the houses, mostly of three storeys high, are built; the centre of the court is the dunghill, which probably is the most lucrative part of the estate to the laird in most instances, and which it would consequently be esteemed an invasion of the rights of property to remove. . . . In the lower lodging-houses, ten, twelve, and sometimes twenty persons, of both sexes and all ages, sleep promiscuously on the floor in different degrees of nakedness. These places are generally, as regards dirt, damp, and decay, such as no person of common humanity would stable his horse in.

"Many of the worst houses are dilapidated and in a dangerous state, and are condemned by the Dean of Guild Court, a sentence of which the execution appears to be generally postponed, and which renders these abodes doubly desirable to the occupants, as the passing of sentence prevents the levy of rent.

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"I visited the parts of Edinburgh likewise, where the lowest portion of the community reside, but nothing which can for a moment be compared with the wynds of Glasgow exists there. It is my firm belief that penury, dirt, misery, drunkenness, disease, and crime culminate in Glasgow to a pitch unparalleled in Great Britain."

1839.—HENRY PAUL, a Magistrate of the City.¹

"No one at all acquainted with the state of many of the Lanes and Closets of this City, and of the miserable lodging-houses with which these abound, can be astonished at the extent to which Fever often prevails among our population. Having had occasion, in the discharge of official duty as a magistrate, to visit many of these dwellings, I can unhesitatingly declare that the scenes which have been presented, few could have imagined to exist, and, in my humble judgment, a better state of things will never be brought to take place, until many of the loathsome hovels of the poor be entirely removed, and until a more free and properly ventilated atmosphere be introduced into their dwellings. How this can be best and most effectually accomplished, I shall not now presume to determine, but it is assuredly a subject well entitled to the best consideration of those who feel an interest in the prosperity of our City, and in the general health and comfort of our citizens."

1840.—CAPTAIN MILLER, Chief Constable of the City.²

"*Health.*—In the very centre of the city there is an accumulated mass of squalid wretchedness, which is probably unequalled in any other town in the British dominions. In the interior part of the square, bounded on the east by Saltmarket, on the west by Stockwell Street, on the north by Trongate, and on the south by the river, and also in certain parts of the east-side of High Street, including the Venals, Havannah, and Burnside, there is concentrated everything that

¹ The Glasgow Mortality Bill for the year ending 31st December, 1838.

² Proceedings British Association—Glasgow Meeting, 1840, paper "On the State of Crime within the Glasgow and City Police Jurisdiction," p. 170.

is wretched, dissolute, loathsome, and pestilential. These places are filled by a population of many thousands of miserable creatures. The houses are unfit even for styes, and every apartment is filled with a promiscuous crowd of men, women, and children, all in the most revolting state of filth and squalor. In many of the houses there is scarcely any ventilation, and, from the extremely defective sewerage, filth of every kind constantly accumulates."

1840.—DR. NEIL ARNOTT—Official Report to Poor Law Commissioners.¹

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

"We entered a dirty low passage like a house door, which led from the street through the first house to a square court immediately behind, which court, with the exception of a narrow path around it leading to another long passage through a second house, was occupied entirely as a dung receptacle of the most disgusting kind. Beyond this court the second passage led to a second square court, occupied in the same way by its dunghill; and from this court there was yet a third passage leading to a third court, and third dungheap. There was no privies or drains there, and the dungheaps received all filth which the swarm of wretched inhabitants could give; and we learned that a considerable part of the rent of the houses was paid by the produce of the dungheaps. Thus, worse off than wild animals, many of which withdraw to a distance and conceal their ordure, the dwellers in these courts had converted their shame into a kind of money by which their lodging was to be paid. The interiors of these houses and their inmates corresponded with the exteriors.

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"Several intelligent inhabitants of Glasgow stated that they were persuaded, if any capitalists would buy the ground of these wynds, and pull down the houses to substitute better houses in wide streets, with good drainage, the increased rental would make the speculation, even to them, very profitable, while the saving to the community of the cost of supporting the wretched widows and orphans of men who die of the disease generated in the place would exceed the amount of any rent which the property could produce."

¹ Reports on the Sanitary Condition of the Labouring Population of Scotland, in consequence of an Enquiry directed to be made by the Poor Law Commissioners. Presented to Parliament, July, 1842.

1842.—MR. CHADWICK, Secretary to the Poor Law Commissioners.¹

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

1843.—THE DISTRICT SURGEONS OF THE PARISHES OF GLASGOW.²

[In preparation for his paper on the Sanitary State of Glasgow in relation to the Epidemic of Relapsing Fever in 1843, Dr. Perry asked the District Surgeons to write reports on the state of their districts. He printed those reports as an Appendix to his paper, and, referring to it, says he "*earnestly recommended to our civic authorities the careful perusal of these reports. From them they will learn the state of danger in which we live, if matters are allowed to continue as they are.*" They preserve what is in fact a description as detailed as a directory of the Closes and Wynds as they were seen in 1843 by those men in the course of their professional duties. A few extracts are given as a sample.]

DISTRICT II.—DR. KENNEDY.

"All the closes in the Bridgegate, from Merchant Lane to Market Lane, are kept in a most abominable manner. I may particularly mention 101 or Miller's Close, 95 or Mitchell's Close, 87 or Glue and Size Close, 81 or Marshall's Close, 71, 65 or Scanlan's Close; but if a prize were to be given for abominations of all kinds, Miller's Close deserves it. . . . The next worst part of my district is that part of west side of Saltmarket, extending from Bridgegate up to Princes Street. The closes are all thickly peopled and kept in a most disgraceful state."

DISTRICT IV.—DR. D. SMITH.

[To the East of Saltmarket.]

"The tenements in which I have visited are occupied from the cellars to the attics, and almost altogether kept for lodging-houses, many of them being more fit for pig-styes than dwellings for human beings; and in not a few the donkey and the pigs rest at night in the same apartment with the family. The entrance to these abodes is generally through a close, not unfrequently some inches deep with water or mud, or the fluid part of every kind of filth, carelessly thrown down from unwillingness to go with it to the common receptacles; and in every close there is at least one of these places, situated often immediately under the windows of the dwelling-houses, or together with byres,

¹ Report of Poor Law Commissioners on an Enquiry into the Sanitary Condition of the Labouring Population of Great Britain. Presented to Parliament, July, 1842.

² Facts and Observations on the Sanitary State of Glasgow during the last year, etc., by Robert Perry, M.D., with an Appendix containing Reports from the District Surgeons. Glasgow, 1844.

stables, etc., forming the ground floor, while the stench arising therefrom in summer pollutes the neighbourhood, and more especially renders the habitations above almost intolerable. The beds are variously constructed, some being merely a portion of the floor divided by a piece of wood kept in its place with stones or brick, . . . in other cases the beds are formed in tiers over each other, as in the steerage of an emigrant ship. . . . Need I add to this, that the inhabitants with whom I have to deal are of the very lowest ranks in society; a few of them are labourers, but the greater majority are hawkers and beggars, thieves and prostitutes. At night whole families sleep in one bed; and as there are several beds in each apartment, several families are made to occupy it. . . . In short, of the moral degradation, grossness and misery of those people, no adequate description can be given; and few, very few indeed, besides the District Surgeons know the actual condition of the pauper population of Glasgow. The Highland Close, Jefferies' Close, and Todd's Close enter from off Goosedubbs, there fever has prevailed to a fearful degree, and all these places abound in filth; are overcrowded with inhabitants, the lowest of our pauper population."

DISTRICT XI.—DR. BROWN.

[Between New Vennel and Duke Street, High Street, and the Molindinar. Population, 5300. Attended 1700 cases in twelve months! Chiefly inhabited by thieves and prostitutes. Only a sentence here and there can be quoted.]

"64 Havannah Street is not surpassed by any close in the city for filth, misery, crime, and disease; it contains 59 houses, all inhabited by a most wretched class of individuals; several of these houses do not exceed 5 feet square, yet they are forced to contain a family of sometimes six persons. . . . 105 Havannah Street was an old Carpet Factory, lately arranged into 36 cells about 7 feet square, . . . comfort, convenience, and ventilation kept out of sight; there is scarcely a bed in the whole land but what was supplied by me from the Town's Hospital. As might be supposed, fever raged dreadfully here; . . . the whole furniture is not worth a week's rent; the cellars behind are converted into houses of the worst description. . . . The whole of the Burnside, especially the ground floors, are not fit places for pigs; height of ceiling 6 feet, and at almost every flood in the Clyde they are inundated by the Molindinar Burn; every inhabitant of these dens has had fever; it literally swarms with prostitutes of the lowest class."

DISTRICT XII.—DR. FISHER.

[Between Candleriggs and High Street, north of Trongate.]

"This space forms part of a district of this great city which, in the opinion of one capable of judging of the subject, contains a greater amount of human degradation, both moral and physical, than is to be found in any corresponding space of the Kingdom of Great Britain. I do not think him wrong, for I cannot conceive of human beings more sunk in vice, or labouring under a heavier load of misery than are the

wretched inhabitants of the part to which I refer. . . . No. 75 High Street, a very dirty close, abounding in low Irish Lodging-houses. The floors of the houses in the ground flats are damp and dirty, in fact little better than cellars. The upper part of the close is very filthy. The lower flat of one of the houses here was lately appropriated to the breeding of swine, while several families occupied the flats above. The part of the close at the side of the house is used as a dunghill, which renders access to it by no means either pleasant or easy. I believe every inhabitant of this tenement has had fever. Upwards of 120 cases occurred in the close. . . . No. 83, a very filthy close. . . . No. 93, or Pipehouse Close, is the filthiest in the district. . . . No. 13 Bell Street, a dirty close, with a dunghill at the head of it. . . . No. 23, a long dirty close. In one house at the top of it several severe cases occurred. Access is obtained to this house, or rather apartment, by an outside stair, by the side of which is a dunghill, the stench from which is intolerable. I have seen the dung reach the landing place on the top of the stair. I attended for fever almost every individual residing in the front land."

DISTRICT XV.—DR. HANNAH.

"The fever showed itself first among the very poorest of the inhabitants, and in the most filthy places, such as the close No. 275 High Street, 46 and 47 Rottenrow, and the adjoining places, where it has ever since prevailed to a great extent."

GORBALS.—DR. STRANG.

"In the back lands of closes 6 and 13 Clyde Terrace not a single family or member of a family has escaped. The inhabitants are . . . very dissipated, and particularly dirty. The tenements in 13 are unfit for any purpose in the shape of habitation. . . . In a lodging-house in Parker's Close (102 Main Street) saw ten individuals lying with the fever at the same time in one apartment, and that den without a window. The Sweep's and Barker's Closes are truly miserable places."

ANDERSTON.—DR. M'EWAN.

"800 cases of the prevailing epidemic have come under my notice in the short period of six months; and these for the most part in the dirtiest districts of this burgh—in ill-ventilated underground cellars and in old houses."

1849.—DR. SUTHERLAND, General Board of Health.¹

"It is in those frightful abodes of human wretchedness which lay along the High Street, Saltmarket, and Briggate, and constitute the bulk of that district known as the 'Wynds and Closes of Glasgow,' that

¹ Report on the Measures adopted for the Relief of Cholera in Glasgow during the Epidemic of 1848-49—Appendix A to a Report of General Board of Health on the Epidemic Cholera of 1848-49.

all sanitary evils exist in perfection. They consist of ranges of narrow closes, only some four or five feet in width, and of great length. The houses are so lofty that the direct light of the sky never reaches a large proportion of the dwellings. The ordinary atmospheric ventilation is impossible. The cleansing, until lately, was most inefficient, and, from structural causes, will always, under existing arrangements, be difficult and expensive. There are large square midden-steads, some of them actually under the houses, and all of them in the immediate vicinity of the windows and doors of human dwellings. These receptacles hold the entire filth and offal of large masses of people and households, until country farmers can be bargained with for their removal. There is no drainage in these neighbourhoods, except in a few cases; and from the want of any means of flushing, the sewers, where they do exist, are extended cesspools polluting the air. So little is house drainage in use, that on one occasion I saw the entire surface of a back yard covered for several inches with green putrid water, although there was a sewer in the close within a few feet into which it might have been drained away. The water-supply is also very defective; such a thing as a household supply is unknown, and I have been informed that, from the state of the law, the water companies find it impossible to recover rates, and that, had the cholera not appeared, it was in contemplation to have cut off the entire supply from this class of property.

"The interior of the houses is in perfect keeping with their exterior. The approaches are generally in a state of filthiness beyond belief. The common stairs and passages are often the receptacles of the most disgusting nuisances. The houses themselves are dark, and without the means of ventilation. The walls dilapidated and filthy, and in many cases ruinous. There are no domestic conveniences even in the loftiest tenements, where they are most needed, except a kind of wooden sink placed outside some stair window, and communicating by a square wooden pipe with the surface of the close or court beneath. Down this contrivance, where it does exist, is poured the entire filth of the household or flat to which it belongs, and the solid refuse not unfrequently takes the same direction till the tube becomes obstructed.

* * * * *

"Another matter connected with these districts, and their peculiar liability to epidemic disease, is the great and continually increasing overcrowding that prevails. I have been credibly informed, that for years a population of many thousands has been annually added to Glasgow by immigration without a single house being built to receive them. The great proportion come from Ireland. Every cabin in that wretched country that is razed to the ground sends one or more families to find house-room in the cities of England and Scotland, and of this element of disease Glasgow obtains its full share.

* * * * *

"The overcrowding and wretchedness of late years has brought typhus with it, a disease that not long ago was almost as rare in the large Cities of Scotland as ague now is: and wherever typhus has prevailed, there cholera now prevails, or has done so recently."

Many more witnesses might be called, but only to corroborate and repeat those testimonies. It is proved beyond question that a considerable proportion of the population lived in districts in which the houses were so crowded upon the soil as to be beyond the reach of sun or air, and to leave no more space than was necessary for access of the residents to the recesses of those continuous masses of building, that those houses were crowded without consideration either of health or decency, and their inhabitants left uncared for and so shut out from all chance of cleanliness of life as to have reached the lowest depth of physical and moral degradation. The urgency of remedial measures for the clearing out and reconstruction of these localities was persistently pointed out, but not until towards the end of the period under review (1800-1854) was a beginning made and then only a beginning. Under the immediate stimulus of the Cholera of 1848 the Dean of Guild Court began to put in force its power to require houses or buildings which were "insecure, ruinous, or in any other way dangerous to the safety of the inhabitants" to be demolished or repaired. Many of the most disreputable tenements in the wynds of Glasgow proper, and in Calton, Gorbals, and Anderston, were thus dealt with, but it was only because they could hold themselves upright no longer! The special reports of the proceedings of this Court from 1848 to 1851, which appeared in the *Glasgow Herald*, served a most useful educational purpose.¹ Alongside of the petitions of the Procurator-Fiscal for those demolitions came up applications for permission to erect new buildings, which the Court had reluctantly to pass although plainly reproductions of the old. In fact, substantial structures could be erected even on the sites of these condemned buildings so that the encumberment of space was not lessened. The *Herald* pointed to the "Wynds" which were being laid out on the Blythswood and Milton feus and demanded a Building Act. In 1851, the Dean of Guild brought the necessity of such an Act before the Town Council. We are also told by Mr. Carrick that "soon after 1846 the Town Council resolved to set aside the sum of £30,000 for acquiring property in the districts known as the wynds and in the closes abutting on the High Street, the Saltmarket, and in the Gorbals. A large amount of property was thus acquired."² Another noteworthy result of those distressful forties was the "Model Lodging Association," got up by large-hearted citizens, which established three large houses, thus anticipating one of the most useful works of the

¹ They form the first chapter of vol. 1 of *Glasgow Past and Present*, pp. 1-240, Glasgow, 1884.

² *Glasgow Past and Present*, vol. 1, p. xxi.

Improvement Trust by which they were ultimately acquired. When we consider the next period, 1855-64, it will be made evident that all this was a mere scratching of the surface, and that not until 20 years later was anything radical and effectual done.

It is further evident that not merely was the permanent structure of the city bad, but the daily service required to keep the city wholesome in its life was practically neglected—the cleansing, the repairs, the distribution of fresh water, the removal of foul, all the primary duties of civic management were either wholly undone or very imperfectly done. Of sanitation in the modern sense there was none. In the Police Acts passed in 1800, 1807, 1821, 1830, and 1837 there are clauses as to scavenging streets and public places by the authorities, and private closes, &c., by proprietors, but it was not until 1843 that an Inspector of Cleansing was introduced and powers taken "to make regulations for watering, sweeping and cleansing closes, thoroughfares and areas, for the purpose of disinfection and otherwise promoting the health of the inhabitants therein," for the cleansing of common stairs by tenants; for regulating the emptying of middens and privies "according to their dimensions and the local circumstances as regards the health and comfort of the persons in the neighbourhood"; to license Common Lodging-houses, prevent overcrowding, and secure the reporting of fever by the keepers; for carrying out disinfection by the Magistrates through the Police. Altogether this Act marked a considerable advance, but it was chiefly on paper. It provided no special executive machinery, functions were so far defined but, except as regards cleansing, were left as a sort of bye-play to officials appointed primarily for police purposes. Dr. Scott Orr¹ tells us that the great epidemic of 1847 was in full swing before any attempt was made to disinfect either houses or clothing; and Dr. Sutherland² testifies to the shameful inefficiency of the general sanitary service in 1849. The filth was a perquisite of the householders and was removed at the convenience of farmers, a system which now exists only in the smallest of villages.

This brings us to the measures adopted for the prevention and control of infectious disease at this period. In the wide and provident sense there were none. Fevers as such were not dealt with preventively, only epidemics. Each epidemic

¹ Historical and Statistical Sketch of the Progress of Epidemic Fever in Glasgow during the year 1847. *Edinburgh Medical Journal*, 1848.

² Report on the measures adopted for the relief of Cholera in Glasgow during the epidemic of 1848-9, Appendix A to a report of General Board of Health on the Epidemic Cholera of 1848-9.

was a tragedy. When it was played out all the properties were dispersed and the stage left unfurnished. We shall deal with the important matter of hospital isolation by itself subsequently. Suffice it to say meanwhile that from its opening in 1794 for 70 years the Royal Infirmary was the centre of every provision for isolation. At one time indeed the managers even disinfected the houses from which they removed fever patients. The usual course of events was the rapid extension of the epidemic until the Infirmary Fever House was overflowing, then public excitement, public meetings, the appointment of a "Fever Committee" or a "Board of Health," as in 1832 and 1837, the collection of funds, a rushing about for sites for temporary hospitals, attendance at home, the organization of a staff of fumigators, &c. Then the disease in due time began to decline; it shrank within the capacity of the Royal Infirmary; the hospitals were pulled down, the doctors, nurses, and fumigators who had not been buried were paid off; a report of the receipts and disbursements was submitted and the Board or Committee ceased to be. The play was over; the old properties were not even stowed away, they were burned.

This evil method was not a feature of the locality. It was the method of the period. This was the fashion of the first instinctive effort at self-protection when the Cholera spectre stalked into the land. The Preamble to the Cholera Acts (English and Scotch) of 1832 is worth quoting, it so vividly exhibits the administrative mind of the time. It runs: "whereas it has pleased Almighty God to visit the United Kingdom with the disease called Cholera, or spasmodic or Indian Cholera, and whereas . . . with the view to prevent as far as possible by the Divine Blessing, the spread of the disease, it may be necessary that rules and regulations should from time to time be established within cities, &c., affected with, or which may be threatened by the said disease, . . . be it enacted that it shall and may be lawful for the Lords and others of H.M. Most Honourable Privy Council . . . to establish, and again from time to time . . . to revoke, renew and alter such rules and regulations as to them may appear necessary or expedient for the prevention of said disease." When we recall the state of Glasgow as described by citizens of her own and of the cities of Great Britain generally so soon to be disclosed by Royal Commissions issued only when Privy Council Orders had dismally failed to "prevent," our wonderment is divided between the mediæval piety of the preamble and the superficial knowledge of the case betrayed by the remedy applied. Both in quality and quantity it miserably fails. Not merely are the rules and regulations

spasmodic and temporary, but their purpose is limited to the "relief" of the sufferers and "the safe and speedy interment of those who die." Magistrates were authorised to levy a special assessment for those purposes. Hence, while for Cholera shelters and "sheds," medical attendance, &c., &c., might be provided out of special rates, for "Fever" there was no resource but public subscription and subventions from the common good until the date of the Nuisance Removal Acts. The same method, but with an extended scope, was recognised in these Acts, which encouraged a meagre administration and expenditure during the absence of epidemics and clothed the Privy Council with power by special Order to require local authorities to provide hospitals, deal with overcrowding, purge themselves of nuisances, make domiciliary inspections, and otherwise improvise in the midst of an epidemic what ought to be the work of a sanitary department from year to year.

The most important event of the period under review in relation not merely to public health, but to all the functions of municipal government was the abolition of sectional administration in the community of Glasgow. This was accomplished by the Police and Extension Act of 1846, which brought the Burghs of Calton, Anderston, and Gorbals under one jurisdiction with Glasgow. Hitherto, administration had been parochial rather than municipal in spirit and scope. Divisional administration of what ought to be civic business always is. The sense of corporate life developed slowly in the new municipality; how slowly in respect of public health we shall see further on. Every successive "Fever Committee" and "Board of Health" touched the consciences and actuated the brains of some of the citizen members and gave them glimpses of a larger policy, which remained after the occasion had passed by. The leading medical men, among whom Graham, Miller, Cowan, Watt, and Perry deserve honourable mention, drew from the bitter experience of their time administrative lessons which it took the municipality long years to learn, but which even now we can scarcely be said to have improved upon in practice. By refined methods physiologists have been able to measure the intervals which elapse between the stages of perception and volition in the brain and action at the circumference. This history gives us many opportunities of measuring in like manner the inertia of the civic mind by noting the length of time which intervenes between the clear formulation of a policy and its adoption. In 1842, there was published a "Report on the legal provisions available in Glasgow for the removal of Nuisances," drawn up at the request of the Poor Law Commissioners by Mr. Chas. R. Baird, an eminent local lawyer. He had acted as secretary of the

Glasgow Relief Fund in 1837. He had been a member of the Board of Health. He was satisfied, and he believed the majority of his fellow-citizens were satisfied, that, if not for all municipal purposes, for *sanitary* purposes at any rate, Glasgow and its suburbs ought to be under one jurisdiction. He outlines the constitution of a "Sanitary Commission or Board of Health," with executive medical and inspecting staff and power of assessment, to be responsible for the care of the public health throughout this area. Further, he details the purposes which such a Board ought to have legal powers to accomplish. Here was the idea of differentiating sanitary from other municipal functions, and even now one could scarcely desire a more satisfactory synopsis of the scope of the duty of such a special executive. It was twenty years before the idea was carried out in Glasgow, and the legal powers were only sought and obtained from time to time over a longer period.

The Scotch Registration Act took effect in 1855, so that 1855 to 1864 covers the first decade of unquestionable statistics. Glasgow entered upon this period under the impulse to practical sanitation of her third Cholera Epidemic, 1853-4. The first result was the passing of the Corporation Water Works Act in 1855, which authorised new works, and took over the undertakings of the two private companies which had hitherto purveyed water to the community. One of these derived its water from the Clyde. This source was abandoned in October, 1859, when water from Loch Katrine was substituted; one of the most important events in the sanitary history of Glasgow.

In 1857 a "Committee on Nuisances" was appointed, and for the first time Public Health was differentiated as a special function of municipal government. This was done under the Nuisance Removal (Scotland) Act. In 1859 the Chairman (Mr. John Ure¹) submitted a scheme for the improvement of the sanitary condition of the city by creating a special department under a medical officer with an adequate staff of inspectors for the discovery of nuisances and the oversight of disease, the whole to be under the Committee. The Town Council resolved to send Mr. Ure and another Councillor (Mr. Moir) with the Chief Constable and Master of Works (Messrs. Smart and Carrick) as a deputation through the chief towns of the United Kingdom to get information as to local organization and powers. They visited London, Leicester, Birmingham, Manchester, Liverpool, Edinburgh, Dundee, Aberdeen, Dublin, and Belfast. They reported in October. They found that while the sanitary condition of Glasgow might not be excelled in

¹ Afterwards Lord Provost (1880-3) and LL.D. (Hon. Causa), Glasgow University, 1896.

Scotland or Ireland, it was greatly surpassed in England, a result which, allowing for "the more cleanly habits of the English working-classes" and the different style of building, they thought was "undoubtedly also attributable to the extensive powers possessed by the local authorities, the thorough organisation of their sanitary departments, and the enforcement of their sanitary regulations." They found great defects in the local powers. They recommended that these should be extended and defined, and submitted their suggestions in detail. These were carefully considered by a special Committee; and ultimately Mr. Ure's scheme for the organization of a Sanitary Department was adopted. The notes made by the deputation of the powers desired for regulating new buildings, for dealing with nuisances, with overcrowding, with cellar-dwellings, with conveniences, water-supply, &c., &c., for cleansing, for erecting baths and wash-houses, &c., were put into the hands of the

		1855-1864.			
		Mean Population, 387,515.			
SANITATION.				HEALTH.	
				DEATHS.	
				Typhus.	Small-pox.
1855.	<i>Corporation Water Works Act.</i>	1855,	- -	460	203
1856.	AMENDED NUISANCE REMOVAL (SCOTLAND) ACT.	1856,	- -	439	127
1857.	"Committee on Nuisances" (March).	1857,	- -	549	399
		1858,	- -	504	113
1859.	Loch Katrine Water turned on (October).	1859,	- -	381	201
"	<i>Parks and Galleries Act.</i>	1860,	- -	408	347
		1861,	- -	475	131
		1862,	- -	533	27
1862.	<i>Eighth Police Act.</i>				
"	"Sanitary Committee" (November).				
1863.	First Medical Officer of Health (January).	1863,	- -	671	349
"	Suppression of overcrowding by ticketing Houses begun.				
1864.	First Municipal Disinfection and Washing-house (September).	1864,	- -	1138	300
"	SCOTCH VACCINATION ACT came into force (1st Jan.).				
"	First "Sanitary Office" opened (December).				
<i>Ten Years, 1855-64.</i>					
				Birth-rate,	- - - - 41
				Death-rate,	- - - - 30
				Highest Death-rate (1864),	- - - - 32.5
				Lowest " (1861),	- - - - 27.5
				Death-rate under 1 per 1000 born,	- - - - 171
				Death-rate, Zymotic Diseases,	- - - - 7.8

Committee in charge of the New Police Bill, and thus formed the draft of the clauses dealing with these and the like matters in the Glasgow Police Act of 1862. Apart from the temporizing method of dealing with infectious diseases, the great defect of this Act was looseness as to the executive officers, their appointment, and the allocation of their functions. The appointment of "one or more medical officers" was obligatory, but that of "one or more inspectors of nuisances" was permissive, while most elastic methods of manipulating functions by distribution over various officials having primary duties of another kind were left at discretion. The duties of nuisance inspector and of common lodging-house inspector might be discharged by the Chief Constable or any of his superintendents or lieutenants, or by the Master of Works, who might also be Inspector of Cleansing and of Lighting. There being no provision for permanent hospitals, the removal of infectious disease from Common Lodging-houses is managed by a compulsitor on inspectors of poor. Notwithstanding these criticisms from the standpoint of thirty years of evolution, this Act in its day marked a great stride in advance of local sanitary legislation.

Immediately on the passing of the 1862 Act, a "Sanitary Committee" was nominated (Chairman, Mr. Ure). In January, 1863, the first Medical Officer of Health was appointed (Dr. W. T. Gairdner), with the five District Surgeons of Police as his assistants (Drs. MacGill, Dunlop, Renfrew, Young, and Johnston). In March a "special non-medical inspector" (Mr. George MacKay, now Chief Sanitary Inspector to the County of Perth) represented in his solitary person the "sanitary staff." He had a desk in the room in the Central Police Buildings used by Dr. MacGill in his capacity as Surgeon to the Police Force—a place measuring 15 feet by 10, which, if a one-room house, would now-a-days be ticketed for four inmates! This was the FIRST SANITARY OFFICE. All communications regarding infectious disease were requested to be addressed—"Inspector of Epidemic Disease, Central Police Office, 9 South Albion Street."

The Medical Officer and his pigmy staff found themselves immersed in a rapidly rising flood of Typhus. Since 1847 there had been no epidemic which, judged by the standard of those days, would be designated "great." Yet the disease was never for a day idle. In 1859 it touched the lowest point of prevalence; it carried off only 381 people. But its tribute was advanced steadily year by year until in 1864 it rose to 1138, and in 1865 to 1177. As usual nothing had been done to prepare for the evil day, still less to avert it. The fever-flood ebbed and flowed, its movements registered by the capacity

of the Infirmary fever-house, and remarked upon with gratification when the permanent wards were sufficient; with anxiety when they were full. Dr. Gairdner was in the position of a Commander-in-Chief newly appointed; an active enemy swarming over the land, holding every strategical point, well-found and well-equipped, while he possessed nothing but his commission. He had to recruit and drill and equip his army, to subsidize mercenaries, to bear a brave front, and make the most of his meagre resources. In January, 1864, three "non-medical officers, selected from the Police Force for special sanitary duty," were added to the staff, and, shortly after, two shops (59-61 College Street) were fitted up as a "Sanitary Office" at a rent of £25. In September, the first Municipal Disinfecting and Washing-house was established (66 High Street). The ground rent was £5, and the cost of erection and fittings, £244! A staff for fumigating and lime-washing infected houses was organized and placed, with the washing-house, under the Inspector of Cleansing. As the year advanced into winter the usual difficulty of hospital accommodation arose. Conferences were held between the Managers of the Royal Infirmary, the Parochial Boards, and the Police Board with their Medical Officer.¹ The Board resolved to provide temporary accommodation under the 1862 Act. Many offers were made for adaptable existing buildings, and at last a willing proprietor of a disused mill in Anderston was discovered. But the moment the proposal became public it excited the neighbourhood into an opposition which was frantic in its threats and impossible to withstand. There was nothing for it but to build, and a site was purchased in the neighbourhood of St. Rollox where, amid deep snow, a beginning was made, and a pavilion hospital of wood on brick foundations was erected, furnished, and opened with 136 beds on 25th April, 1865—the first Municipal Fever Hospital.

Glasgow had now the rudiments of a Sanitary Department; nothing more. What was wanted, and what unhappily was not possessed at first, was a proper conception of the nature of the functions of such a department. As already stated, a totally erroneous and mischievous suggestion was kept before local authorities by the Nuisance Removal Acts. The chronic nuisance was allowed to fester; the solitary case of infectious disease to propagate its kind unmolested until the supreme moment of epidemic prevalence had arrived. Forthwith issued

¹In Scotland as in England the first Sanitary Acts aimed at the removal of conditions obviously associated with disease, and left the provision for the treatment of the infectious diseases a question of Poor Law relief, just as many Parish Councils are now providing Sanatoria for the consumptive poor, not as a question of public health, but as one of poor relief (Ed.).

the "Order in Council," and the local authority was clothed with extraordinary powers and quickened to spasmodic energy. House-to-house visitation was begun, overcrowding was put down, the scavenger sallied forth with his broom, the line-washer with his brush, temporary hospitals were run up, and medicines were dispensed. Not unnaturally, Glasgow in the 1862 Act adopted this principle in a modified form, the authorities assuming to themselves the right to proclaim

1865-1874.

• Mean Population, 468,263.

SANITATION.	HEALTH.		
	DEATHS.		
	Typhus.	Small-pox.	
1865. First Municipal Fever Hospital.	1865, -	1177	26
" <i>Market and Slaughter-houses Act.</i>			
1866. <i>Ninth Police Act.</i>	1866, -	596	104
" <i>City Improvements Act.</i>			
" CATTLE SHEDS IN BURGH (SCOTLAND) ACT.			Fourth and last Cholera Epidemic—only 68 deaths.
1867. SCOTCH PUBLIC HEALTH ACT.	1867, -	497	32
1868. Cleansing assumed by City as a Special Department under a Committee.	1868, -	367	3
	1869, -	970	2
1870. "Committee on Health."	1870, -	544	25
" First Sanitary Inspector.			Epidemic of Relapsing Fever.
" Sanitary Department Organized.			
" Estate of Belvidere acquired for Hospital purposes (November).			
" 14 Intra-mural Burial-grounds closed.			
1870-77. Improvement Trust Demolitions and Reconstructions.			
1871. New Washing and Disinfecting House at Belvidere.	1871, -	284	184
" <i>Improvement Act Amendment Act.</i>			
1872. First Reception House opened (June).	1872, -	182	149
" SCOTCH EDUCATION ACT.			
1873. Permanent Vaccination Station opened (January).	1873, -	68	228
" <i>Streets Improvement Act.</i>			Milk Epidemic of Enteric.
1874. System of Co-operation with School Board to prevent dissemination of infectious disease through Schools (September).	1874, -	113	214

Four Years, 1871-74.

7 Articles washed, &c., per case of infectious disease registered.
10 "Nuisances" removed per annum per 100 houses inhabited.

Ten Years, 1865-74.

Birth-rate, - - - -	40.5
Death-rate, - - - -	30.5
Highest Death-rate (1869), -	33.7
Lowest Death-rate (1867), -	28.2
Death-rate under 1 year per 1000 born, - - - -	167
Death-rate, Zymotic Diseases	7.4

"districts, streets, or courts," upon the report of their own medical officer, "that epidemic, endemic, or contagious disease prevails or exists and threatens to prevail." Hence everything the new department did, its own constitution and executive, its functions, its hospital and washing-house, bore the mark of temporary emergency. All these extraordinary powers were exercised through the Magistrates' Committee, not through the Sanitary Committee. The work of a sanitary department must be uniform and continuous, not spasmodic and cataclysmal. Fortunately the 1862 Act was operative for only five years, the experiences of which were sufficient to teach the true method. In the 1866 Act the authorities bound themselves to erect and maintain hospitals and washing-houses, and to appoint a chief sanitary inspector and subordinate sanitary staff. For the power to compel inspectors of poor to remove fever cases from Common Lodging-houses, they substituted compulsory removal to their own hospital. Between the local Act and the general Public Health (Scotland) Act, passed next year, Glasgow found itself in a position to develop a permanent sanitary department and commence the daily routine of the sanitary function, undisturbed by a perpetually impending dissolution. The most difficult task of the new department was the recovery of its work from the Police, the Master of Works, and the Inspector of Cleansing.

In 1870 the first Sanitary Inspector was appointed (Mr. Macleod). The staff at 69 College Street had, since 1864, been increased to nine (1 Indoor, 2 Nuisance, and 6 Epidemic and Common Lodging-house Inspectors), but this was recognised to be inadequate, especially for the discovery and removal of nuisances. The whole system was expanded and remodelled, taking the five Police Districts as the units of administration. The subordinate staff was thus at once raised to 42, exclusive of clerks. There were five Female Sanitary Inspectors among the number, which was then a novelty. New premises were taken (1 Montrose Street¹). The only subsequent changes of importance in the executive, apart from the steady increase in the strength of the rank and file, were the concentration of the medical function in one Medical Officer of Health, devoting his whole time to the work (November, 1872), and the appoint-

¹The development of the Sanitary Department is well shown by the advance in the rent of the premises with each successive addition to the accommodation :

1864, 59-61 College Street, £25.
1870, 1 Montrose Street, £180.
1874, 1 Montrose Street and 120 Ingram Street, £250.
1886, 1 Montrose Street and 120-122 Ingram Street, £290.
1890, 1 Montrose Street and 120-122 Ingram Street (whole of two flats) £340, with two sub-offices—at Crosshill, £21, and Hillhead, £25.
Now, 1895, premises are in course of erection which will cost £17,000, exclusive of site.

ment of a junior Medical Officer in 1892. An important administrative improvement was effected by the combination of the "Sanitary Committee" and the "Cleansing Committee" in the "Committee on Health," with two standing Sub-Committees, "Hospitals" and "Cleansing." Under this last the whole cleansing of the City, which had in 1868 been organised under a Cleansing Department, instead of being carried out by contractors, was placed and so brought into close sympathy with the purposes of health, in place of being carried on as a gigantic manure business, to be judged solely by its ledger balance. This was, therefore, a memorable year in the evolution of system in the performance of the health functions of municipal government in Glasgow. It was also noteworthy for the acquisition, under pressure of the necessities of an epidemic of Relapsing Fever of the Belvidere¹ estate, which has since become known over the world as the site of the largest Fever Hospital out of London, and, probably, taking natural beauty along with design and equipment, the finest in the three kingdoms. In 1871 the primitive washing-house in High Street was abandoned for a more commodious and better equipped establishment at Belvidere.

City Improvements Act, 1866.—This period includes another epoch-making event. In the same year, 1866, in which the Police Act of 1862 was revised and re-enacted the City Improvements Act was passed. We have quoted at length contemporary descriptions of the Wynds and Closes of Glasgow from 1818 down to 1849. We have stated that after the Cholera epidemic of 1848 they received some attention from the Dean of Guild Court and Town Council. By demolitions here and there, and by greater attention to paving, scavenging, and the position and structure of conveniences, no doubt some improvement was effected. The meeting of the Social Science Association in Glasgow in 1860 enables us to gauge how much. Papers were read in the section Public Health "On the sanitary condition of the lower localities of the City of Glasgow, &c.," by Dr. MacGill, Police Surgeon, and "On the Measures required for improving the low parts of the City, &c., &c.," by Mr. James Watson (afterwards Lord Provost and Sir James Watson), the descriptive parts of which really reproduce almost the same phraseology as to the condition of the Wynds, Vennels, and Closes, as had for half a century been applied to them with monotonous reiteration. We shall quote three detached sentences from

¹In 1900 an additional Hospital was opened at Ruchill on ground extending to 36½ acres. It contains 440 beds, and cost £300,000, including furnishings. In 1903, 11 acres additional were acquired. Adjacent to the Hospital a Disinfecting and Washing-house was also erected on 1½ acres.

Mr. Watson's paper, premising that the details with which he supports these generalities afford a redundant justification.

"Our City is distinguished for its wealth and commercial enterprise, its public buildings, its extensive manufactories, its numerous charitable, religious, and philanthropic institutions, and is ever foremost in all great and patriotic movements; but it is not to be concealed that there are certain portions of it in a most frightful condition, and which, like so many plague spots, demand investigation and call for legislation and reform. . . . We question if in any city of Europe the vicious are allowed to congregate together in such clusters as in the City of Glasgow, and in no city that we are aware of are such facilities given, by means of the buildings and localities, both for hatching and perpetuating [perpetrating?] vice and crime. . . . It appears to us that the radical and only effectual cure for such evils is to sweep away these old buildings; to form commodious thoroughfares and to erect buildings with proper conveniences and comforts in room of the old."

We have still later testimony in the Reports of the first Medical Officer of Health. Notwithstanding the exigencies of Dr. Gairdner's position, within a few months of his appointment he found time to make "a personal visitation of most of the epidemic localities within the boundaries of the Glasgow Police Act" and to describe in detail, without rhetoric but with unreserved fidelity to fact, what he observed, which seemed to him to explain the prevalence of epidemic fever in Glasgow. The main body of these observations was published in his third Quarterly Report for 1863, before he had been a year in office. Anyone who is familiar with the literature from which we have quoted so extensively will at once recognise in this report the same old facts. It contains nothing new. The reports of the District Surgeons to Dr. Perry as to the state of their districts in relation to the epidemic of 1843 practically deal with the very same places as Dr. Gairdner's reports in 1863. The same wynds, closes, even tenements, appear, only the earlier reports refer to them more frequently by the picturesque local names than by the prosaic numbers of the later. The conditions noted and described are not essentially different. Still this does not bate a jot of the merit or historic importance of Dr. Gairdner's work, which no doubt gave the final impulse which launched that Improvement Act which was in the thoughts of Mr. Watson when he read his paper in 1860. The suggestion of such a scheme was as old as the perception of the conditions it was intended to remedy. It is one which we find in local literature from the very first time when the "Fever," like the Ancient Mariner, "held with his skinny hand" the comfortable citizens of Glasgow and told them the tale of the wynds. In 1818 Dr. Graham wrote—"I believe it would greatly add to the healthiness of the place if some *improvements which I have*

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.