

Observations on the alarming progress of the gaol or typhus fever : with a summary of means of received practice for the treatment of the disease, and preventing its further contagion / by Sir G.O. Paul, bart.

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OBSERVATIONS
ON THE
ALARMING PROGRESS
OF THE
GAOL OR TYPHUS FEVER;
WITH
A Summary of Means of received Practice
FOR THE TREATMENT OF THE DISEASE,
AND
Preventing its further Contagion.

BY SIR G. O. PAUL, BART.

ORIGINALLY PRINTED IN 1784,
For the Use of Parish Officers and other Inhabitants of the
COUNTY OF GLOUCESTER;
AND NOW REPRINTED, WITH ADDITIONAL NOTES,
And recommended to the Attention of the Inhabitants of Towns of
other populous Districts where Contagious Fever
prevails amongst the Poor.



GLOUCESTER:
PRINTED BY D. WALKER AND SONS;
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1817.

ORBITATIONS

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ALLEGEDLY PROVED

OF THE

CAUSE OF TYPHUS FEVER

WITH

A HISTORY OF THE DISEASE IN INDIA

FOR THE TREATMENT OF THE DISEASE

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Preventing its further Contagion

BY SIR J. O. FAIRBANKS

ORIGINALLY PUBLISHED IN 1852

FOR THE LONDON LITERARY AND SCIENTIFIC SOCIETY
OF THE UNIVERSITY OF LONDON

AND NOW REPRINTED WITH A NEW INTRODUCTION
BY THE EDITOR OF THE LONDON LITERARY AND SCIENTIFIC SOCIETY



PREFACE.

THIRTY-THREE years have now elapsed since the first Edition of the following pages was printed, as a compendium of the opinions of Dr. LIND, given in his "*Essay on Preserving the Health of Seamen, with Considerations on the Gaol Distemper*;" a contagious Typhus then raging through the villages of the county of Gloucester, by infection originating from the crowded state of our ill-ventilated prisons.

THIS source of disease has, since that time, been happily prevented, by an extended exertion of the spirit of reform in the construction and regulation of these prisons,

BUT as it is now said that a contagious Typhus has shewn itself in some crowded prisons which have *not* been so improved, and that the same disease is now prevalent in many populous districts of the united kingdoms; I have (*by desire,*) directed the little work to be re-printed, and offered to the attention of parish officers and others who have the care of the public health.

SINCE

SINCE this compendium was first printed, new opinions have been advanced and established “ *respecting the nature of contagion and the means of destroying it by fumigation* ”* Of such of these opinions as are approved by Sir HUMPHREY DAVY,† I have given extracts, by way of notes, in *addition* to the original text, but without presuming myself to decide on comparative efficiency of the concurrent means.

G. O. P.

* See “ *Effect of the Nitrous Vapour in preventing and destroying Contagion.* ”—By JAMES CARMICHAEL SMITH, M.D. 1799.

† To this excellent Chemist (whose science is ever ready for application in the cause of humanity,) I am indebted for a perusal of my prepared copy for the printer of this edition ; and for some opinions on fumigating substances which are expressed in the notes signed with his initials.

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OBSERVATIONS
ON THE
ALARMING PROGRESS
OF THE
GAOL or TYPHUS FEVER, &c.

IN former publications on the subject of the prisons of this county, I have urged the danger arising to the community from their unhealthiness, as a motive to quicken our attention in the pursuit of decisive and effectual reform. I have farther suggested, that, until such a reform could be carried into execution, it behoved the parish-officers, and others who have the care of the public health, to avoid, as far as possible, the causing persons to be committed for small offences, to an infected prison; and that, where such commitments became indispensable, the propagation of disease could only be prevented by a strict attention to the state of health of prisoners on their return to their families; and to prove that my apprehensions were not groundless, I recited some fatal instances that had happened in my own neighbourhood. So little regard was, nevertheless,

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vertheless, paid to these admonitions, that on my visits to the gaol, I constantly found a number of persons, committed for bastardy,—for default of paying small penalties,—for vagrancy and other trifling offences,—affociating with notorious criminals, who were infected with the gaol-fever. The consequences of this inattention were such, as must naturally follow. The disease has been communicated through the county; and in many instances attended with destructive effects. I sincerely wish this lesson of experience had been avoided by a timely regard to cautions that were not hastily suggested. If, however, I have failed in my attempts to avert the evil, I trust I may be more fortunate in my endeavours to remove it.*

* “THE deplorable state of health of the prisoners in the county gaol at the Spring Assizes (1783), was so shocking to humanity, and so injurious an impediment to the due course of public justice, from the necessity of postponing to the following Assizes the trial of the many prisoners afflicted, that the Grand Jury considered it their imperative duty, to enter on a careful investigation into the causes which produced so fatal an effect; and they found that it was not attributable to any neglect of the officers, but that putrid disease was a *natural* and almost *necessary* consequence to which a full gaol, with the existing defects in its construction, must subject its inhabitants.

“The dire effects of this fever were not confined within the walls of the prison. For within the distance of only four miles round my own house,—three debtors—one poacher—and a fine —have died within the preceding ten days, of fevers brought from the gaol. Eight other persons have been infected by them;—of these, one is dead, and the seven others lie with little prospect of recovery.—What then must be the aggregate of consequences through the county?”

See *Address to County Meeting in 1783*, by G. O. P.

UNDER

UNDER the present circumstances, it appears to me of the utmost importance, that the public in general should be familiarly acquainted with the best means of preventing the propagation of contagious fever. Any medical observations on the subject, arising from my own unassisted judgment, I should consider very unworthy of the public attention. Dr. LIND's *Essay on Preserving the Health of Seamen, with Considerations on the Gaol Distemper*, published, for WILSON and NICOL, in 1774, is universally acknowledged to be the best authority, and is precisely applicable to the disease in question.—From this valuable work, I have endeavoured to form such a practical abridgement, as may be sufficient for our present purpose.

THE gaol fever, which is now a general national calamity, and the subject of our present enquiry, is not a disease of that highly malignant kind, which, under the common term of *gaol distemper*, has at various times shewn its violent effects in courts of justice, viz. At Oxford in the year 1579. At Taunton in 1730. And at the Old Bailey in 1750.

DR. LIND, who, from his situation as physician to the Royal Hospital at Portsmouth, and from his industrious researches on the subject, is certainly the best authority, describes the fever in question to be, “A disease of a contagious nature, the produce of filth, rags, poverty, and polluted air, which subsists always in a greater or less degree in crowded prisons, and in
 “nafty,

“ nasty, low, damp, unventilated habitations, loaded
 “ with putrid animal steams.”*——“ The influence
 “ of its infection is very extensive, and its chief source
 “ most undoubtedly the gaols; as we often trace the
 “ importers of it directly from thence. It is also fre-
 “ quently met with in parish poor-houses; and in places
 “ unsuspected it often exerts its malignant influence.

“ THERE is no *particular* symptom by which the
 “ gaol distemper can be characterised; but its gene-
 “ ral symptoms are a low fever, attended with a
 “ violent thirst, and heat of the skin; often with chills
 “ at the beginning, and always with a disorder in the
 “ head, which may rise to a delirium or stupor. In
 “ common cases, its symptoms resemble nearest, what
 “ has been described by some authors under the
 “ name of *nervous fever*; though frequently unat-
 “ tended with malignant symptoms, yet it is of a
 “ dangerous nature: it not only often proves fatal,
 “ but greatly injures the constitution of those who
 “ recover; and persons once attacked, are subject to
 “ frequent relapses. †

“ MANY entertain a very false opinion of the dis-
 “ ease, to suppose there is no infection, unless attend-
 “ ed by a raging malignant fever; but that is far
 “ from being the case. ‡ The first symptoms of an

* IT is to be feared, that this description of cause is but too ap-
 plicable to the fevers at present predominant amongst the poor.
 Ed. 1817.

† Dr. LIND's Essay, p. 3, 306, 507.

‡ Id. p. 310.

“ infection

“ infection are generally mild, and may easily be
 “ mistaken for common chills, a cold, or a fit of the
 “ ague. Amongst a number, many will complain of
 “ shiverings; some of pains in the breast, and cough;
 “ others of head-ach, and pains of the limbs, attend-
 “ ed with low fever, thirst, and disagreeable heat of
 “ the skin: in such cases, there is reason to suspect a
 “ beginning infection, which in time will be attended
 “ with more violent symptoms.

“ THE clearest idea we can conceive of the man-
 “ ner in which this infection is communicated, is to
 “ suppose, that there is in all infected places, ad-
 “ hering to certain substances, an envenomed *nidus*,
 “ or source of effluvia, from whence the air, as it is
 “ more or less confined, becomes more or less strong-
 “ ly impregnated: but though the air be the vehicle
 “ of infection, yet it cannot be said properly to reside
 “ in it, but is occasionally sent into it from sub-
 “ stances in which it resides.* By confinement in
 “ infected cloaths, the infection is multiplied, and
 “ acts with far greater virulence, than when imme-
 “ diately transmitted from the naked body. Polluted
 “ rags afford a prompt receptacle, and prove a con-
 “ stant source of fresh infection. A whole Indian
 “ nation in Nova Scotia was almost entirely destroyed
 “ by some infected blankets and cloaths, left behind
 “ by the French squadron under the Duke D’An-
 “ ville, in the year 1746.†

* Id. p. 8.

† Id. p. 308.

“ THE infection extends itself at no great distance.
 “ The houses in the neighbourhood of an infected
 “ prison, are in no danger of infection. In the open
 “ air, it does not diffuse itself more than fifty or sixty
 “ feet from its source; though even at that distance
 “ a person might run some risk from a current of air
 “ highly impregnated with the contagion, which is-
 “ sued immediately from a door or window, where it
 “ had been long pent up.

“ BY a fixed attention to the subject, I am con-
 “ vinced, that the body of the diseased kept exactly
 “ clean and neat, is not so liable to impress the
 “ taint, as his late wearing apparel, dirty linen, and
 “ uncleanness of any sort, long retained in an im-
 “ pure state: I say, these last contain a more certain,
 “ a more concentrated and contagious poison, than
 “ the newly emitted effluvia or excretions from the
 “ sick.”—In confirmation of this hypothesis, Dr.
 LIND observes, “ That at Haslar Hospital, it was
 “ the duty of the labourers to carry the sick to the
 “ wards in their infected cloaths, and afterwards to
 “ bundle up and bring away every article of their
 “ apparel. These men were repeatedly infected with
 “ the most obstinate fevers; whereas the nurses, who
 “ undrest the patients near a good fire, and who con-
 “ stantly attended them after they were put in a
 “ clean bed and clean linen, were not only in many
 “ respects less liable to fever, but when they did re-
 “ ceive it, it was much milder, and sooner removed.
 “ Several of the nurses who suffered, owed it to their
 “ own

“ own indiscretion, by keeping the dirty linen, after
 “ it had been taken from the sick, for some days in
 “ the room where they slept, contrary to the rules of
 “ the house.—These observations may serve to en-
 “ force to the sick and their attendants, the necessity
 “ of an exact neatness, and a constant cleanliness, a-
 “ bout both.

“ WE are of opinion, that besides the materials of
 “ wool, cotton, linen, and apparel of almost every
 “ sort, the seeds of infection adhere strongly to
 “ beams of wood, chairs, bedsteads, and other fur-
 “ niture, &c.

“ IT is an erroneous opinion to conceive, that
 “ there can be no infection in a gaol, unless where
 “ there is such a highly malignant fever, as has been
 “ particularly described by medical authors, under
 “ the name of the gaol or hospital fever.*—It is
 “ also a mistake to presume there can be no infec-
 “ tion, unless the distemper be universal amongst the
 “ prisoners: I should judge it a very general infection,
 “ if one-fourth of the prisoners were taken ill.†—It
 “ is further a mistaken notion, which has frequently
 “ been asserted, that a person cannot communicate a
 “ disease which he has not got; and therefore that
 “ there can be no infection from a person in health,
 “ brought from an infected place into the open air.‡
 “ This is far from being the case; as the danger of

* Id. p. 308.

† Id. p. 310.

‡ Id. p. 313.

“ infection

“ infection from a person really labouring under
 “ the gaol distemper, when kept perfectly clean, is
 “ found to be much less than from contaminated
 “ cloaths, often carried about by a healthy person.

“ BUT after all, it is a satisfaction to know,* that
 “ in whatsoever substance, chamber, or apartment it
 “ is lodged, it may at any time be effectually de-
 “ stroyed by the force of fire.† A great heat, like
 “ that of an oven, such as would be destructive of ani-
 “ mal life, effectually destroys this infection in all sub-
 “ stances that can be exposed to it: but an inferior
 “ degree of heat, in which a man can breathe, will
 “ often fail of destroying it.

“ HENCE the infection may with certainty be de-
 “ stroyed in any ship or house, where the people can
 “ be removed, so that fires may be lighted, and the
 “ smoke confined with safety: but in prisons or
 “ other places, where the people cannot be removed,
 “ and consequently a sufficient degree of heat cannot
 “ be raised, the application of fire and smoke may
 “ prove ineffectual.

“ STRONG fumigations of sulphur or tobacco, sprin-
 “ kled on a charcoal fire, and close pent up, will also

* Id. p. 320.

† “ IN employing fire and heat, care must be taken not to in-
 crease the heat in the apartments, whilst inhabited by the sick.”
 —Dr. Smith, p. 15.

“ effectually

“ effectually destroy infection in all substances ex-
 “ posed to them.*

“ THUS, by cutting off all communication be-
 “ tween the sick and healthy, fumigating the apart-
 “ ments,† and purifying all tainted cloaths, either
 “ by exposing them to the heat of an oven, or the
 “ steams of brimstone and charcoal, the most violent
 “ infection will effectually be subdued : an object of
 “ the utmost consequence to the community, and
 “ which humanity must recommend to general at-
 “ tention.”‡

*In the lieu of these substances, Dr. SMITH recom-
 mends the vapour of the nitrous or the marine acid.
 They both destroy contagion ; the vapour of the ni-
 trous acid is perfectly harmless, in any quantity in
 which it may be required, and therefore is most pro-*

* Dr. LIND's Essay, p. 339.

† Id. p. 340.

‡ Dr. SMITH—preparatory to his recommendation of fumiga-
 tion by the agency of the nitrous vapour—has condemned, or ra-
 ther has denied the efficacy of all these substances for the purpose
 of fumigation, except of sulphur.

“ The burning of sulphur produces the volatile vitriolic or sul-
 “ phureous acid—the most powerful agent in the mineral king-
 “ dom for destroying contagion. But as it affects the respiration
 “ of animals, it can only be employed for cloaths, or empty
 “ apartments.

“ Charcoal fire produces, in addition, the carbonic acid—or
 “ fixed air—which has little influence on contagion, but renders
 “ the air still less fit for respiration.

“ The smoke of tobacco is no better than of any other vegetable
 “ matter.”—*Smith's Essay, p. 17 and 21. Ed. 1817.*

pet to be employed where persons are necessarily present. The vapour of the marine acid is, in a degree, injurious to respiration, and therefore should not be used except for purifying cloaths or apartments.—Ed. 1817.*

WITH respect to personal preservatives, for the use

• To obtain these vapours—“ Put half an ounce of vitriolic acid into a crucible or pipkin, a glass, a china cup, or deep saucer; warm this over a lamp, or in sand heated by a lamp, adding to it, from time to time, some nitre (salt petre), or common salt.

“ The former (the nitre) produces the nitrous acid vapour; the latter (the common salt), the marine acid vapour, at a certain degree of heat.

“ In places filled with contagion, place these vessels at a distance of 20 feet from each other, on the floor, or hang them to the ceiling with waxed silk cords. The heat passing through sand is better than immediate from a lamp; and as the quantity of vapour depends on the surface, a greater number of small vessels is better than a less number of large ones.

“ The lamps should be placed contiguous to the hammocks or beds of persons affected with any contagious or putrid distemper, whether fever or dysentery—or between the infected and those not so.”—Dr. Smith's Essay, p. 39 and 40.

Or, as more simply recommended in the “Report of the London Fever Institution:—Take equal quantities of powdered nitre and oil of vitriol, (six drachms of each may be sufficient,) mix them in a tea-cup, stir them occasionally with a tobacco-pipe, or piece of glass. The cup should occasionally be removed to different parts of the room, and the fumes will continue to arise for several hours. The proportionate quantity of oil of vitriol should be estimated by measure, not by weight.”—See p. 22.

I am of opinion, that the fumigations by the mineral acids are far superior to all other means. The nitrous or the muriatic vapour for general purposes. The chlorine, or the vapour from salt, manganese, and oil of vitriol, for destroying the contagious matter in uninhabited rooms.—H. D.

But in all these processes the use of vessels or instruments of iron or other metal, must be carefully avoided.

of those, whom the duties of their station, or a spirit of benevolence, may bring near to infected persons, Doctor LIND observes, that “ the danger of receiving infection from the air may be guarded against by properly defending the mouth and nostrils. I have constantly used with success, a roll or dossil of lint dipt in camphorated vinegar, and put up each nostril, so small as not to be perceptible. To persons averse to the smell of camphor, or the putting such dossils up the nostrils, I would advise the mixing the camphorated vinegar with Hungarian water, which, sprinkled on a handkerchief, and held to the nose, will answer the end. The mouth also may be washed with this previous to visiting the sick, and small pieces of dried lemon peel chewed during attendance.*

“ IF, for want of proper precautions, a person be seized with chills or sickness after attending a sick person, he should immediately take a vomit, which seldom or never fails to prevent future mischief. The effects of this antidote are so well known in the hospital, and have been so fully ascertained by repeated experience, that those, who are employed in the fever wards, as soon as taken sick, have immediate recourse to an emetic, and it seldom fails to prevent the disease.† The vomits administered were generally mild, and seldom exceeded ten grains of ipecacuanha. A motion must also be procured.

* Dr. LIND's Essay, p. 344, and 346.

† Id. p. 248.

“ The

“ The patient should afterwards take a sweating or
 “ quieting draught, containing five grains of hartf-
 “ horn, and from 15 to 20 drops of Thebaic tinc-
 “ ture. At other times we have given five grains of
 “ camphor every four hours, with large draughts of
 “ vinegar whey. Eight persons in ten got quite well
 “ by this treatment.—It must always be remembered
 “ in case of infection, to pursue the most vigorous
 “ means as soon as possible; as, in the first hours, as
 “ well as days, less must be trusted to nature than in
 “ any other distemper.

“ IF the symptoms of a fever remain after the ad-
 “ ministration of a vomit; and should the emetic have
 “ been neglected or delayed too long; or should the
 “ patient have been injudiciously treated by sweating
 “ medicines or bleeding, recourse must speedily be had
 “ to blisters: these are to be applied to the back, if
 “ the head and limbs are affected; and to the breast,
 “ if the pain should have seized that part.*

“ I HAVE always, even in the worst infections,
 “ found this method of treatment more successful
 “ than any other recommended by authors, or that
 “ I myself have tried.†

“ WHEN the infection has been removed by these
 “ means, in 24 or 36 hours after the operation of the
 “ blister, the intestinal canal should be a second time

* Dr. LIND'S Essay, p. 250.

† Id. p. 251.

“ cleansed

“ cleansed by giving rhubarb, with a small quantity
 “ of vitriolated tartar.*

“ THESE observations claim the more attention,
 “ as not being only a few remarks made in private,
 “ or on any one particular fever. They are the re-
 “ sult of an attention to some thousand patients, whose
 “ cases are still preserved in the hospital.

“ BUT as the best proof of the efficacy of any me-
 “ thod is the success with which it has been attend-
 “ ed, I would observe, that in eighteen months, only
 “ five persons died out of more than 100 constantly
 “ employed as nurses; of these, one died through a
 “ decay of nature; one had been an irregular, drunk-
 “ en man; one was not treated as directed; and the
 “ other two were victims of their own indiscretion,
 “ having concealed under their beds the cloaths ta-
 “ ken from persons virulently infected.”† ‡

* Id. p. 252.

† Id. p. 255.

‡ As in printing this trifle, it has been merely my purpose to give the opinions of high medical authority, in a popular and compendious form, I avoid entering into questions of preference respecting the means of prevention or of remedy, which appear to remain in doubt between the opinions of their respective authors; still less shall I presume to mingle medical suggestions of my own with those of accepted chemical authority.

But it must strike every reader that, in the last thirty-three years, during which the application of medical science to the relief of human infirmity has been peculiarly active, the practice in regard to this interesting disease cannot have stood still. Accordingly, in directing the popular attention to the present adopted standard of practice, it seems necessary that I should notice an important change which has taken place in the treatment of the low typhus fever;

ALTHOUGH observations collected from so respectable an authority may, without comment, be fully satisfactory to the liberal class of men; yet as their application will, in most instances, fall to the lot of persons, whose habits of life render them so insensible to the disadvantages of filth and bad air, that they will hardly be convinced of the benefits of cleanliness and a free circulation; it may be necessary to enforce the advice by a more familiar explanation of the principle on which it is founded.

fever; originally adopted, on the highly respected recommendation and practice of the late Dr. JAMES CURRIE, of Liverpool; namely, That of exposing the patient to the shock of the affusion of water, by means of a shower bath—or (vulgarly and perhaps more commonly) by the throwing cold water over the person.

That this system has been adopted and continues to be practised with success, we learn from the reports of cases annually given to the public by the patrons and managers of the several fever Institutions, and by the "*Society for bettering the condition of the Poor.*"

"Of the recent improvements in practice, the most beneficial is
 "the affusion of cold or tepid water, which has been uniformly at-
 "tended with extraordinary effects. When the fever patient, in
 "a state of delirium, has been placed, by force, in the shower bath,
 "and the water poured over him, his transition from extreme fu-
 "ry to perfect composure, and from burning heat to temperate
 "warmth, has been apparently miraculous. In some cases, where
 "the patients were sent to the house in an early stage of the dis-
 "ease, a single application of the shower-bath has entirely extin-
 "guished the fever," &c. &c.—See *History of the Loudon House of Recovery*, 1817, p. 14.

Regarding the time for applying the affusion, Dr. CURRIE has stated that, "supposing, as seems generally observable in the nervous or putrid fever, that one exacerbation and one remission takes place in twenty-four hours; the exacerbation usually occurs in the afternoon."—"The safest and most advantageous time for using the affusion of cold water, is, when the exacerbation

EVERY person, who has the care of prisons, work-houses, or other places, where numbers may be confined together, should understand,—that a certain quantity of *fresh*, or *atmospheric air* is as essential to the purposes of animal life, as a certain quantity of food;—that every human being, who is not supplied with such necessary portion in a given time, must die, as surely as though deprived of meat or drink;—and that wherever the quantity of air introduced is less than nature bestows in free circulation, health must be affected in a proportionate degree.—As with regard to food, *ten* persons cannot exist on a quantity which would be sufficient for the support of *one*; so ten persons may suffer by confinement in a room, in which one might remain in health. Therefore the draft or inlet of fresh air should be constantly increased, in

“ is at its height, or immediately after its declination has begun ;
 “ and this has led me, almost always, to direct it to be employed
 “ from six till nine in the evening. But it may be safely used at
 “ any time when there is no sense of chilliness present, when the heat of
 “ the surface is steadily above what is natural, and when there is no ge-
 “ neral or profuse perspiration.”

“ These particulars are of the utmost importance, as affusion
 “ must not be used in the cold stage, nor when the heat is below the
 “ natural, nor in the sweating stage.

“ Under these restrictions the affusion of cold water may be used
 “ with perfect safety in the low contagious fever of this country.
 “ In the first stages of fever it appears, very generally, to cut short
 “ the disease almost instantaneously.”

For this, and further instructions in the use of affusion, See “ *Me-
 “ dical Reports, on the Effects of Water, cold and warm, in Fever.—*
 “ By JAMES CURRIE, M.D. and F.R.S.” Published in 2 vols. by
 CADEL and DAVIES, in 1797 and 1804.—See (also) *Medical and
 Physical Journal*, for November, 1801.

proportion

proportion to the numbers destined to breathe in any apartment.

Cleanliness of person in those confined, is as essential to health, as a supply of fresh air. The perspiration of the human body, when absorbed by cloaths, becomes a mass of putrefaction; and the salutary or vivifying properties of the air are destroyed by the putrid effluvia issuing therefrom. It can need no argument to prove, that suffering the air to be polluted before it is breathed, will be equally injurious as the not introducing it in sufficient quantity.

THE distemper arising from either or both these neglects, has been called the *gaol*, the *hospital*, or *ship fever*,* and being generated in a high degree, becomes infectious, as before described. The means of guarding against it are so extremely simple, when it is not necessary absolutely to confine persons to particular apartments, that where it is generated within a *parish workhouse*, the evil must arise from the neglect of those persons who have the care of it, in either not providing a sufficient circulation of air, or in not enforcing a due attention to cleanliness.

* As our ships and prisons are no longer the distinguished sources of this contagion, these special denominations seem to be forgotten. This creature of putrefaction is now more commonly known and feared under the generic name of Typhus; having its source in poverty and want; existing in filthy cloaths, and damp unventilated dwellings. And, being once generated from these causes, it must be diffused where communication is not cut off between the diseased and the healthful.—Ed. 1817.

IN *prisons* the case is widely different. The preservation of health in *them* must depend on the possibility of introducing air, and separating the prisoners, *consistent with a due regard to their safe custody*; and how far these two objects are reconcileable to each other, must depend on the system of regulation attainable from the construction of the prison. It is therefore incumbent on the parish-officers, to pay an early attention to those disorders that appear amongst persons returning from prison, if they in any degree regard the public health.

BY the great increase of crimes within the county, the number of prisoners has become prodigiously multiplied beyond former times. The loss of the American colonies has deprived the nation of its vent for transportable convicts, and by an act of the 19th of his present Majesty these are ordered to long terms of imprisonment in lieu of transportation. The legislature, in passing this law, foresaw the inevitable consequence of thus crowding the common gaols; and, therefore, by the same statute, it is expressly required, “that proper
“ places shall be provided in every county for their im-
“ mediate reception, safe custody, and employment.”

THE latter part of this statute remains unattended to; the number of convicts, of this description, must therefore accumulate in our prisons, and disease be an infallible result.

So great, indeed, is my faith in a system of regularity and cleanliness, that wherever it can be enforced

to its full extent, I believe it possible that the disease, although generated, may be prevented from rising to a state of contagion.* But this effect requires a strict police amongst the prisoners, and a regulation in the conduct of their keepers, which is not attainable under the principle of construction of our present prisons.†

FROM the known subtilty of the envenomed effluvia, and the impossibility of removing prisoners, so as effectually to fumigate the apartments, it is hard to pronounce that the seeds of distemper, once generated, can be completely eradicated. The utmost

* IT is indeed most highly satisfactory—after 16 years' experience and observation—to have been enabled to state before the county assembled, that my faith in the effects of this system had been completely justified.

“ The physical advantage intended to be produced by rules enforcing cleanliness of person and apartment was not only to preserve individual health, but to put a stop to the generating of disease from the opposite state.

“ By reference to my early addresses to the public on this subject, it may be seen that our prisons were dangerous to approach; that hazard and apprehension filled the mind of every man whose duty led him to attend the Criminal Court of Justice; and that a desolating typhus fever, carried from the gaol by prisoners returning to their homes, raged in half of the villages of the county.

“ We have perfectly succeeded in our regulations as directed to this point. We have exterminated the gaol fever from our prisons. Not a single instance of contagious disease has shewn itself within the walls of these prisons during the 16 years now enquired into by your survey.—I further assert, without fear of contradiction, that not one inhabitant of this county has received infection of a contagious disease by means of a person returning from the gaol or the other prisons.”

See *Report on the Practical Effects of the System of Prison Regulation established in the county of Gloucester*, printed 1809, p. 80. Ed. 1817.

† In 1783.

that

that can be done, under such circumstances, is, to stop its progress on every fresh appearance; and, by attention to the persons of those prisoners who are to appear on trial, to prevent danger to the public in their necessary attendance on the courts of justice. By the active assistance of our present Sheriff, so much has been effectually provided for. But with regard to such as are confined for terms of punishment, a complete security to the public is not within the power of the sheriff or his officers;—if the limited time of imprisonment should expire during the sickness of the culprit, he cannot be detained till his recovery; nor is it to be expected, that, once at liberty, he will *himself* think of practising the necessary precautions on his return to his home.

IT is not the design of this publication to suggest weak and groundless fears—it is my intent, by exposing what is real danger, to prove what is real security. On this, as on other subjects, there exist absurd and ridiculous apprehensions, as well as culpable and negligent inattentions.

To the false alarms of apprehensive men, may be attributed the very existence of all that is actual danger to the public; from a want of a due and timely inspection into prisons and workhouses, the keepers and governors become neglectful of those precautions which are necessary to the preservation of health:—Relying on the general effect of such apprehensions, it is no uncommon artifice in those who wish to screen their abuses, to intimidate gentlemen from inspection by

amplified accounts of danger.—The author on whose judicious observations I have grounded my reasoning on this subject, has sufficiently explained the small degree of risk in attending to this particular duty, provided the rules of cleanliness and air are steadily enforced: Mr. Howard has continued, through a long course of years, to visit the sick in every dungeon of Europe, and has done it without infection. Our present sheriff has the pleasing satisfaction of having constantly inspected the gaol in person without any ill consequences to himself:—And Dr. LIND, says, “that he never himself found the least symptom of infection, altho’ for several years he daily attended persons labouring under contagious diseases.”*

* REGARDING the sphere of febrile contagion, Dr. SMITH has observed, “The most highly contagious fevers that occur in our hospitals, do not affect the patients, *in general*, lodged in the same ward, as the communication of infection was, in general, easily prevented by the means I employed.

“The risk is trifling of contagious fevers being propagated in the open air, still less from one room to another.

“The fumigation with the nitrous acid, if properly employed, not only destroys contagion, but greatly improves the atmospheric air, and it effectually corrects all offensive smell. I use the diluted marine acid for washing the floors and bedsteads; and put marine acid into the pails of cold water used for immersing the foul linen.

“In bed-chambers, and private apartments where there is a contagious disease, I generally keep up a constant fumigation, by means of a lamp, over which is placed a china cup or saucer with oil of vitriol and nitre; an ounce and half or two ounces of each being sufficient for twenty-four hours.

“Of all those contagions which are propagated from one diseased person, or his cloaths, to another person, the sphere of the deleterious power is in general extremely limited. I would venture to ensure even the nurses and hospital assistants, in any situation, if they could be induced to use the proper precautions,

“and

IN order to facilitate an effectual application of the means I have generally suggested, I shall collect the whole into such simple rules of proceeding, as may be easily practised either by an individual family, or by the officers of any parish who may think proper to enter on a general regulation.

Rules for Private Families.

First, IT must be taken as an established fact, that the contagion may be suppressed in all cases, where a free use of fire, air, and water, with the means of fumigation, can be obtained. But, on the other hand, if any particle of cloaths or furniture, used by the pa-

“ and if the hospital be properly fumigated; the wards sprinkled
 “ with diluted marine acid; the dirty linen immediately immersed
 “ in pails, filled with cold water, impregnated with marine acid;
 “ the soil-tubs and chamber-pots quickly removed and washed with
 “ the same; the bedsteads washed, every time they are empty,
 “ with the diluted marine acid; and the bed-cloaths fumigated with
 “ the nitrous vapour.

“ In hospitals crowded with sick, it is necessary to fumigate
 “ every part twice a-day. But in private practice and common
 “ cases, one, two, or three fumigating lamps, by which a constant
 “ fumigation is kept up night and day, so placed as that the va-
 “ pour shall pass over the beds of the sick, are perfectly sufficient.

“ In this manner I have not only stopped the common contagion
 “ in the hospital and in private practice, but I have equally suc-
 “ ceeded in preventing the *scarlatina anginosa*, or putrid sore throat,
 “ from being communicated to the rest of the family living under
 “ the same roof.”—See Dr. SMITH'S *Letters to Dr. PERCIVAL*, in his
Essays. p. 217—220. See further on this subject *Letters to Dr. PER-*
CIVAL, by JOHN HAYGARTH, M.D.—FOR CADEL and DAVIES. 1801.

tient

tient during sickness, be again used after recovery, without fumigation, it is almost a certainty that he will be again infected; more particularly, if the cloaths have been laid by for any length of time.

It will rarely happen, that any dangerous degree of infection will be taken imperceptibly. It is not inherent in the air; and, therefore, when the effluvia of the breath, the body, or the cloaths, are sufficiently strong to produce infection, it will generally be perceptible to the smell. It is described “as an earthy disagreeable smell, which, in strong cases, affects the stomach with a nausea, and immediately produces shivering and sickness.” It appears to be the opinion of Dr. LIND, that a vomit taken without delay in this stage of the disease, will probably stop its further progress; if not, and the shivering and chills continue, it will then be proper to proceed to blisters, and the other means before mentioned.

WHEN an individual is seized, he should be separated as much as possible from the rest of the family. He should be placed in the most airy, but, at the same time, the driest room that can be provided; and, if such room be situated at the top of the house, persons living in the lower apartments will not be liable to receive infection. Every article of furniture that is not absolutely necessary, should be taken out of the room; and (if in winter) a wood fire should be made. When the patient has taken the infection with such a degree of malignity as to resist the power of the greater antidotes, it must in some measure have its course; yet the violence

violence of the symptoms may be allayed by a strict adherence to rules of cleanliness; by a proper introduction of air; and by immediately removing the shifted cloaths, or other substances, which, by remaining in the room, would pollute the air, and render it unfit for respiration.

IN apartments where there are not windows opposite each other, holes should be made in the door or wall opposite to the window, so that a constant draught may be kept up, but in such a direction, that the patient may be placed out of the current; and observe, that wherever it is intended to procure such a ventilation, the inlet for air must be made lower than the outlet. These circumstances are not only material to the patient, but they are of the utmost importance to the attendants, who, by observing them, may probably either totally escape infection, or be but slightly infected.

FOR their greater security, the chamber should be frequently fumigated with a purifying smoke or vapour, arising from the substances afore recommended.

“ THE explosion of small quantities of wet gun-
 “ powder in a sick room, or the steam of warm cam-
 “ phorated vinegar, are *extremely beneficial*.*

“ WHERE the infection is very powerful, those who
 “ are *particularly* apprehensive of danger will do well

* Dr. LIND, p. 234.

* not to visit the sick with empty stomachs, but after
 “ eating a slight breakfast; for greater precaution,
 “ a morsel of bread dipt in vinegar, or a little of the
 “ bark-bitter, may be taken before entering the
 “ apartment.”*

THE smoking or chewing tobacco is an admirable preservative, not only for persons who act as nurses, but for all who are liable to be in the way of infection; but they should be attentive not to swallow their spittle at that, or indeed at any other time in an infected room.

EVERY use of garlick and vinegar is highly recommended. “ Fatigue of body, drunkenness, and irregularities of every sort, should be carefully avoided. † The stools of the sick are very infectious; and “ the breath of a diseased person is very dangerous, “ particularly if in a dying state.” Those who attend them, therefore, should avoid receiving the breath immediately into the mouth and nose.

DR. LIND is of opinion, that a recent cold corpse is not apt to communicate a taint; but it should not lie long after death. †

WITH respect to the more minute precautions advisable for such as may be called on to attend the

* Id. p. 144.

† Id. p. 148.

‡ DR. SMITH observes, that “ he never knew contagion propagated by a dead body, even from the dissection of it, unless by “ inoculation.” P. 218.

sick in the line of their profession, Dr. LIND has laid down a system that he has himself found completely effectual.*

THE conduct of the patient on his recovery, is of the utmost importance; for on care and attention at this time, depends his own future safety, and that of all about him. When the fever and other symptoms disappear, he should be cleaned in a tub of warm water, with a little vinegar; his apartment should be fumigated, and washed with new flaked lime. After which, he must wear no cloaths, and use no article of furniture, that has not been previously fumigated.

“ THE merely exposing to the air such goods or
“ cloaths as are suspected to harbour infection, is to-

* See DR. LIND, p. 146.

See also DR. HAYGARTH'S *Rules to preserve from danger, Medical, Clerical, and other Attendants upon infectious Fevers.*

“ It may be proper previously to observe, that an infectious fever, in a
“ small, close, and dirty room, is caught by a very great proportion of man-
“ kind; not less than 22 out of 23, or a still higher proportion; but in
“ a large, airy, clean apartment, even putrid fevers are seldom or never
“ infectious. When this poisonous vapour is much diluted with fresh air,
“ it is not noxious.—From a large collection, and an attentive considera-
“ tion, of facts relative to this distemper, have been formed the following
“ rules:

“ 1. As safety from danger entirely depends on cleanliness and
“ fresh air, the room door of a patient ill of an infectious fever,
“ especially in the habitations of the poor, should never be shut:
“ a window in it during the day ought to be frequently opened.
“ In bad cases, a current of air, between a window and door, both
“ wide open, may be proper; if the air be very cold or damp, the
“ curtains of the patient's bed may be drawn close during this ven-
“ tilation, should peculiar circumstances require such caution.—
“ These regulations would be highly useful, both to the patient and
“ nurses;

“ tally insufficient.* All suspected substances must
 “ be first fumigated in a close room, before they are
 “ spread in the air. And here it may be proper to
 “ observe, that the linen of the sick, or such other
 “ cloaths as admit of being washed, ought never to
 “ be put first in warm water, as it is dangerous for
 “ the person washing to receive the steam.”

“ IF (says Dr. LIND) the necessary means of cleanli-
 “ ness and pure air do often fail in removing or annihili-
 “ ating the secret source of this disease, it gives me the

“ nurses; but are particularly important previous to the arrival of
 “ any visitor.

“ 2. The bed curtains should never be close drawn round the pa-
 “ tient but only on the side next the light, so as to shade the face;
 “ except while there is a current of air between a window and door.

“ 3. Dirty clothes, utensils, &c. should be frequently changed,
 “ immediately immersed in cold water, and washed clean when
 “ taken out of it.

“ 4. All discharges from the patient should be instantly removed.
 “ The floor near the patient's bed should be rubbed clean every day
 “ with a wet mop, or cloth.

“ 5. The air in a sick room has, at the same time, a more infec-
 “ tious quality in some parts of it than in others. Visitors and at-
 “ tendants should avoid the current of the patient's breath,—the
 “ air which ascends from his body, especially if the bed curtains be
 “ closed,—and the vapour arising from all evacuations. When
 “ medical or other duties require a visitor to be placed in these si-
 “ tuations of danger, infection may be frequently prevented by a
 “ temporary suspension of respiration.

“ 6. Visitors should not go into an infectious chamber with an
 “ empty stomach; and, in doubtful circumstances, on coming out
 “ they should blow from the nose, and spit from the mouth, any
 “ infectious poison which may have been drawn in by the breath
 “ and may adhere to those passages.”—*Letter to Dr. PERCIVAL, on
 infectious Fevers, &c.* by J. HAYGARTH, M.D.—FOR CADEL and
 DAVIES. 1801.

* DR. LIND, p. 225,—236.

“ highest

“ highest satisfaction to assert, that I seldom or never
 “ knew a proper application of fire and smoke to be
 “ unsuccessful in purifying all tainted places, materials,
 “ and substances.* I never heard of any ship, after
 “ having been effectually smoked, but became imme-
 “ diately healthy ; and if afterwards they turned sickly,
 “ it was easy to trace the sickness to galls, or to some
 “ other infected ship.”

IN order effectually to fumigate any house or chamber that has been inhabited by a sick person, the doors, windows, chimnies, and every other aperture, should be stopped, and the bed cloaths and furniture hung round in such manner as to receive the full effect of the vapour or smoke. A charcoal fire should then be laid, and a quantity of pounded brimstone put betwixt the several layers of charcoal, which, when lighted, should be placed in the room ; but the person placing it must make his escape before he draws his breath. The room should be kept close shut up for not less than ten hours. †

* Id. p. 227.

† So very deleterious to animal life are the effects of the vapour from brimstone on burning charcoal, that, to avoid the possible fatal consequences to the person ignorantly or carelessly preparing these substances for fumigation,—it seems rather adviseable to substitute the undisputed and less noxious vapours produced from the other substances recommended, which are as easily and cheaply obtained.—G. O. P. Ed. 1817.

To destroy contagious matter in a room, *not inhabited*, the vapour from a mixture of 3oz. of common salt, 2oz. of manganese, and 2oz. of oil of vitriol, mixed with half its weight of water, is the most powerful agent. But this vapour is offensive to respiration, and, therefore, not proper in *inhabited* rooms —H. D.

THE

THE smoke of common wood or peat fire will not only lessen the violence of the infection, but is an excellent protection *against receiving it*. Poor cottagers, therefore, who are obliged to continue in the neighbourhood of the disease, will do well to make as much smoke from such substances in their houses as they can bear.*

Rules for a General Undertaking.

FROM ignorance of the subtile nature of this distemper, and from incredible inattention, it is in some places become so universal amongst the poor, that there can be small hopes of its being eradicated by the mere efforts of individuals so accustomed to filth, and so discouraged by misery, as to be incapable of the necessary exertions. In such cases, it must surely be worthy the attention of the parish officers to undertake a plan of general relief, instead of thoughtlessly crowding the infected patients into workhouses, with whole families that are yet in health;—instead of sending them from thence to daily labour amongst their comrades, loaded with pestilence, they must at length be convinced that motives of interest as well as of humanity recommend their adopting a scheme sufficiently spirited and general at once to stop the contagion.

* Smoke from a wood or peat fire is good. It abounds in pyriligneous acid, or empyreumatic vinegar.—H. D.

THAT cold indifference observable in the rank of men, to whom the more liberal have in too many instances devolved the care of the poor, it is not necessary to impute to inhumanity or hardness of heart. Inattentive to causes, it is but too natural for them to consider the miseries of their unfortunate fellow creatures as the scourge of an offended Deity, or as necessary attendants on the human state, which have their end, as their beginning, in the ordinary course of things.

FROM this calm state of unconcern it is necessary to awake them. Where contagion is become general, it is a dangerous confidence to await the period of its self extinction. Such an event is doubtless within the power of an Omnipotent Providence ; but, as it is not within the common course of natural effects, it is a thoughtless presumption to rely upon it.

“ MANY countries (says Dr. LIND) might in all probability have escaped the dreadful scourge of pestilence by taking proper measures on its first appearance ; if on such occasions the incredulity of a few had not generally been so great, as at its first breaking forth to deem it a fever void of infection, because no marks of contagion appeared on the dead bodies, because its progress was slow, or because it raged chiefly amongst the poorer sort, and might be owing to poverty, corrupted blood, &c.”*

WHEREVER it is thought necessary to act on a general plan, the first object to be attended to, is “ the

* DR. LIND, p. 294.

“ cutting

“ cutting off all communication between the healthy
 “ and the sick, so as to confine the infection to a nar-
 “ row spot, where by proper arrangements it may soon
 “ be totally extinguished.”*

“ WHEN the sick are collected, they should be ar-
 “ ranged into two classes,—the slightly infected, and
 “ those with constant fevers.† It seldom happens in
 “ the gaol distemper, that one-third of the patients in-
 “ fected are so ill as to be totally confined to bed, ef-
 “ pecially after having been blistered. By making
 “ this separation, the sphere of contagion will be
 “ greatly contracted; since I am inclined to believe,
 “ that patients with a very slight infection, when kept
 “ perfectly clean, and in well aired apartments, do
 “ not communicate the disease.”

IF it be designed to put an effectual stop to the pro-
 gress of the distemper, where it is already generally
 diffused, a *reception-house* must be prepared, sufficient
 to contain the infected without crowding them too
 near each other. In summer there can be no difficulty
 in finding a building suited to the purpose;‡ any large

* Id. p. 349.

† Id. p. 351.

‡ SINCE this pamphlet was originally printed, the system here recommended has been adopted in many cities and towns on a very extensive scale, by the building or providing houses under the denomination of Fever Wards, at the expence of private subscription, under the superintendance of individual philanthropy; and, medically assisted, (at great hazard of life,) by a branch of that gratuitous professional beneficence, to which the medical charities of these kingdoms are so peculiarly indebted.

Establishments of this kind were first instituted at Manchester, and Liverpool. Similar institutions have since been established in London, Dublin, Cork, and Waterford.

house without windows, or even a barn, provided it be well tiled, situated on dry ground, and in an airy spot, may, with small alterations, be made effectually commodious. Into the wards, as little furniture should be admitted as can possibly be dispensed with. Adjoining to it there must be placed a boiler for warming water, and bathing tubs for washing the sick. There must also be provided a small close room or stove, constructed without any aperture but the door; and round the walls must be fixed pins for hanging infected cloaths, bedding, &c. In the middle should be placed an iron pot or grate for charcoal fire and sulphur fumigation; * which, though small, if constantly kept burning, will purify the infected cloaths of a great number of persons.

It would tend greatly to speedy cure, and to the safety of the attendants, if a number of sick or hospital dresses were made of the cheapest washing materials.

THE hospital, stove, boiler, &c. being prepared, success in the undertaking will depend on a strict observance of rules for cleanliness of person and apartment, and on the introducing a regular supply of dry and wholesome air. Nothing will so much tend to promote such an observance, as duly explaining to the attendants, that the safety of their own situation, as well as the recovery of the patients, depend upon it.

* If the nitrous, the muriatic, or the *chlorine* fumigations be substituted, of course the pot or other vessel used for the purpose must not be of iron or other metal.—Ed. 1817.

THE attendants should be steady, sober, and determined persons ; but if (notwithstanding what has been said) a fear of danger should deter the healthy from the office, perhaps they may be chosen from the slightest infected, or recovering patients.

THE straw of their mattresses, as well as their linen, should be frequently changed, and on no account suffered to remain in the room after shifting. The openings of the room should be so regulated as to procure by night and day such a current of air as may be sufficient to move the flame of a candle ; and in wet or damp weather a fire of wood or peat should be made.

SHOULD any disagreeable smell be perceptible, it would be adviseable frequently to fumigate the apartments with the steam of camphorated vinegar ; by burning cascarilla bark on wood embers, or by firing small quantities of gunpowder,* observing to stop the windows and other apertures during the operation.

ON admission, the infected should be stripped and washed with warm water and soap, and the hospital dresses delivered to them : their own cloaths should be carefully fumigated in the stove, and laid by for their use on recovery ; but if not worth preserving, they should be immediately burnt.

DURING the absence of the sick from their houses, proper persons should be appointed to see them smoked

* Or, now, rather by producing the nitrous vapour. — Ed. 1817.

and fumigated; and where the infection has remained long in them, they should be washed with new flaked lime.

As soon as the patients recover, they should be again washed in warm water, with the addition of a small quantity of vinegar; and after their own cloaths are returned to them, they should go no more into the ward. On every such removal; the bedding and cloaths should pass a thorough fumigation, before the reception of others,

By a proper attention to these simple directions, the most universal pestilence may be eradicated, provided it be undertaken during summer. But it must be evident, that in winter the means will be infinitely more expensive and the effect less certain; in severe cold and damp weather, barns and open buildings will no longer be suited to the purpose; at least not without so much fire and fitting up as will greatly augment the expence.

IN summer, the natural disposition of people to live in open air will greatly promote the design; whilst in winter, the poor, crowding together into their miserable cottages, and (in want of fire) stopping out every approach of outward air, any remaining spark of disease will infallibly be rekindled.

I AM conscious that what I have recommended may appear a great undertaking. I readily admit, that the trouble of conducting it will be considerable; but set-

ting aside the consideration of humanity, and resting its motive on the single point of œconomy, I am bold to say, that if the disease has generally diffused itself in a populous parish, the undertaking must answer to the public interest.

If the cloaths are made of the cheapest materials; if the purifying stove is worked only with charcoal fire and brimstone; or if the other fumigations used are produced from the cheap substances recommended; and if the whole be purchased at the best hand, the collective expence of such an effort will bear no proportion to the accumulating burthen of relieving diseased families, and the constant future maintenance of children, who become orphans by the death of parents.

To the motive of general policy may be added the consideration of individual safety. For although the filthy and miserable are most obnoxious to the contagion, they are not exclusively liable. It has been, and may again be, the fate of many persons in affluent life to become its victims.

I may add, as a motive, which, though last, is, I hope, not least in influence—the satisfaction of preserving our indigent fellow-creatures from an addition to their habitual miseries; which (unlike many others they suffer) is rarely imputable to their own indiscretion.

G. O. P.

FINIS.

