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ON CERTAIN ARRANGEMENTS MADE IN THE  
CITY OF GLASGOW, 1866, WITH A VIEW  
TO THE PREVENTION OF  
EPIDEMIC CHOLERA.

WITH AN APPENDIX.

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I BELIEVE I shall not detain you very long in this, almost *ex tempore*, address or paper (if paper it may be called), because you will very speedily discover that it is not a paper, but only the materials out of which a more or less elaborate paper might have been built had the opportunity occurred.

When conversing with your President, Dr. William Pepper, at Newport, since my arrival and only some days in advance of this Congress, it seemed to be worth while considering whether certain experiences which had occurred to me during the last threatened invasion of cholera in Glasgow during the autumn of 1866 could be presented verbally, or on the basis of brief notes, without details of facts or documents, so as to be a suitable communication for this Congress. Dr. Pepper has ruled that it is to be so; and here I am, accordingly, not to read a paper, but to make a short statement, which, from the very nature of these circumstances, must be as concise and as much detached from documentary details, facts, and statistics as I can possibly make it. And yet I think that even this bare statement of my experiences as the Medical Health Officer of the city of Glasgow in 1866 cannot fail to have a certain interest for you.

America, to us of the old country, is the land of experiments, political, social, religious, educational, and sanitary; yet it does not appear to me that I have ever heard of anything, either on your

vast continent or in my own little island of populous places, precisely on the lines of what I am now about to narrate. The practical issue before my mind is whether out of this experience I can place before you any considerations of importance applying, of course, with variations founded on local differences, to any circumstances arising or likely to arise in the midst of your complex and ever-extending civilization. If I shall have the good fortune of exciting or stimulating one fruitful idea, one speculation which can be carried forward into action in this wide continent, my task will have been accomplished, because the good seed will have fallen into good ground, and will in time bring forth its results. I may add that my own opportunities of initiation in such matters may be said to be over, and I have, therefore, no personal, nor even any official, object to be gained or lost by this paper.

On going from Edinburgh to Glasgow, in 1862, as Professor of Medicine in the University, the position was offered to me—almost, indeed, forced upon me by the authorities—of the medical chief of the Sanitary Administration, then about to be recast at the instance of Mr. John Ure, a most devoted sanitarian, and afterward Lord Provost, or chief magistrate of the city. This position I held for nearly ten years, and then resigned it, being succeeded by my good friend, Dr. J. B. Russell, known, I am certain, by reputation to many of you, as he is to us all over Great Britain, as one of the most diligent, most active-minded, most original, and withal most trustworthy of public medical officers; and if I have still any legitimate pride in having held that office for a few years from its commencement, it is in having laid some of the first foundations for a superstructure which has, under his admirable superintendence, become almost a model of civic sanitary administration. Still the precise conditions of the experiment I have now to relate have not chanced to recur during the period of Dr. Russell's tenure of office, nor are the administrative means and machinery at disposal now precisely what they were in 1866. So far as my information extends, therefore, the experience I have now to record is, as regards its method and its mechanism in some respects, absolutely unique.

Typhus fever, our ever-present, ever-watchful plague in Glasgow, and in all our cities inhabited largely by dense Irish populations,

was, at the time I speak of, so much of a home pestilence that it had ceased to be regarded as anything extraordinary, even when represented by hundreds, not to say thousands, of cases. It was held, in fact, by the legal advisers of the local authority that exceptional measures could not legally be taken against typhus fever until the hundreds had *become* thousands; that, in fact, it was not legally within our competency to "shut the stable door" effectually until, as the proverb says, "the steed was stolen." This was the main defect of the local Sanitary Act under which the administration had to be conducted in 1866; and it is necessary thus to emphasize it, because it may just be possible that in some of your various States and Territories a similar defect may still hamper the work of your medical officers; and at all events it is the contrast to this state of matters, as arising from the widespread apprehension of cholera and the comparative ease of getting power to do things more thoroughly, that will give the key-note, as it were, to the present address. I desire, however, to add, as the necessary sequel of what has now been set forth, that the defect alluded to has long ceased to exist in Glasgow; indeed, it only required the experience of a very few years to show that it was a bad and utterly false economy to build hospitals and institute sanitary works of disinfection, etc., upon a temporary plan, and as if intended only for an epidemic emergency, specially declared to be such.

In August, 1865, however, it became my duty to report to the Lord Provost and magistrates as regards a circular letter addressed to the heads of our municipalities generally, by the Secretary of the Privy Council, "referring to the recent appearance of cholera in Egypt and the occurrence of some cases in Turkey and in Italy;" the object of the communication being, as stated, "that the authorities of your locality may be enabled to take such steps as they think proper for the preservation of the health of the inhabitants of their neighborhood." I will not detail here the proceedings which more immediately followed from this warning-note of the Privy Council; the only point on which I wish now to insist is that it placed the probable advent of that disease so clearly and definitely before the authorities and the citizens generally as to constitute an exceptional case of apprehended epidemic disease, and thus to set in motion at once the provisions under the local Act of

Parliament for dealing with such exceptional cases.<sup>1</sup> While, therefore, it absolutely required a new and a much stronger Act of Parliament, or rather more than one such Act, to clear the way, even for dealing effectually with what was regarded as a home-bred pestilence, in the case of typhus fever, the medical officer and staff found themselves at once invested, as regards cholera, with almost autocratic powers, limited only by the consent of the magistrates, which, as it happened, was in this instance easily obtained, and in thorough accord at the time with public opinion.

In the latter part of 1865, as the result of the powers thus obtained, numerous measures of general sanitary improvement were urged on, to which it is not necessary now to allude, because in any case they would have had to be undertaken, sooner or later, though possibly not considered as urgent. One of these was a detailed examination and report on all the public wells to be discovered within the bounds of the local authority; these being by no means numerous, as they had mostly been superseded long before by the excellent supplies from Loch Katrine and elsewhere, furnishing to the inhabitants a mean quantity of fifty gallons per day for each individual of the population, and this of the purest water, perhaps, ever distributed to any municipality in the world. The Loch Katrine water-supply was introduced in 1859; my concern, therefore, was not with the supply, but with its distribution. In order to obtain the full advantages of a thoroughly good water, and to remove the temptations to use for drinking any less perfect sources of supply, it was necessary in some cases to suppress the latter altogether, replacing them by the Loch Katrine water; or, in other cases where no evil appeared likely to result, leaving one, possibly less pure, supply open for washing or bathing, while the Loch Katrine water was abundantly distributed for drinking purposes. But on these details, though interesting enough in themselves, I do not intend to dwell at present. My own belief, from first to last, was that the Loch Katrine water would prove, at least in a com-

<sup>1</sup> The precise legal import of the remark above, under the provisions of the local Act then in force, was that by a certain form of declaration, published in the newspapers by the medical officer, sections of the Act were brought into operation, at the instance of the Lord Provost and magistrates directly, without undergoing consideration or criticism by the board of police, which, at the time referred to, was the sanitary local authority for all ordinary occasions.

parative sense, the salvation of Glasgow from the worst ravages of Asiatic cholera; and this anticipation was fully justified by the result.

But we had to do with a vast population, largely composed of the operative classes, and in by far too large a proportion composed of those classes with whom the crowding of a whole household, and perhaps a lodger or two, into one apartment, represents the average condition of domestic comfort. Moreover, this large mass of wretchedly housed persons was also densely packed upon a ground-space smaller in reference to the numbers of population than in any city of Great Britain and Ireland, with the single exception of Liverpool. In some parts of Glasgow it was the case at this time that nearly a thousand persons lived upon a superficial acre of ground. The habits of these people were, of course, often extremely filthy, and even the possibility of cleanliness was too often denied to them by the faults of construction in their enormous tenement-houses, without any proper lavatory arrangements, or even distribution of water, and very often without anything like suitable means of getting rid of the discharges. All these faults, moreover, were, as it were, ingrained; not only expressed in the habits of the existing generation, but inherited from their predecessors, in so much that I had had occasion to point out that not only epidemic disease, commonly so-called, but also tubercular diseases, pneumonia, bronchitis and respiratory diseases generally, and, above all, an enormous death-rate of very young children, marked these densely occupied portions of the city to a degree many times greater than was the case in the more privileged and happily placed portions of the community. Such measures as had been considered possible up to this date, in the face of a rising epidemic of typhus fever (nearly at its height in 1865-66), were chiefly police regulations as regards gross overcrowding, hospitals for the sick, arrangements for ambulances, etc., disinfection of rooms and of clothing, and, in some cases, the compulsory clearance of whole tenements so as to permit of the removal temporarily both of the infected and non-infected inmates, and the more complete use of the means of disinfection.

All this, although it cost us all much time and forethought, and the city considerable annual expenditure, was done; and yet I had



the habit of expressing myself freely to the effect that we were only "scratching the surface"—that is to say, that to meet fully and adequately the abiding causes of typhus fever in our midst, it would be necessary to obtain greatly increased powers, and use them largely for the destruction, and perhaps reconstruction, of certain localities. These powers were finally obtained in a local Act of Parliament, called the "Glasgow City Improvement Act," for the promotion of which we were chiefly indebted to Mr. John Blackie, then Lord Provost, and the late Mr. John Carrick, city architect, one of the most admirable of officials, whose sure instinct, amounting to something like genius, but founded on practical experience and guided at once by wisdom as to the end to be achieved and knowledge of men as to the means to be used, was of inestimable service. All this is now a matter of history, and I do not mean to detain you upon it, my object being merely to indicate to you the state of the population on which the cholera was expected to fall in 1866, before any of these greater reforms to which I have alluded had been even initiated, much less carried out, as they have been since, under Dr. Russell's tenure of office, with excellent results which he has officially demonstrated.<sup>1</sup>

Now, gentlemen, with all the confidence I then had, and, as it now appears, justly entertained, of the probable effect of a pure water-supply as a protection against the worst epidemic excesses of Asiatic cholera, it was impossible to observe from day to day and from week to week, this terrible disease drawing nearer to us in Europe, and finally in England, without a vast and indefinite sense of responsibility and of possible disaster. It had been amply shown in 1848, and still more clearly in 1854, that places which had obtained a purer water-supply suffered notably less, and, conversely, that other places in which the water-supply had deteriorated, suffered more in the later than in the earlier epidemics. But with all the hopes which could be founded on this recorded experience, it was impossible not to fear that a population such as ours then was, already decimated by epidemic disease, and living too often in the most grossly insanitary circumstances, having, moreover, at all times a very much higher death-rate overhead than any other city

<sup>1</sup> "Results of the City Improvement Act," by J. B. Russell, M.D. (In the Transactions of the Glasgow Philosophical Society.)

of the United Kingdom except Liverpool, might still be heavily hit, as it were, in accidental localities by the epidemic that was looked on as now bound to come.

In all the past epidemics of cholera, Glasgow had suffered severely, in some of them most severely, and not least in the epidemic of 1854, the one immediately preceding. It was, therefore, with no ordinary solicitude that we proceeded in the early months of 1866 to make such arrangements as might be found most suitable for protecting our only too vulnerable masses of dense population from a scourge in regard to which imagination might possibly, indeed, outrun the reality, but for every avoidable case of which, actually occurring, we could not fail to hold ourselves in a measure responsible. I am happy to say that the Lord Provost and magistrates, as well as the citizens generally, were all of one mind in this matter. There was no mere unmanly sense of panic, but all arrangements in advance were left to the authorities, and the medical officer had therefore, speaking practically, a "free hand."

The first thing that occupied us, apart from those early precautionary measures to which I have already referred, was the question of hospitals for the sick. With a view to typhus fever and other epidemics, a considerable amount of hospital accommodation had been already provided by the local authority, in addition to the Royal Infirmary and the hospitals of the several parishes, which were administered by separate boards of managers, and supported either by parochial assessments, or by the voluntary liberality of the citizens and others.

It was determined, under the circumstances, to request the several parishes to undertake the hospital accommodation for fever and all other epidemics except cholera, *pro tempore*, so that the hospital of the local authority might be cleared, and held open for cholera cases exclusively, so long as it might be required. Dr. Russell, who had even at this time won the confidence of all as the medical superintendent of the epidemic hospitals of the local authority, was appointed to deal with the details of this department, to engage a staff of nurses, etc., and to obtain all the furnishings and equipments for such hospitals as might be under the control of the local authority temporarily during the cholera epidemic. Ultimately, one other temporary hospital was built and fully furnished in ad-

vance, in a very central situation, and provision was made as regards sites, etc., for four others; but of these only the hospital in Glasgow Green was actually brought into use, and this only for a few weeks during the incidence of the epidemic.<sup>1</sup>

I may mention, in passing, that the enrolment of suitable nurses proved a work of the utmost difficulty, involving almost heart-breaking disappointments in detail, from the great number of applications from persons morally or otherwise wholly unsuitable, and the small number available who could in any way be relied upon. Had the epidemic proved much more severe, this would have been one of our greatest difficulties, but it was surmounted by the patience and foresight of Dr. Russell.

The next point was the arrangement, in advance, of a medical staff. In this, happily, no serious difficulty was encountered, either on the side of the authorities or of the medical men in practice. In a very short time the medical officer was enabled to submit arrangements as to remuneration, etc., which gave general satisfaction, and about eighty of the fully qualified medical practitioners of the city, many of them having had previous experience, and all of unquestionable status, were enrolled as willing to undertake the treatment of cases of choleraic disease at the instance of medical or other visitors, or of the local authority. As it was anticipated, however, that in the event of serious panic, or of even trivial diarrhœal disease occurring in a locality, there might be an undue amount of disturbance, or even unnecessary calls upon this medical staff, especially during the night, it was determined to interpose a staff of house-to-house visitors, not necessarily qualified medical practitioners (though having sufficient medical information to deal with ordinary or false alarms), between the strictly medical staff in the infected districts and the general population. The precedent here followed was that of previous epidemics in Great Britain, in which the principle of house-to-house visitation had been always found to

<sup>1</sup> It was placed under the medical care of Dr. James Adams, whose great experience in former epidemics was thus turned to account, Dr. Russell himself taking medical charge of the hospital in Parliamentary Road, already alluded to. The nursing staff was arranged so as to be common to both hospitals (as it would have been also to the others had they been required), and to be detailed by Dr. Russell for service where most urgently wanted. The kitchen arrangements and the disinfecting staff, as also the supply of beds, bedding, etc., was also managed for the Parliamentary Road.

be of great service in ascertaining and dealing with the premonitions of the choleraic attack.

Closely associated with these arrangements was the opening of dispensaries, or depots for medicines and disinfectants, to be open day and night during the whole period of an apprehended epidemic, in all quarters of the city. Here, too, as in the case of the medical staff, no serious difficulty occurred. The machinery was, in fact, already provided, partly by the shops of the chemists and druggists, and partly by the surgeries of the medical practitioners. It was necessary only to secure a constant day-and-night service in a certain number of these, selected with a view to convenient access in all parts of the town, and to furnish them with all the remedies and disinfectant substances recommended by the authorities, as also with a uniform series of printed labels, boxes, and bottles for giving out daily supplies of disinfectants for use, on application, so as to save at once time and expense, and to secure as far as possible uniform quality in the leading articles dispensed. In addition, these depots were to be used as houses of call, where information might be given of cases either of real or of apprehended choleraic or diarrhoeal disease; where also medical assistance could be at once secured, if necessary, or the services of the official disinfectors could be called into requisition, or house-to-house visitation could be organized, so far as immediately required in case of first alarms. The name and address of several of these depots was to be placed at the disposal of each household, in a manner presently to be described.

I need hardly add to the above, that the whole of the ordinary cleansing and disinfecting staff, as existing permanently in connection with the sanitary office and cleansing department, required to be largely reinforced, even long in advance of the first indication of a local epidemic; for the instructions of the Privy Council, already alluded to, in August, 1865, had brought the subject of much more thorough cleansing before the authorities all over the kingdom, and reports were daily transmitted, both to the cleansing department and to the office of the master of works, involving a great amount of additional work, which went on increasing in proportion as the attention of the citizens was drawn to the subject, on the one hand by the gradual approach of the epidemic and on

the other by the invitations of the medical officer to make known any obvious cases of defect or neglect. The provision of disinfectants on a large scale and on the most approved principles then ascertained, was entrusted to the cleansing department, which also undertook to furnish the depots above named.

But when all this, and more, had been done or arranged for, the problem was still ever pressing on my mind, How to get the practical knowledge of what had been and was being done for their protection brought home effectually to the minds of the people chiefly concerned. This was a very serious matter, perhaps the most serious matter of all. There were at this time nearly 100,000 separate households or about 500,000 inhabitants in what was officially reckoned as "Glasgow," being under one municipal government as such. Many of these households, as we had had ample and sad experience, were living in a state of almost brutish ignorance and neglect. Epidemic disease generally had almost no effect on the daily lives of such people—it was taken as a thing of course, and met, if with any emotions at all, with a kind of sullen, blank fatalism and despair. A new and to most of us a terrible epidemic disease might produce the same effect or want of effect; or, on the other hand, it might lead to an unreasoning panic, always the most unprofitable and even disastrous of mental states; because no fruitful action ever arises or can arise out of mere selfish cowardice. The thing to be done, therefore, as it appeared to me at this time, was to get at the heads of these separate households or at least at some of the members of them, by personal and direct communications, so as to press home to their convictions by the best simple arguments that could be devised, what was being done for them and what, on the other hand, they might reasonably be expected to do—indeed in some cases could only do—for themselves. Without this, it seemed not unlikely that the whole arrangements might break down at the very point where interference was required. Suppose, for instance, that an imported case of the genuine Oriental cholera, or of diarrhœa tending in that direction, was brought into one of these households—how were we officials to hear of it? Possibly through the sudden death of the patient and a sudden frenzy of alarm paralyzing all combined and effective action for good. Possibly, on the other hand, not at all,

or only after quite a number of cases of choleraic diarrhoea, not fatal but dangerous and scattering infection everywhere, had succeeded in arousing the slumbering sense of fear. It appeared to me that there was or ought to be a better way than either of these: but I was not quite clear as to what was the better way, especially as time was pressing and the object was rather to anticipate than merely to meet the advent of the disease which had already been heard of in several of our towns, both in England and Scotland.

When in this state of mind, I chanced to encounter a much-respected clergyman of one of our Presbyterian denominations, and I opened my mind to him on the subject. I asked if he could suggest to me how to obtain *at once* some hundreds of willing and intelligent workers, not necessarily with much medical or physiological knowledge, but broad-minded and sympathetic, who would personally visit and carry medical instructions about cholera down into the homes of the poor—it being understood that if cholera or anything like it should actually appear in any district or block of houses, these volunteers would be replaced at once by medical visitors. His answer was unhesitating and it was in the form of a question; “Why not apply to the churches? they will do it and give you all the volunteers you want, only for the love of God.” The reply was exactly on the line of my own thought, but I ventured to remark that I, as a public officer, could make no distinctions among the churches. “Ask them *all*,” he replied; “on that point, at least, they ought all to combine and I believe they will do it.”

Acting on this hint, I wrote a circular letter in the character of medical officer of the city, pointing out what had been done and what had still yet to be done, and I called upon all the churches indifferently, in which worship took place on Sundays in Glasgow (over three hundred in number), to assist in this work, by sending a deputation of their office-bearers to meet me in the City Hall at a certain date. The idea spread and was rapidly taken up—at the meeting in question nearly all the churches were represented and undertook to furnish me, on an average, with (say) ten picked men each. I said that as medical officer I would be responsible for the disposal of these hastily gathered forces, it being understood that

while suggestions would be received very willingly as to one or other district being taken up as matter of convenience by particular churches, I must in the end be able to dispose of the volunteers absolutely without fear, favor or partiality, and that they must needs all work on one and the same plan. For this purpose I had the whole city divided; first, into seven or eight considerable districts, and these again into minor subdivisions, no account being taken of church districts in doing so. In the ultimate subdivisions the enumerator's divisions at the last census were brought into operation; and finally, a series of maps were carefully prepared on the largest Ordnance scale of twenty-five inches to the mile, by which (within certain limits of difference) a certain proportion of families living in a particular close, or wynd, or row, or street could be assigned to one visitor, who from the section of the map sent to him could not fail to know exactly the limits assigned to him in his visits. While this work was in progress, the churches had their own meetings in many of the larger districts and were maturing their own plans. The enthusiasm in the work was very considerable and increased with its progress.

The first quite definite proposals came from the western district, at the instance of two of the most respected clergymen in Glasgow, Dr. Marshall Lang, then of Anderston Established Church, and the late Dr. Somerville (well-known since then as a foreign traveller and missionary on behalf of his church), of the Free Presbyterian Church in Anderston. These two reverend gentlemen had no difficulty of course in carrying with them the whole of the Presbyterians and other allied denominations, but I thought it of importance to remark at the outset, that from my point of view as medical officer, we must also have the Roman Catholics and the Unitarians, and indeed all others willing to contribute; and that there must be no distinctions. This being fully assented to, the western district was at once set to work and in a few weeks the map (above alluded to) of each coöperator's district was in his hands, with a paper of instructions which he was understood to make the basis of his work, and as such, to carry down to his district (Appendix No. I.). A little later the enthusiasm spread and the other districts came in; it being understood from the first that if the poorer congregations, from having fewer persons of sufficient

independence and leisure, were in danger of being under-manned as regards their quota, the more wealthy congregations should be asked to furnish more visitors in proportion. In the end, 3000 to 4000 intelligent and active visitors had their instructions and were actively at work in their various sections, informing the people and reporting to us at the sanitary office, or to the cleansing, or the master of works' department.

The effect of this great movement, both immediate and ultimate, was very remarkable. In the first place, it was universally felt that the apprehended epidemic of cholera had been provided against in a way that entirely removed local and increasing panic. The feeling of a common interest and of united and sympathetic action in view of a common danger pervaded all classes of the community, and led to a reliance upon the means provided which could not, I think, have been attained in any other conceivable way. The public were so pleased with the hospital accommodation provided by the authorities, that on their being admitted to view the new temporary hospital, all the objections which had been urged against it, as occupying a portion of "the people's park," were at once tranquillized. The feelings of satisfaction with the arrangements adopted for the limitation of the area of disease, and the medical and other regulations set forth, both as regards prevention and treatment, made it clear to the most unreasoning and the most ignorant that their safety lay in the early and an unreserved communication with the authorities. There was no panic, and no disposition either to conceal or to exaggerate individual cases of diarrhoeal disease. Everything that was done was done quietly, without undue notoriety and at the same time without omitting any just precaution. And the ultimate result was that Glasgow, with its teeming and badly situated population of the industrial and often pauperized classes, was able, after the epidemic had passed, to show a death-rate from cholera very much less than that of any large town in Scotland, except Paisley, which had from the first adopted somewhat similar precautions. About sixty-six cases of true cholera and a few hundred of choleraic diarrhoea were all that were contributed by a great city of half a million of inhabitants to the sum of this epidemic in Scotland. And the whole of the visitors from the churches concurred in affirming that their work during



the period of apprehension, as above described, had been fraught with inestimable advantages to themselves as well as to the poorer population, by bringing them into actual contact with the condition of existence prevailing among thousands of their neighbors.

One point of detail still demands notice, as bearing on the first cases reported. Several of these were imported cases, and therefore isolated, but, of course, carefully watched for in the first instance. It appeared probable that the various newspapers, seeking on all hands to obtain the first intelligence of the epidemic as advancing from Liverpool and other cities having communications with Glasgow, might possibly exaggerate or distort in reporting cases of which imperfect information alone could be obtained. To obviate this source of mischief, a book was opened at the sanitary office, in which the most strict directions were given that everything bearing on the possible advent of cholera was to be carefully entered and reported from day to day, even when the information obtained was open to doubt, the correction in this case being given after the investigation which immediately followed the report. This book was open to all the newspapers alike, and, in fact, to everyone anxious to be assured of the facts. By this means all merely sensational reporting was held in check, and a true statement of the facts each day was issued to the public. I am sure that a great deal of unnecessary excitement was obviated by this step.

In the course of August and September, 1866, the first cases of a suspicious kind were reported. In the middle of December all traces of an undue amount of diarrhœal disease had ceased. Before the first day of January, 1867, I was able to report the apprehension of epidemic cholera as having been entirely removed; and on New Year's day (always a popular holiday in Scotland) it became the duty of the medical officer to suggest (of course without any pretension to dictation) that the day might be fitly commemorated by a public service, or services, of thanksgiving to Almighty God, on the ground of deliverance from the threatened plague. The suggestion was largely adopted, many of the churches being opened on the occasion with a large attendance of devout worshippers, many or most of whom had intelligently followed the whole course of the proceedings here narrated.

On Good Friday of the same year (1867) a public meeting was

held in the City Hall of Glasgow, attended by a large number of the clergy and laity of various denominations, in which resolutions were passed commending the scheme of visitation by the churches during cholera to the notice of the public, as being fraught with almost indefinite possibilities of good, and as deserving of a more permanent existence. Several of the most eminent speakers—Drs. Norman Macleod, Marshall Lang, and others—enlarged upon the truly Christian character of the movement, expressing the wish that such a broad and practical Christianity as was evinced in this effort to remove the causes of disease might well be looked upon as alike a benefit to the population at large and to the churches themselves. The visitors employed on this occasion were almost unanimously of the opinion that both from the point of view of religion and of beneficence, it was highly desirable that such a movement of real Christian charity should be continued and perpetuated, if possible. The medical officer remarked on this occasion that an *auto da fé* (an act of faith) had at one time a very terrible and sinister meaning in the Spanish language, in the days of the Inquisition. Was it not within the compass of a more genuine and real Christianity, denuded of doctrinal distinctions, but tending ever to practical works of mercy and kindness, so to avail itself of movements of sanitary progress as to claim a share in them on the part of the church universal, undisturbed by sectarianisms, and in the name of the common Lord? Unfortunately, it was not possible so to apply in a permanent fashion the lessons of the cholera epidemic of 1866; but they remain, nevertheless, as a notable evidence of what may be done under the influence of like circumstances in future; and with this view I have now placed a brief sketch of the facts before this Congress.<sup>1</sup>

<sup>1</sup> A notable example of what Mr. Matthew Arnold might have called the "Philistine" point of view of these transactions was contained in the remark of a very eminent citizen of Glasgow at the time, viz., that after all the fuss made about the cholera, and all the expense incurred in its prevention, "*the cholera did not come!*"

## APPENDIX.

ABSTRACT OF INSTRUCTIONS ISSUED FROM THE SANITARY DEPARTMENT,  
GLASGOW, 1866, IN RESPECT TO ASIATIC CHOLERA.I. "*Instructions for District Visitors in Time of Cholera or when Cholera is Threatened.*"

The object of these instructions was to place District Visitors in communication, on the one hand, with the people, and, on the other hand, with the sanitary authorities, with a view to the observation and reporting of removable defects; the procuring of external cleansing; the removal of night soil; the use of personal influence as to cleansing and ventilation; the opening of windows, or at least their construction so as to open at the top, in accordance with the law; the use of whitewash where necessary, the materials being furnished by the authorities on requisition of the Visitor; the use of personal urgency upon the inhabitants as to cleanliness of person, of clothing, and of bedding; and, further, all possible instructions concerning the use of plain, wholesome food, and of clean, fresh water and milk, with cautions against the undue use of strong drinks. It was further made part of the duty of the District Visitors to inform the inhabitants that "in all cases of diarrhœa, or of serious derangement of the stomach or bowels resembling cholera, persons should be recommended to go to bed, to keep quiet and warm, and to send instantly for medical advice."

II. "*Instructions for Medical House-to-house Visitors in Districts in which Cholera Prevails or Threatens to Prevail.*"

This set of instructions was much in accordance with the preceding, but was specialized by the medical character of the Visitor, and had general application to what is called "house-to-house visitation," so well understood and practised in former epidemics.

III. "*Instructions on Disinfection, for Medical Officers, District Visitors, and others, in Case of Cholera, Choleraic Diarrhœa, and other Diseases of Like Character.*"

This was a very detailed paper, involving all the principles of the germ-theory and of disinfection, as then understood, in reference to cholera—*e. g.*, indicating that "It has been ascertained by scientific investigation that cholera, although much less infectious or contagious (in the ordinary sense of the words) than such diseases as fever or smallpox, has the special property of communicating to the discharges from the bodies of the sick a dangerous quality; that these discharges may endanger life by soiling bed-linen, or vessels, or the floor, or the hands of attendants, or privies and water-closets, or collections of ordure in open courts, sinks, ash-pits, dung-steads, or common sewers, or, finally, by sinking into the ground, or otherwise polluting the drinking water; and that the danger is not diminished,

but rather (as there is reason to believe) increased, by decomposition of the choleraic discharges in connection with masses of ordinary filth. It follows, therefore, that all choleraic discharges, and all things soiled by them, should be disinfected and cleansed immediately; and where this cannot be perfectly done, the *disinfection* should be carried out in detail over the whole sphere of the *infection*—*i. e.*, into courts, sinks, privies, ash-pits, dungsteads, common sewers, and in some cases into the soil and the water, as above described. It is further to be carefully kept in view, that these principles are to be applied not merely in cholera, but in every case which can be detected of diarrhœa or other disease carrying the suspicion or possibility of cholera; inasmuch as no practical security exists, on the great scale, for the freedom from infectious quality (in times when cholera is prevailing) of the discharges in any case of diarrhœal disease; and almost all cases of true cholera are preceded by a diarrhœa, which probably may endanger others nearly as much as the true cholera itself."

The methods of disinfection recommended were the adding to the suspected discharges, immediately, of a measured portion of the common green vitrol or sulphate of iron corresponding to a daily weighed quantity of about two avoirdupois ounces for an adult and one avoirdupois ounce for a child during each day in which the disease lasts, and, for at least several days afterward, until all possible risk is over; and, further, the disinfection of all matters capable of being so treated by the addition of carbolic acid in the proportion of a teaspoonful of ordinary commercial acid for the discharges of one individual for one day. In disinfecting clothing, chloride of zinc was recommended, and, speaking generally, the use of blue litmus paper, as regards all matter so disinfected, in order to secure a distinct acid reaction. Supplies of all these materials were kept constantly available, in a state for immediate use, and were to be had, on personal application, at the depots indicated by the authorities.

IV. "*Instructions for the Inspector of Cleansing, as to Disinfection in Cholera and Diarrhœa.*"

This instruction need scarcely be given in detail. It was founded on the idea that the services of an inspector could be brought into immediate requisition, at any suspected point, both for the advice of the inhabitants and for practical work.

V. "*Instructions for Chemists and Druggists, and for all Persons Charged with the Supply of Disinfectants.*"

The supply was to be gratuitous, in divided quantities, which were carefully labelled and marked, "For one day's supply," and also with directions for use in accordance with the preceding. The depots at which these supplies were furnished were kept open day and night during the time when cholera was apprehended, and were so arranged that, throughout the whole city, a depot was available within a short distance.

VI. "*Plain Directions for the People. (For distribution by District Visitors.)*"

The object of this paper (covering four pages octavo) was "to represent to the people of the district what things are necessary to be done in view of an epidemic of cholera, and, if possible, so done as to prevent the epidemic from visiting Glasgow at all."

The inmate of the house is recommended to welcome the Visitor who delivers the paper, to talk freely with him, and to think carefully over what he says. The instructions given are under the following heads :

1. "Whoever would avoid cholera must, above all things, be clean ; but cleanliness *out and out* is not always an easy matter. Think of these things for a little, viz. : Do you wash often and thoroughly and all over ? Do you wash your children every day, and from head to foot ? Do you keep no dirty clothes on your person or in the house ? Do you allow no dirty dishes, no dirty plates nor spoons, no dirty towels, no dirty brushes, no dirty floors, walls, closets, beds, bed-curtains ? Is the house always tidy and light and pure without and within ? Do you always breathe a clean, pure air, by taking care to open the window very often ? Do you use freely the great blessing of clean and pure water, as you may have it abundantly ? or do you keep it in the house until it is tainted and unclean ? Remember that unless you have clean air and clean water, there is no perfect cleanliness ; and it is your own fault if you have not enough of both."

Paragraphs 2 and 3 contain similar details in regard to cleansing by the authorities, the use of unwholesome food, etc.

4. "Be equally careful of what you drink. All that has been said of eating applies also to drinking. And more : be sure that cholera will find out the drunkards first, and destroy them in the greatest numbers. It is a frightful delusion to suppose that you can keep away cholera by strong drink. Medical men of experience will tell you, with one accord, that tipplers have been by far the most numerous victims in all the epidemics."

5. "Ask your Visitor where to apply in case anything goes wrong. It is a mistake to suppose that cholera will strike you down all of a sudden : it will give warning, if you will take warning. Do not give way to alarm, therefore, but remember always that too much looseness of the bowels, especially if without a known cause and without pain, should lead you to give notice in the proper quarter, in order that a Medical Visitor may be sent with medicines and disinfectants, if you are unable to command them otherwise. There are few cases of cholera that may not be checked in the very earliest stages, and nothing, therefore, can be more unreasonable than to send for the doctor for the first time, in a hurry, after the disease has got beyond the power of medicine. It is quite true that very many cases of what is called diarrhoea have really nothing to do with cholera ; but no harm is done by simply giving notice, and a little good advice at the beginning will save a great deal of trouble in the end—'a stitch in time saves nine. These instructions are intended not to frighten you, but to lead you to be wise in time."

Enclosed in this paper, which was left in every household, was a slip corresponding with the section of the city in which the house was located, and giving at least names of three depots where every kind of written information or inquiry could be handed in, and where every kind of disinfectant recommended could be procured. A form for communicating such information as to the existence either of cholera or of simple diarrhœa in the house was supplied along with this paper, giving, *first*, the date; *second*, the patient's name and name of the householder where lodged; *third*, the age of the patient; *fourth*, a very exact definition of the address: the object being that the deposit of an information paper should be as promptly as possible followed up by a call either from an authorized and qualified medical practitioner or from one of the medical visitors employed by the authorities, and to whom it was confided to judge of the urgency of the circumstances with a view to further proceedings or to the administration of simple remedies.

VII. This last instruction, issued at the instance of the Secretary to the Privy Council, was for pilots, tug-masters, and masters of ships entering the Clyde, in reference to cholera and diarrhœal disease. It is noted as having been issued on the fourth day of May, 1866, and is signed by the Lord Provost of Glasgow and the Provost of Greenock; its object being to protect the ports by giving instant information of any case of suspicious disease, and offering hospital facilities for the treatment of such case. The instructions, however, proceed so directly on the basis of those framed in London and elsewhere, that it appears unnecessary to give them here in detail.







