

**Statements relative to the present prevalence of epidemic fever among the poorer classes of Glasgow : together with some suggestions, both for affording more adequate assistance to the sick, and for checking the farther progress of the contagion : in a letter addressed to the Honourable, the Lord Provost of Glasgow / by Richard Millar, M.D.**

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Millar, Richard, active 1818-1833.  
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### **Publication/Creation**

Glasgow : Printed by Young, Gallie, & Company, for John Smith and Son, 1818.

### **Persistent URL**

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CHECKING THE FAL

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ADDRESS

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Lecturer on Materia Medica  
to the Royal Infirmary,  
and to the Glasgow Le

For

FOR JOHN

ARCHIBALD COCHRAN  
LONGMAN, HUNT,

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STATEMENTS  
RELATIVE TO THE PRESENT PREVALENCE  
OF  
EPIDEMIC FEVER

AMONG THE  
POORER CLASSES OF GLASGOW:

TOGETHER

*With some Suggestions,*

BOTH

FOR AFFORDING MORE ADEQUATE ASSISTANCE TO THE SICK,

AND FOR

CHECKING THE FARTHER PROGRESS OF THE CONTAGION;

IN

A LETTER,

ADDRESSED TO THE HONOURABLE,

THE LORD PROVOST OF GLASGOW.

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BY

RICHARD MILLAR, M. D.

Lecturer on Materia Medica in the University of Glasgow; one of the Physicians  
to the Royal Infirmary, Consulting Physician to the District Poor of Glasgow,  
and to the Glasgow Lock Hospital.

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GLASGOW:

*Printed by Young, Gallie, & Company,*

FOR JOHN SMITH AND SON, GLASGOW:

ARCHIBALD CONSTABLE & CO; AND ADAM BLACK, EDINBURGH:  
LONGMAN, HURST, REES, ORME & BROWN; T. & J. UNDERWOOD;  
AND E. COX & SON, LONDON.

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1818.

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STATEMENTS

RELATIVE TO THE KENTUCKY RAILROAD

REPORT

OF THE

COMMISSIONERS OF THE

RAILROAD

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The following Letter makes no pretension, even the slightest, to novelty of remark or information. Its whole purpose was to shew, what, it seems, has been denied, the unusual prevalence of Typhus Fever in Glasgow; and to diffuse, under a popular form, knowledge, that, in the absence of regular medical advice, may prove serviceable, the author thinks, while the present Epidemic lasts, to every branch of the Community.



Dr. Millar is in progress with a Treatise on Continued Fever, particularly, the present Epidemic. Of the last disease, he has now treated above Four Hundred and Sixty Cases, of all which he possesses an exact Register, comprizing each symptom in the order of its occurrence, together with the effects of remedies, and the appearances on dissection. This Work, it is expected, will be soon in readiness for Publication.



MY LORD,

HAVING repeatedly had the honour of being consulted, by those who preside over our municipal charities, not only relative to the best modes of affording relief to the vast number of poor persons, at present labouring under our *Epidemic Fever*, but also regarding the most effectual modes of putting a check to the contagion, the following are some of the principal suggestions that have occurred to me, on these two important topics. Such as they are, they are heartily at the service of the public, and are now respectfully submitted to the consideration of your Lordship.

Previous, however, to the detail of any particular plans, I must intreat the attention of your Lordship to the following statement, and narrative.

It becomes requisite, then, in the first place, to put your Lordship, and the public, in posses-



sion of the important fact, that during the last six years, that is, since 1812, the disease in question, has been continually gaining ground among us, in Glasgow, and its neighbourhood. What is sufficiently remarkable, it appears before this period, for a short while, to have been almost entirely extinct. On consulting the books of the Infirmary, a record of all others affording the most accurate data for learning the prevalence of any particular malady, at any particular time, among the poorer part of our population, I find that only 16 cases of the distemper were admitted into the establishment, during the whole currency of the year 1812. The most of these cases, too, did not occur, during their usual season, the winter, but during the summer months. This last fact has been the more forcibly impressed on my memory, in consequence of a particular circumstance, that having been appointed that year to deliver Clinical Lectures on the medical diseases of the Infirmary, I found the utmost difficulty in procuring an instance of continued Fever, for illustrating to my pupils the ordinary course of symptoms, together with the usual methods of cure. Nay, more, having repaired to our Faculty Hall, in expectation of procuring a specimen, by help of some of my brethren, I return-



ed disappointed, as I discovered that none of them had any such malady under their care, at least, in a shape accessible to me, that is, among the poorer classes of their patients.\*—The same singular immunity from *Typhus Fever*, was, at this period, no less remarkable elsewhere. In London, Edinburgh, Manchester, Liverpool, and other large cities, its usual and favourite abodes, it was hardly to be seen; and the Fever Hospitals, with which several of these places had been previously provided, were found on the same account, to be now almost destitute of inhabitants.

This exemption, however, was not long to continue either here, or in other parts of the kingdom. With us, though moderate in point of frequency, during the two years that immediately succeeded 1812, yet it may be observed, even then, to be steadily creeping upwards, and since this era, it will be found to have nearly *doubled* its numbers, every *successive twelve-month*. This

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\* By favour of a medical friend, I was at last furnished with two cases from the Old Wynd.—I am farther reminded, by a young Gentleman who attended the Infirmary, about this period, that the moment a Fever was brought to the house, the whole Students used to flock around it as an extraordinary occurrence.



will appear clearly from the following table of admissions into the Infirmary.

Years.	Number of Admissions.
1812 .....	16
1813 .....	35
1814 .....	90
1815 .....	230
1816 .....	399
1817 .....	714

During the part of the present year that has already elapsed, the same regular increment is perceptible, the number in this quarter alone, amounting to 303. March, the last month of the quarter, has been the worst of all, for I find the cases during this short period, to be no less than 123.—Supposing the same rate of increase, my Lord, to proceed during the remaining months of this year, and I see no reason why it should be less ; on the contrary, it is probable, to believe, that, instead of being diminished, it will be augmented ; then the list of the sick in our Infirmary, with continued Fever alone, will, at the end of the twelve-month, be exactly 1476. Now will this estimate, exorbitant as it may appear, be sufficient to convey to your Lordship, and the public, a pro-



per idea of the extent of the contagion. To the above catalogue, large as it is, must also be added, numerous cases that for a good while past we have been obliged to turn away, however painful the necessity, from the doors of the Infirmary, absolutely on account of want of room, and accommodation. In various others besides, the sufferers possess neither means, nor inclination, for admission; and I have reason to believe, there exists still a third class, who languish unassisted at home, and who have never been visited by any medical person whatsoever.—In aggravation of all this calamity, it is further to be stated, that these instances of disease are not at present limited, as many of them were, nine months ago, to particular places and districts; to certain alleys, lanes and closes; they are now spread widely abroad, and in every direction. The whole persons thus infected, meanwhile, are continually generating more or less of typhus poison, and there have thus come to be engendered among us, innumerable *foci*, or *centres* of disease, each in unceasing activity and operation, by night as well as day, and each diffusing its appropriate malignity, round its little circle. The ramifications of contagion threaten thus to become indefinitely extended: and when we con-



sider the multiplied links of connexion, that bind together, the upper and lower classes, as in the instance of servants, porters, washer-women, warehouse-men, beggars, &c. &c. what house can be, at present, considered as secure against the entrance of the poison? Fortunately, the Infirmary has, hitherto, absorbed most of these foci of contagion, and in so doing, it has been the preservative of the Town. Destitute of its aid, I know not, by what miracle, the atmosphere around us could have been so long exempted from almost universal pollution, or how the disorder could have been prevented, by this time from extending its ravages, through every class of the community.

Such, My Lord, is the formidable extent of the Epidemic Fever at present raging among us. The picture has been neither softened, nor overcharged; it is one that speaks for itself, and I apprehend it will not be surveyed with indifference, either by you, or the public.

The present state of things in Glasgow must have been long foreseen by every medical man, at least by all who possessed any opportunities of watching the progress of the reigning Epi-



demic. Without arrogating to myself, in the slightest degree, any superior portion of foreknowledge or intelligence, I may safely say that I foretold what was to happen, at least eight months ago, as well as communicated my apprehensions to various individuals, some of them in municipal authority, and in terms, too, always the stronger, the more I observed the fever to increase in frequency. Similar representations were without doubt, made by others; and the danger that threatened the community, as well as the distress of the lower orders, could not fail to be strongly impressed on the minds of those in power, by the incessant, and daily applications, made to them, from the sick, for letters of admission into the Infirmary. Still, however, it was long before any material step was taken to oppose the evil. At last, about the middle of November, a request was made, by authority, to the district Surgeons, both Consulting, and Ordinary, and to myself in quality of district Physician, that we should meet and draw up a report, of which it was the professed object to point out such measures as might, at once, afford more adequate relief to the sufferers, and, at the same time, be of sufficient power, if possible to extinguish the contagion. Such Report was accordingly



prepared, and formed the subject of various consultations. In particular, it was read before a large meeting of the governors of the Town's Hospital, its substance adopted, a Committee named to carry its measures into effect, and a sum of money voted for the purpose.—In the plan thus suggested by the official medical officers of the city, two points were mainly insisted on; one, that a House of Reception should be instantly provided to which every fever patient, as soon as discovered, should have immediate access; another, that the Typhus contagion already engendered in the houses of the sick should be destroyed, if possible, by the usual means; as of fumigation, ventilation, white-washing the walls, cleansing the beds, furniture, &c. &c. These last precautions, I understand, were very speedily adopted, had indeed, if I mistake not, been partly resorted to before, and have since been practised, with laudable zeal and industry, to a very considerable extent.—A Receiving House was also fixed upon, viz. the brick mansion to the north of the Infirmary, lately possessed by Mr. Swanston, and now the property of the Town's Hospital. To this building, accordingly, various visits were now made by the Committee, accompanied by their medical



advisers : by the latter, every thing was pointed out that seemed necessary for the accommodation of the future inmates, as the removing of partitions, placing of beds, &c. A carpenter was consulted and instructed to act, and the whole seemed to be put into so desirable a train, that it was expected fever patients might, very soon, take possession of their new asylum. Such expectations, however, proved abortive. New views occurred to the Committee; the plan was suddenly dropped, and this part of the scheme of relief may be thus said to have been strangled in its birth. Upon what precise ground this sudden alteration of sentiment in the minds of these Gentlemen, was founded, it would be useless now to enquire. The rectitude of their intentions admits not of a moment's doubt, but it is impossible not to lament, that so favourable an opportunity was thus lost, not only of affording much relief to the sick, but of setting up, as in the then state of the fever it would have proved, no inconsiderable barrier against the farther spread of contagion.

In the mean time, the Epidemic was advancing with still more rapid strides. It was now no longer confined in its attack to the lower orders



alone; but began to seek for victims among the more opulent. Those whom it seized upon, it has unfortunately almost invariably destroyed. One medical gentleman, whose case excited much commiseration, and who caught it in the conscientious discharge of his duty, forms almost the sole exception; and he too suffered long under its horrors, though he providentially escaped with life.—Much about the same time a discovery was made, that it was customary with several of the chair-masters to hire out their chairs, for the purpose of carrying fever patients to the Infirmary. The practice was soon put an end to, but our fair towns-women were horrified by the intelligence, and for a while dreaded the employment of these vehicles for any purpose whatever, either for balls, the concert, the theatre, or private visitings. In short, the spread of the fever formed a subject of ordinary conversation, and the town came to be seriously alarmed —Under these impressions, new consultations were held, both public and private, at which various medical gentlemen assisted; and the result has been, that the former scheme of fitting up the Spring Garden house, or Mr. Swanston's old residence, as a Fever Hospital, has, a second time, been resorted to.



Let us now consider, My Lord, how far the revival of this old plan, whatever it might have been formerly, be, at the present moment, adequate to the end in view. I confess, I entertain the most painful doubts on the subject; I own I feel a total conviction to the contrary.

To state the matter fairly: The new house is calculated to receive 34 patients; and by this accommodation, joined to that of the Infirmary, it is supposed that the two great purposes of the existing exigency, those of affording immediate relief to our numerous Typhus Poor, and of checking the contagion, are happily, and equally to be accomplished. If such expectations are formed, my Lord, I venture to predict they will turn out totally vain and illusory. The means are altogether inadequate to the end, the apparatus too weak for the work: it is like extinguishing a conflagration with a single bucket.—That even so much has been done, however, I rejoice most heartily. The plan is excellent, so far as it goes. The 34 patients in question will receive much more effectual relief than could be obtained at home: even the contagion, to a certain degree, will be kept at bay. What I only lament is, that the scheme appears to me altogether deficient in



point of scale, or comprehension. The public safety will not be properly secured by it, and the pest will have almost as ready access to our houses as before. Had the same expedient been carried into effect, four or five months ago, when it was first suggested, or rather previous to that period, when no measure of the kind, however urgent, had been yet adopted, it would have enjoyed a much greater chance of success. At these periods, the disease was in a manner concentrated, confined to particular districts, lanes, and closes, so as to afford a tolerably fair opportunity of something like total extirpation. The case, unhappily, is at present different. It has spread widely in every direction, and is now committing its ravages in quarters, where, at the times alluded to, it had never made its appearance. Under these circumstances, the inadequacy of the new Hospital, for suppressing the contagion, will appear the more manifest, if we consider some of the Rules at first proposed for its management, and which could have been dictated only by the unfortunate narrowness of its accommodation. One of these was, that none but favourable cases were to be received; another, that all were to be excluded except those who resided within



the municipal bounds of Glasgow. The first, if ever acted upon, I hold objectionable in as much as it defeats one of the main purposes of the Establishment, the facility of cleansing infected houses, by the prompt refuge it holds out to their diseased inmates. As for the second, it cannot be mentioned without a smile. Were the city, surrounded by a wall of brass, my Lord, the Fever is an enemy that would make its way within that wall: Is it to be deterred by the barrier of a few Royalty stones, dropped in its passage, though each be regularly numbered, and each have the letter R, as if it were a palismanic character, engraved upon it? \* New measures, therefore, my Lord, or rather additional measures to what have been so happily begun, if we are to meet the present exigency, must be adopted. What the extent of these measures ought to be, so far as I am able to judge, with your Lordship's permission, I shall now proceed to explain.

Every plan of this sort, it is evident, must be calculated to embrace two objects, one to re-

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\* Since writing the above, I have learned with pleasure, that these two Rules had been very slightly enforced, and for some time back, have been wholly abandoned.



lieve, as quickly as possible, the vast numbers at present suffering under the influence of the Fever; the other, to impose a check on the contagion. The means of effecting both must go hand in hand, but the apparatus must be incomparably more extensive than it is at present, or than is supplied by the addition of the new Hospital to the Infirmary. Instead of a Receiving House to hold 34, we must have one that will admit at least 100, or 120; or what is infinitely better, we ought to provide three or four different Receptacles, in different parts of the Town, the united capacity of which shall be sufficient for the accommodation of the number I have mentioned. It is then only that we can indulge any reasonable hope of success; either in relieving the numerous objects of distress, or suppressing the contagion, so as to ensure the safety of the public. That even with means so extensive we shall be able to accomplish, with certainty, what we thus undertake, I do not venture positively to affirm; sure I am, however, that any thing short of such measures, will be found totally inadequate for either purpose.\*

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\* I am very much flattered by finding that the same ideas, regarding the necessity of enlarging our plan of relief, have occurred, also, to



In the management of these Receiving Houses, the following are, perhaps, the Rules that ought to be chiefly attended to, and enforced.

1. The first relates to the facility of admission. Here every restriction must, at the very outset, be carefully removed. There must be no patronage of individuals: there must be no round-about application necessary to Magistrates, Governors, Clergymen, or Elders. The moment any person is discovered under Fever, he is to be sent to the nearest Depot, and for this purpose,

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the very respectable Committee whom benevolence, and public spirit, have, lately, induced to undertake the troublesome task of fitting up, and superintending, our new Fever Hospital. Under the auspices of these Gentlemen, accordingly, the erection of an additional Building is now commenced, on the Spring Gardens ground, and which, when completed, will accommodate from 50 to 60 patients. Still, however, I could have wished that our Receiving Houses had not been quite so much concentrated, the whole, of them, viz. the Infirmary and new Asylums being unfortunately situated in the same quarter, while much of our Fever rages at a distance, in the suburbs, and outskirts, of the city. Would it not be desirable to have established some of them in the more immediate vicinity of the disease? an arrangement, that by shortening the distance between their houses and the Depot, might have saved much inconvenience, and even some risk to the sick?—It is not without reluctance, I express this dissent in opinion, from the Fever Committee, whose uniform zeal, and unremitted attention, in forwarding the important objects committed to their charge, it is impossible to appreciate too highly.



every medical man whatever, whether of the city or suburbs, must be vested with the absolute, and unlimited power, of so transmitting him. In aid of this, every inducement to speedy removal must be held out to the patient, or his friends, to which a general understanding, that he is to meet with all manner of kindness, and accommodation, in the new Hospital, will materially contribute. Even small gratuities in money cannot be deemed improper.—The advantages, or rather necessity, of this speedy removal of the sick from their own dwellings to the Receiving House, it is impossible to enforce too strongly. Within the walls of the latter, every advantage of appropriate diet, medicine, and ventilation, is immediately secured to them, while an instant opportunity is afforded, of cleansing their former residence from the poison they may have previously generated; and of course, thus extinguishing, one after another, each separate focus, or centre, of contagion. After long sickness, too, the pressure of want often compels the poor to sell various articles of clothing, furniture, &c. so as thus to disseminate the disease in all directions, and to an unknown extent. From the speedy removal of the sick to an Hospital, also, an additional benefit accrues to the public, of no mean



value, that the infected person ceases any longer to be dangerous. He becomes, by this mean, secluded from society, like the lepers of old, or he may be said to be in a state of quarantine. The links that bound him to the world, in relations, friends, acquaintance, are, for the time being, entirely disjoined, or snapped asunder; and all medium of communication being thus destroyed, he can now no longer propagate his disorder. —By the regulation I recommend, then, it becomes evident, that the interest of the patient, and the safety of the public, must be equally consulted. With respect to the first, it is well known, that the earlier in its progress the disease is attacked, the more readily it yields to medicine, while if it be suffered to run its course, without interruption, every mode of checking it, or saving the sick, becomes too often abortive; and with regard to the latter, it is no less true, that the longer the malady lasts, the more infection is produced, and the greater risk of the distemper spreading, is incurred. Humanity to the individual, then, and a regard for the interest of the public, alike concur in urging the speediest possible removal of every Typhus Patient to some one of the Receiving Houses.



II. The next circumstances that demand attention are those that relate to the site, and interior arrangements, of these new abodes of Fever.

With respect to situation, it is sufficiently evident, that the more exposed and open it is, the better. This not only promotes the benefit of the sick, within, but it prevents the House itself from becoming a focus of infection. The wards, or chambers, if possible, should be large, airy, and high-roofed; the windows with sashes to draw down, as well as up, and so placed, as at all times, to ensure a thorough draught of air across the apartment. Moderate fires, will in like manner, assist in procuring a constant change of atmosphere. By these means, due ventilation can be always commanded, and it is an object of the first necessity.—If attainable, a separate ward must be set apart for the Convalescents, so as to remove them from those who are undergoing the more immediate fury of the distemper.\*

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\* The rules, and directions, that follow, might have been, with all manner of safety, left to the Medical gentlemen who may hereafter be appointed to superintend our different Fever Hospitals; but I am writing to the public, not the Profession. My brethren will readily excuse details, that, so far as they are concerned, must be considered as entirely unnecessary.



At the moment of admission into the Hospital, the clothes are to be stripped off, and the body of the patient well washed, or spunged, with tepid water and soap; and for this purpose, a suitable apartment must be provided, heated to a proper temperature, by means of a grate, or stove. After carefully drying the skin, clean linen is to be put on, which, if wanting to the sick, on account of poverty, must be kept in readiness, at the Depot. He is now to be placed in bed; and joined to the luxury of fresh sheets, he may be said to be put in possession of unspeakable comfort. These measures are never to be dispensed with; and they will be found no less conducive to the cure, than gratifying to the feelings of the sick. Cleanliness indeed, is of the utmost importance in the management of this fever, during its whole course; and may be regarded as almost of equal necessity with medicine. Besides, the previous ablution of the patient, may be reckoned of the utmost consequence, in another point of view. It seems, for a time, to check the production of typhus virus, so as to operate as one of the surest preservatives against contagion. It is for this reason, that in all those Hospitals where it is practised,—and it is invariably resorted to in all the Fever Hospitals of England, as well as our



own Fever Wards in the Infirmary,—infection is observed to be a very rare occurrence; and the attendants of the sick are enabled to fulfil their duty, comparatively speaking, with very little risk.

Such parts of the clothing of both sexes, as are composed of washing materials, at the moment of stripping, are to be plunged into cold water, with a weight above, to keep them below the surface; then, after steeping a day or two, they are to be cleansed, dried, and set apart for the sick, till such time as they leave the hospital. In the washing, cold water is reckoned safer than hot; and should the operator be timid, having placed the clothes upon a rack, numerous pailfuls of cold water may be dashed in succession over them. When the apparel is of such a nature as not to admit of these processes, as the coats of male patients, it is to be hung up in some airy place, and ventilated.\* The question will

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\* In the Gloucester Prison, one of the best regulated in England, it is a standing rule, that whoever enters must be previously subjected to a thorough purification by washing, as described above. Might not a similar precaution be useful, while the present Epidemic lasts, in our own Jail, Bridewell, &c. and indeed wherever a multitude of persons, espe-



readily occur here, that supposing the clothes to be thus withheld from patients till their dismissal, what is to serve for covering, during recovery, or convalescence? The answer is, that if they have not fresh suits of their own, temporary dresses must be supplied to them from the Hospital. It must here always be kept in mind, that it is by no means a settled point, among Physicians, whether the patient does not produce contagious matter, during the convalescence, equally, as during the more active periods, of Fever. In this uncertainty, no risk ought to be run; the spirit of economising must yield to the public safety. Let the patient, then, be kept steadily habited in his Hospital dress, till he quit the establishment, when, after being subjected to a second thorough ablution with soap, and tepid water, and being now clad in his own purified clothes, he may be sent to re-occupy his former station in society, without the smallest possibility of injuring others.

All our Fever hospitals, too, ought to be provided with a due number of Haunch Pillows.

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cially if belonging to the lower orders, is, collected together under the same roof? From our Bridewell, I have already had several cases of Typhus under my care, in the Infirmary.



What are so called, are small cushions, in shape not unlike the old flat blue bonnet still worn in several parts of Scotland, only stuffed round the edges, and hollow in the middle. The use of them is, to guard against pressure of particular parts, when such happen to be enflamed, or ulcerated. In all disorders of great debility, like our Typhus, the sick not unfrequently, from this cause, are unable to turn themselves in bed, and, accordingly, apt to lie too long in the same posture. The consequence is, that certain circumscribed spots of the surface thus exposed to long continued compression, contract inflammation; and in the weak state of the system, this inflammation, if not counteracted, is extremely liable to run into a state of Gangrene. The skin, and parts below, of course, slough out, and an ugly, ill-conditioned ulcer, is formed. These ulcers give the utmost uneasiness, detain the patient for weeks in bed, after other symptoms are gone, and occasionally prove fatal. They are met with wherever partial pressure is applied, and of course in all those "*points d'appui*" to which the body resorts, while in a recumbent posture: as on the haunches, hips, lower portion of back, shoulders, heels, hind-head, &c. I have had instances of them, during the present Epidemic, in



all these situations. They are particularly liable to happen, for an obvious reason, where any thing acrimonious is applied, as in those patients who pass their evacuations in bed.—Nurses should be instructed to watch them, at their first appearance, for then they are easily curable, and their pernicious consequences prevented. The moment the least redness of any part is perceived, the cushion described, is to be applied, and will generally check the disease in the outset; even in latter stages, the same measure is found very much to expedite the cure. Other local applications frequently become necessary, but these may be properly left to the discretion of the medical attendant.—This consequence of our Fever is observed to be most troublesome about the lower part of the spine, and about the haunches, and hips; and, in these instances, I have often used, with great advantage, another contrivance. This is simply a pair of cotton Drawers, which ought to be worn constantly. The mode of acting here, is by preventing friction. When the patient moves, the sheets, instead of rubbing against, and irritating the inflamed place, or sore, come in contact with the Drawers only, and these slide so smoothly along, as to cause neither uneasiness, nor fretting, to the parts they cover.



I can answer for the benefit of this plan, from repeated experience.

III. Supposing, now, that all our Typhus patients, or the greater bulk of them, have been fairly lodged, either in the different Receptacles, or the Infirmary, it is next to be considered, what measures become necessary, for cleansing their houses, or for eradicating the poison they may have previously generated. Of this poison it may be proper here to remark, that we know nothing, except by the effects. It is not cognizable by any of our senses. It has never been obtained separate, so as to be examined in its own essence. Various of its properties, nevertheless, have been established with sufficient accuracy; and among these, the one about which we are, unhappily, the most interested, is the power it possesses, not only of generating fever, in any person to whom it may be applied, but of causing the body of that person to produce a virus exactly similar to itself, capable of inducing the same disease in others, so as thus to propagate itself in endless series. Fortunately for mankind, so dangerous a substance is found not to be wholly indestructible by human contrivance. Various of the Gases certainly act upon, and



either by dilution, or decomposition, so alter it, as to deprive it of its usual pernicious qualities. It is upon this principle, accordingly, that all our processes of ventilation, and fumigation, proceed. We introduce various gases into those places where we suspect it to lurk, and by their action, expect to destroy it, either in consequence of chemical affinity, or dilution. The principal gases we have recourse to for this purpose, are three, viz. Muriatic Acid Gas, Oxy-muriatic Gas, or Chlorine Gas, as it is now more usually denominated by the chemists, and Nitrous Acid Gas; to which is to be joined another, as I conceive, of more importance than all the three put together, namely, common atmospherical air. For the employment of these instruments of fumigation, and ventilation, perhaps, all particular directions might be regarded as superfluous, considering that they have, for some time, pretty extensively, been employed, under the management of the police; but as I think it of importance, at the present period, that the modes of using them should be as extensively known as possible, and among all ranks, I will rather run the risk of wearying my readers, than leave any particular unexplained, that can be considered of the least consequence, to the uninform-



ed.—I shall, therefore, describe very briefly, the usual modes of purifying Wards, or Chambers, by means of the different gases above mentioned.

1. With Muriatic Acid Gas.—This is a very easy process. Nothing more is requisite than to put a little common Salt into a tea-cup, and pour upon it a small quantity of Sulphuric Acid, or Oil of Vitriol, when the Muriatic gas will be instantly disengaged, and spread itself through the room. If the chamber be not very large, an adequate proportion will be, two or three ounces of common salt, to two thirds, by weight, of acid. In this mode of fumigation, it is in the power of the operator to extricate much, or little, gas, at his pleasure, according as he adds the sulphuric acid to the salt, either by degrees, or all at once. The salt is to be heated: for this purpose, the tea-cup containing it is to be surrounded with hot sand, so as to have its temperature somewhat raised.—If, again, a very large room, as the ward of an Hospital, say one containing 20 beds, is to be fumigated, of course a much larger dose both of salt, and sulphuric acid, will be requisite. For a chamber of such dimensions, the proportions may be nine ounces and a half of salt, to seven and a half of acid. This



method of fumigation is so far convenient, that it may be practised without removing the sick, as Muriatic gas is neither very disagreeable, nor very noxious, unless inhaled during too great a length of time.

## 2. With Oxy-muriatic Gas, or Chlorine Gas.

—This gas has been supposed, by some, to be capable of still greater expansion, as well as of more forcible operation on noxious vapour, than the more simple, (as it is still reckoned by many) Muriatic. To procure it, a mixture is to be made, in powder, of decrepitated sea-salt, (that is, salt deprived by heat of its water of crystallization,) and black oxyd of manganese, a substance easily to be obtained from all glass manufacturers; and then, as before, some sulphuric acid poured on the mixture. For purifying a room of 6 beds, a very good proportion will be, two ounces of salt, and one ounce of manganese, with half an ounce of acid. Previous to adding the acid, about one ounce of water is to be blended with the salt and manganese, in the containing cup.—It must never be forgotten, that this Oxy-muriatic, or Chlorine gas, is a highly noxious vapour. I have seen it on several occasions induce severe inflammations of the chest,



and in one instance, to a person who was engaged in preparing it for the purpose of bleaching, without proper attention to the luting of his vessels, it occasioned a highly painful eruption on the face, ending in scabs near half an inch thick. It is a mode of fumigating, then, never to be practised in the presence of patients: they must always be carefully removed before it is ever had recourse to.

3. With Nitrous Acid Gas.—This plan of fumigating is equally simple with the others. A quantity of heated sand having been put into a small earthen pipkin, or other similar vessel, a tea-cup, holding some sulphuric acid, is to be plunged into the sand. After the acid has become moderately heated, a little Nitrate of Potash, or common salt-petre, previously reduced to powder, is then to be sprinkled into the cup. The Nitrous Acid Gas will instantly rise, and diffuse itself through the room. For a chamber equal to a cube of 10 feet, an adequate proportion will be, half an ounce of sulphuric acid, to half an ounce of salt-petre. The Nitrate ought to be added slowly, or by degrees, to the acid.\*

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\* Perhaps as a supplement to what has been said above, I ought not wholly to omit notice of some other, more popular, modes, of preven-



Such are the different modes of fumigation at present in use. They admit of indefinite repetition; and for the thorough cleansing of an infected apartment, it is often necessary that the process be employed three or four times.—I am now to speak of the other method of destroying typhus contagion, mentioned above, that in which we endeavour to extinguish it, in consequence of dilution, or neutralization, by means of atmospheric air. Few directions are necessary here. We have only to admit into the infected chamber, and admit as freely as possible, the breath of heaven. If this be done effectually, it will unquestionably rob the contagious fomes of

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tion, such as the use of Vinegar, either simple, Camphorated, Ammoniated, or Aromatic, often smelled to; the smoking, snuffing, chewing, of Tobacco, &c. All these I hold utterly useless, unless in so far as they may tend to promote a discharge from the mouth, a purpose for which the employment of Tobacco, or any other masticatory, must, of course, be reckoned the most efficacious.—There is, I think, some reason to believe, that particles of contagious matter floating in the atmosphere, may, now and then, be entangled in the saliva, so as to pass over with it into the stomach, and in that manner prove a source of fever. Those much occupied about the sick, therefore, should avoid swallowing their spittle, neither should they stand in a stream of air that blows over their beds.—These two last are the only precautions I ever observe myself;—that is, when I do not forget, as too often happens.—In going my rounds, I have not unfrequently experienced some slight degree of squeamishness; but this almost immediately wears off, on walking out into the open air.



every noxious quality, and render it as innocent as the atmosphere around. This is a truth that I hold it impossible to impress too strongly on the mind of the public. To me there appears complete evidence for the belief, that every new portion of atmospheric fluid joined to this poison, robs it of more or less of its malignity, and that by constantly adding to it fresh quantities of air, we at last so dilute, or otherwise alter it, as entirely to deprive it of its fever-producing power. In every situation, then, where this salutiferous plan can be practised, it is never to be neglected, but ought to be followed up with the utmost activity. Windows, and doors, are to be kept constantly open, by day and night, and the more rapidly, and the more frequently the atmospheric current can be renewed, so much the better.—A moderate fire in the grate will serve greatly to promote this desirable circulation of air.—That in many parts of our City, very considerable difficulties lie in the way of this plan of purification, I am here, my Lord, perfectly aware. It may be asked, how is it possible to excite an atmospheric stream in our narrow lanes, and closes, where the air is for ever stagnant, and is continually impeded in its motions by a thousand obstacles, as dunghills,



walls, and houses? To the difficulty of ventilation here, I most readily subscribe, but by no means to its entire impossibility. By willing minds, much may be done, even in these unfortunate abodes, provided the inmates were thoroughly convinced of the importance, or necessity, of the trial. To impress such necessity upon their understanding, then, the most strenuous exertions are to be resorted to; and from the general intelligence that pervades every class of our townsmen, I am perfectly assured, such efforts will not be made in vain. Indeed, it is only by a conviction of this sort, universally prevalent, that this mode of cleansing can be rendered at all available. As one of its instruments, and as an incitement to use it, a quantity of fuel ought to be supplied to all poor householders, gratis. Something, too, may be done by the Police. Dunghills, and every nuisance that tends to vitiate the atmosphere, ought to be instantly, and carefully, removed. It is here, too, that the different modes of fumigation enumerated, ought to be brought into practice, and where, in defect of ventilation, they may prove of the most eminent service. These fumigations will operate advantageously in another way. The smell they diffuse is by no means a pleasant



one, and the natural desire of getting quit of it, will infallibly lead to every practicable contrivance for admitting atmospherical air.—In addition to all these, other modes of cleansing are, on no account, to be neglected; such as regard, chiefly the walls, and furniture, of the apartment.—The former, after scraping, are to be whitewashed with lime. The latter, that is, the beds, curtains, tables, chairs, &c. to which, it is likely, infectious particles may adhere, are to be subjected to the common modes of ablution: the stuffing of the bed, if of straw, or other cheap material, ought to be burned, and a fresh supply afforded, gratis, to the proprietor. Another circumstance demands almost equal attention. I know, from unquestionable evidence, that much of our typhus contagion has proceeded from a certain description of low lodging-houses, destined for the accommodation of the poor, and of which the inmates, for some time back, have been chiefly indigent strangers, (many from Ireland) who have resorted hither in quest of work. In these places, when an individual dies of fever, or is removed for cure to the Infirmary, not the slightest effort is made to counteract the infection—on the contrary, a new inmate is received, who reposes in the same bed,



is covered by the same bed-clothes, and is surrounded by the same furniture, so as constantly to breathe an atmosphere loaded with death, and disease. As a natural result, he catches the distemper, augments the fomes in his turn, and finally makes way, either by removal to the Infirmary, or dissolution, for a new inhabitant, who runs a similar course: and thus there is a constant succession of typhus patients from the same dwelling. To understand the enormity of this evil, it is only necessary to state its existence; it is one, however, to be rectified, not by medicine, but the Police. Loth, as I would otherwise be, to abridge individual liberty, some restraint, in this instance, I apprehend, to be essentially necessary: nor could such a measure be justly considered any infringement of freedom, since it is an acknowledged maxim even of the freest states, that the public safety is to be regarded as paramount to every other consideration. In Manchester, too, and several English Cities, as I have been informed, no Lodging-House can be opened without a license. Might not a similar check be adopted here?—I understand, indeed, that the most laudable precautions have been already resorted to, in this matter, both by our Magistrates, and Police. You, my Lord,



must be a competent judge, how far they have been widely enough enforced, so as to promise a termination to the evil.

Such, my Lord, are some of the measures to be resorted to, if we mean, effectually, to resist the present prevalence of Typhus in Glasgow. They ought to commence without the least delay. The pest is continually increasing, and what lengths it may reach, unless plans of prevention be adopted, it is impossible to foresee.—I may advert here, to a question which has, very frequently, been put to me, whether the present contagion be likely to decline, or, spontaneously, to wear itself out; whether, by some fortunate change of weather, certain processes may not be set up, of power to restore our atmosphere to its former salubrity? These are difficult queries; nor can I pretend to answer them with positiveness. Unwilling as I am, however, to deny altogether, the potent influences attributed, by many respectable authors, to the air, as well as various relative positions of the Sun, and Moon, over febrile diseases, yet may I mention one fact constantly staring us in the face, concerning our own Epidemic, which, I think, must always render our fears, on the present occasion, much greater than our hopes. It



is this:—That ever since 1812, our Fever, as was formerly shown, has continually exhibited a regular and invariable annual increase, nay, has constantly doubled the number of its victims, every year; yet how many vicissitudes of atmosphere of every kind, and description, have we not all, within the above period, witnessed? With what confidence, then, are we to repose on a species of assistance, the utter inefficacy of which we have so long, and so repeatedly, experienced? Our efforts, therefore, must, on no account, be relaxed. Fortunately, we have in our hands less fallible means of safety; and, by diligently pursuing these, we shall, at least, afford assistance to numberless miserable objects; and if not entirely suppress, certainly circumscribe, the contagion, within much narrower limits. Should the vaunted “*skyey influences*,” alluded to above, at length arrive, let us hail them when they come.

As an additional argument to quicken our exertions, allow me, my Lord, to mention another circumstance not unfrequently productive of the most pungent distress. What I mean, is a rooted opinion among our poorer classes, that our present epidemic is so irresistibly contagious, as, infallibly, to seize all those who may come with-



in the sphere of its infection. The consequence is, that great fear is excited, and great fear never fails to generate much selfishness and hardheartedness. Hence, not only acquaintances, and friends, but even near relations, are thus induced to abandon, almost wholly, the dwelling of the sick; and so far has the evil extended, that, I am afraid, not a few of the poor sufferers have wanted even the common offices of humanity. Of this selfish terror, two instances came more immediately under my own knowledge. One of them was that of a man, who was turned out into the streets by his Landlord, for fear of infection; in the open Streets, with the fever raging in his vitals, this person lay, during two whole days, and two whole nights; till at last he was picked up by the police, and sent to the Infirmary. This happened more than 3 months ago, of course in the depth of winter, and in a christian city, where immense sums are annually collected for the propagation of the Gospel. The other instance, was that of a man who arrived at the Infirmary, with his legs in a state of gangrene, or in plain English, rotting off, and without a pulse at his wrist. The persons who brought him, after depositing their burden, ran off; (no uncommon occurrence,) so that I could obtain



no very accurate account of him. From what was gathered, after he had been recruited by cordials, however, and before he died, and he survived in misery more than a fortnight, it appeared that he had been lying for several weeks, in some cellar about the Goosedubbs, his feet either entirely without covering, or immersed in water, and in other respects, totally unprovided with any of those comforts, and conveniencies, suitable to his condition. \*

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\* Another instance of hard heartedness, and from the same cause, fear of infection, has just now occurred. Elizabeth Howe, confined to bed, with fever, during several days, was, on the 12th of the present month, deliberately expelled her lodgings, by her Landlord, into the Street, the man, at the same time, telling her, that he would not harbour his own sister, if in the same condition; and that, besides, she must be conscious, she had no money to subsist upon, during her illness.—The poor woman, thus turned out, betook herself, for refuge, to different neighbours and acquaintances, who had the humanity to receive her, moving about from house to house. In the course of this perambulation, she was, for 72 hours, without a bed to lie upon, but was always suffered to recline, or remain by the fire, in the night. Kindness, however, became exhausted, her neighbours and acquaintances grew tired of her, and she was again turned into the Street. After this second expulsion, having lain down in a stair, she was discovered by one of the District Surgeons, and through his humanity conveyed to the Infirmary, where she at present remains, under my care.—This is a relation that requires no comment.—I have often thought, that were all the scenes of wretchedness, occasioned by our Epidemic, even those only which pass daily under the eyes of our District Surgeons, with others of the profession, who visit the mansions of the poor, collected into one narrative; they would form a curious, and certainly, no inconsiderable, chapter, in the history of human misery. What a noble



Part of the calamity in these, and similar cases, no doubt, proceeded from the extreme terror prevalent, in the minds of the poorer classes, regarding the irresistibility of typhus contagion; yet as every evil is always balanced by some attendant good, this excessive apprehension, if properly managed, might, I think, be turned to the advantage of humanity. Had we proper Re-

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act of Charity would it be, to go the rounds of these desolate dwellings, cheering the minds of the Inmates, and ministering to their wants: how congenial to that text of simple and incomparable pathos, preached from the Mount of Olives. "*I was sick and ye visited me:*" how conformable to the comment added, by the same Divine authority, "*In as much as ye have done it unto one of the least of these my Brethren, ye have done it unto me!*"—But the character of "Marseilles' Good Bishop," I am afraid, is not very prevalent amongst us.—Our piety has taken a new turn. It deals too much in generals. It delights only in objects at a distance, while it flies from those that are near. It must be pampered with something magnificent; what will figure in the telling, or may form an article in our new "*Lettres Edifiantes et Curieuses.*" Nothing will serve it, but the high rank of Propagandist, and Apostle. We glow with the desire of propagating the gospel abroad, we are cold to its more practicable duties at home. The present miseries of the sick Poor, in every alley, lane, and suburb, of our city, are too gross, and homely, to attract regard; they want dignity, or grace, to allure the fastidiousness of our sympathy; they afford no outlet for the vanity of our godliness. We turn, with disgust, or apathy, from crowds of tattered, and dying, wretches, huddled together, a whole family often to a single bed, in hovels, some of them as airless as the black Hole of Calcutta, destitute of every comfort and convenience, not unfrequently in want of food; and we console ourselves with the reflection, that our Bible Societies are flourishing, and that our Moravian Missions continue to prosper!



ceiving Houses, it would cut short all delay, in patients resorting to them ; and it might materially assist us in all our efforts of prevention, as by fumigation, white-washing the walls, ventilation, &c. &c.

I am afraid, however, my Lord, I have already wearied you with these long details. It is possible, too, you may think the colours a great deal too gloomy. Should such idea occur, your Lordship may remain assured, it is erroneous. Habituated, now, for almost two years, and during nearly an hour every day, to see around me numbers of such patients, and furnished, I think, with a due share of professional callousness, to view them with composure, I would consider it a very difficult task, to give an overcharged picture of the misery this disorder too often presents.—Among its various inflictions the Physician is compelled to witness, none, perhaps, are more painful to contemplate, coupled as they must be in his mind, with their extreme danger, than those numerous derangements of sense and intellect, it almost never fails to produce, in its victims. Thus, in walking the rounds of a Fever Ward, one man stares upon you with fiery eyes, and a ferocious visage, while his next neighbour is seen lying in the lowest despondency, his head



drooping upon his breast, his face pale, his eyes suffused with moisture, and sometimes tears trickling down the cheeks. A third reclines in a state of entire apathy, and stupor, not to be roused, except with the utmost difficulty, and when roused, gazing wildly about, altogether unconscious where he is, and without a single idea of recollection. To an unexperienced eye, this condition wears the appearance of sleep, but it is too often the sleep of death.—Sometimes, the ear is the only sense that suffers, (that is, if we except the principal organ of taste, the tongue, which is always more or less affected), and complete deafness ensues. This deafness, however, is by no means a bad symptom; on the contrary, it is a good feature in the prognosis.—Occasionally the sense of hearing, instead of being too obtuse, is too accute. I have a case at present, where, such is the morbid sensibility of the auditory nerve, that the patient dreads the slightest sound, and complains of it as giving excruciating agony. Others of the sick present in their countenances the inanity, and vacant expression, of idiots: none of these have I ever seen recover. Another set lie muttering to themselves, completely absorbed in reverie. The trains of ideas are generally melancholy, but at other times, to-



tally the reverse; the patient talks, smiles, sometimes laughs to himself, even with cold extremities, and a fluttering pulse, and though on the brink of eternity, totally unconscious of his fate; bringing strongly to mind, the affecting picture, by Gray, of

————— moody madness laughing wild,  
amid severest woe!

One patient (a female,) was so exceeding nervous, that when touched, as in feeling the pulse, or even talked to, she instantly shuddered, and fell into convulsions; and this affection lasted above a week. She was finally recovered by the administration of strong cordials.—It is rarely that these aberrations of mind are attended with much mischief, either to the sick themselves, or to by-standers. Exceptions, however, occur. One patient broke out into the most outrageous insanity, threatened, and attacked, every person around him, and was obliged to be restrained by the common modes of coercion.—What is singular enough, insanity is, by no means, an unfavourable symptom of typhus. Those affected by it almost invariably recover; and of the man to whom I now allude, the convalescence, accordingly, was uncommonly rapid.—Delirium is a much more formidable occurrence. A gentle-



man, whom I attended in private, endeavoured to precipitate himself from a two story window, and would have effected his purpose, had he not been restrained, and he was restrained with difficulty, by a female relation, and two nurses, who watched by his bed.—About two weeks since, an Infirmary Patient, in the casual, and very brief absence of his nurse, was found, at her return, very deliberately stuffing the sheets, which he had taken from his bed, into the fire-place, where he had consumed a part of them, so that the room was in a blaze. When interrupted, he became very angry, and seemed grievously disappointed, that he was not suffered to burn the whole. However mischievous in its form, this was merely the last convulsive struggle of departing life. Immediately after it, he sunk down exhausted, fell into total imbecillity, and expired the same evening.

Such, my Lord, are some of the calamitous circumstances, to which we are all liable from the present Epidemic, and what it too often produces, from the derangement of one set of our functions only.—They are only a few of its evils: But your Lordship must be already tired, and I forbear to enlarge farther, on these melancholy topics.



Before finishing this long letter, it may, perhaps, be expected, that something should be said on the topic of expence, or that some calculation should be made of the funds requisite for carrying into execution the schemes which it proposes. On this head, surely, no difficulties need be apprehended. Confidence may, without doubt, be reposed, as usual, in the long tried munificence, and liberality, of our townsmen, in a charity to which real distress has ever had easy access; and to which, even the miseries of distant countries, have not appealed in vain, as in the memorable instances of the German, and Russian, Sufferers.\* To the same effect might be quoted, the ample sums every year collected in Glasgow, for the use of the Bible, and Missionary, Societies. What has thus been so freely given, on so many former occasions, it is not likely, will be denied, on the present; nor is it possible to believe, that the succours so lavishly bestowed on Foreigners, will be now refused to our own Countrymen.—But on this subject it seems unnecessary to expatiate. The allotted purport of this letter was merely medical; to point out the present alarming prevalence of our

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\* The sum contributed, in Glasgow, to the German Sufferers, amounted to £4,545; that to the Russian Sufferers, £5,200.



Epidemic, and to suggest such means, as, while they afforded immediate relief to the more destitute portion of its victims, might, also, serve to arrest the progress of the contagion; as to what regards the pecuniary contributions necessary, it formed no part of the plan, and it is impossible to leave it in better hands than those of your Lordship.

I have the honour to be,

MY LORD,

YOUR LORDSHIP'S

Obedient Humble Servant,

RICHARD MILLAR.

Spreull's Land, 28th April, 1818.

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Young, Gallie, & Co. }  
 Printers. }







