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CHOLERA:

ITS

NATURE, SYMPTOMS, AND TREATMENT.

BY JOSEPH AYRE, M.D.,

PRINCIPAL PHYSICIAN TO THE HULL INFIRMARY; AND LATE OF GUY'S HOSPITAL, LONDON.

TO WHICH IS ADDED,

THE SANATORY REGULATIONS

OF THE

BOARDS OF HEALTH OF LONDON, EDINBURGH AND DUBLIN.

DESIGNED FOR POPULAR INFORMATION AND GUIDANCE.

[COMPILED FROM THE PAGES OF THE "LONDON LANCET."

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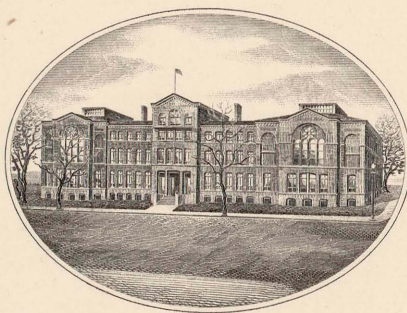
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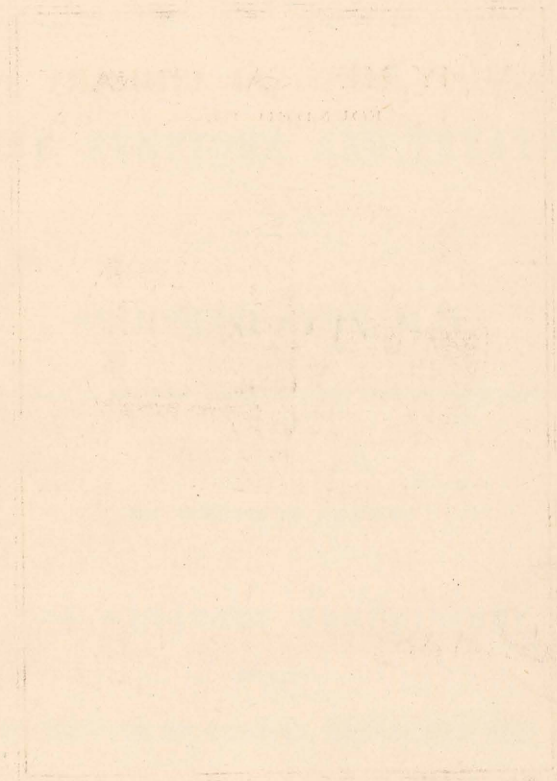
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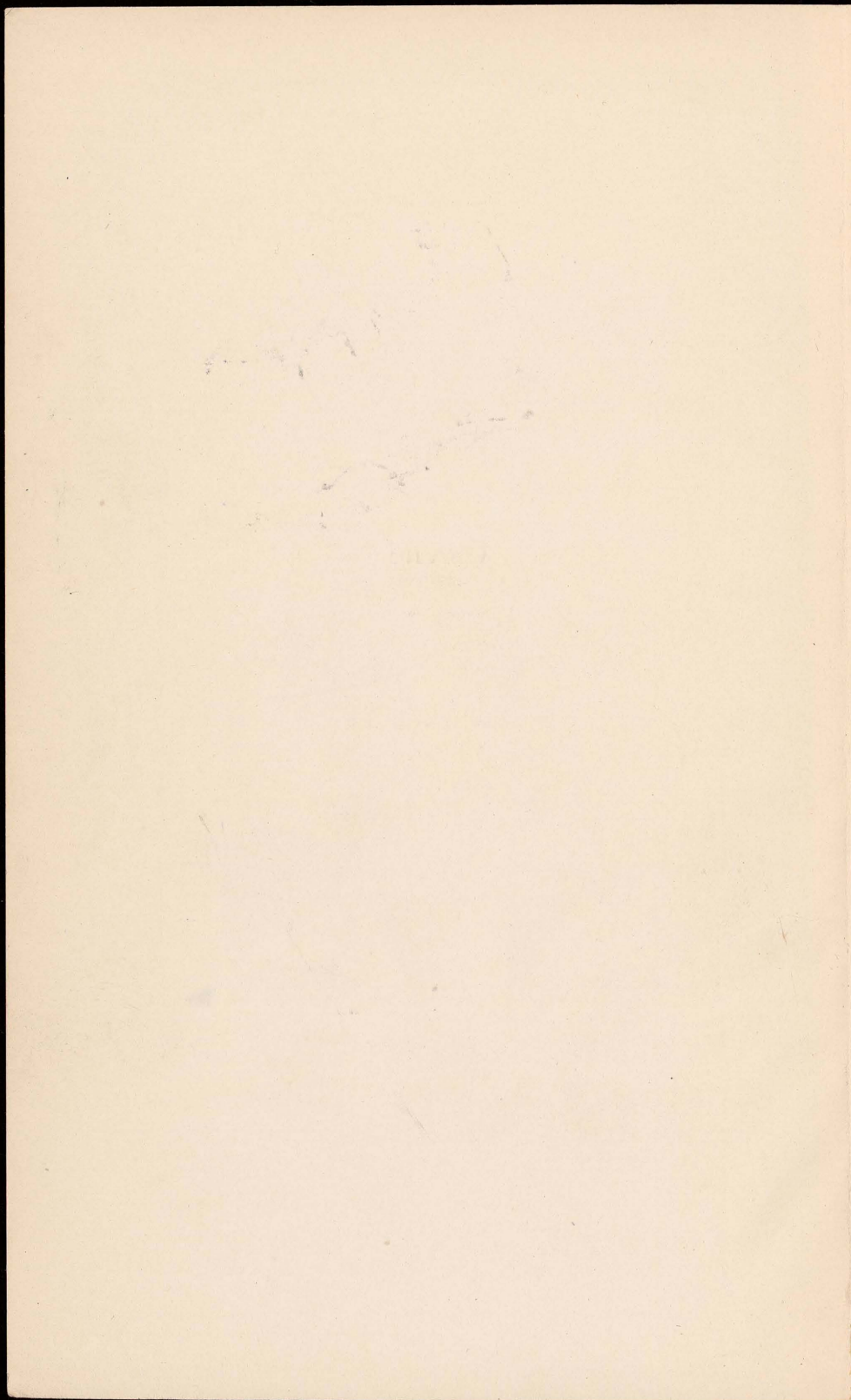
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THE PATHOLOGY AND TREATMENT

OF

CHOLERA, &c.

[LATELY COMMUNICATED IN A SERIES OF PAPERS TO THE LONDON LANCET.]

THE PATHOLOGY OF CHOLERA.

In the notice I am about to take of the pathology and treatment of cholera, I may observe that the various hypotheses afloat contradictory as they are to each other, are substantially the same as were held and acted on when the disease visited this country (England,) in 1832. With many medical writers there appears to prevail the belief that there is something peculiar and hitherto unmet with in the complaint, and that its proximate cause must be sought for in conditions of the system which have newly arisen, and which are unlike all others that are known. Examinations made after death demonstrate internal venous congestion, and confirm the evidence afforded of it by the external appearances of it during life. The blood, when drawn, is found to be of a very dark hue, and deficient in its proportion of water, and of some of its saline ingredients. An analysis also made of the discharges from the stomach and bowels, exhibits some of the principles supposed, and perhaps justly, to be lost from the blood; and hence has arisen the theory, and it is one in no small repute, that the proximate cause of the disease must consist in some noxious changes in the chemical constitution of the blood, and in a loss of some of its principles, carried off by the discharges from the stomach and bowels; and that the collapse, with its train of morbid symptoms, is the consequence of the change so wrought in the blood, and of the fluid loss sustained by it. Upon this theory was founded that practice, which was called saline, and which consisted, and under certain modifications still consists, in giving certain neutral salts by the mouth, and, as once adopted by some, in injecting them, in solution into the veins, and with the avowed design of correcting the cause of the disease, and of repairing the effects of it. To these extreme means are now to be added, or rather,

by most writers, to be substituted, other but analogous modes of treatment, having the same indications in view. That the disease, however, with the collapse, which forms so prominent a part of it, does not originate from, and is not perpetuated by, any such chemical or other changes in, or losses from, the blood, may be shown by the following considerations :—

The premonitory diarrhœa, which if neglected runs into the disease, and in a multitude of cases forms the incipient, or first stage of it, is often directly induced by irregularities of diet, as a large indigestible meal, and may be arrested, and the full development of the true disease prevented by remedies of a common kind, and which have confessedly no power to prevent or correct any change in the condition of the blood. The means also which act beneficially in removing the collapse, and in stopping the profuse discharges from the stomach and bowels, have no chemical properties by which to effect this change. In many cases they act too rapidly to admit of the supposition of their counteracting any putrid or other noxious process going on in the blood, or any such condition wrought in it. As an instance of such effects, emetics may be quoted, which, when taken, are instantly ejected from the stomach, and preclude the possibility, whatever may be their composition, of effecting any change in the blood. It is a fact, also familiar to all who have seen much of the disease, and have, at the same time, witnessed recoveries from it, that patients often rapidly and perfectly recover from a state of collapse, in whom the skin is livid and cold, and even the pulse extinguished at the wrist, and after evacuations the most profuse, without a single remedy having been used that could have the slightest tendency to restore to the blood any one of its constituent principles, or repair the loss to the system, and which is assumed to be sustained by the discharges from it, and accounted a cause of death from the debility which they are thought to occasion. In several cases it has occurred to me to see patients able to walk out of the hospital, entirely convalescent, and with little show of weakness, who three or four days before were in a pulseless collapse, and with the most profuse discharges from the bowels of the rice-water evacuations, and whose recovery from that state was effected by means that were in no degree directed to restore the strength, or correct any noxious state of the blood. In many diseases there are changes occurring in the vascular system, and fluids are poured out on the mucous and serous surfaces, and which, of course, are supplied from the blood, but no one has ever thought of accounting the secretions poured out as anything more than the effects of a disease. The blood of a person destroyed by lightning does not coagulate, and it is thereby proved to have undergone some change, but the change so produced is obviously nothing more than an effect of the same cause, which, acting on the brain and nervous system, produced the death. In dropsies, there is a copious serous secretion, and in the higher grades of inflammation pus or coagulable lymph are poured out, but no pathologist has ever considered the analyses of these secretions as a means by which to arrive at a knowledge of the proximate cause of the diseases in which they are found, or as proving that such cause consists in some change in the chemical condition of the blood.

Yet there would be nothing more illogical in this procedure, than there is in deciding upon the proximate cause of the cholera from a chemical examination of the blood of a patient in the disease, or of the discharges poured out from it. But if the darkened state of the blood, which arises simply as a consequence of the congestion presently to be noticed, or the serous discharges from the stomach and bowels, which are said to be saline, and which are derived from the same pathological conditions, be a cause of the disease, or, in other words, the essence of it, how is the consecutive fever, which is to be regarded as a part of the disease, to be accounted for on this hypothesis, since upon the supervention of the fever, the watery dejections, and the lividity and coldness of the surface, and the other symptoms of collapse, with the congestion which caused them, disappear, and an entire change is produced in the appearance of the disease and in the indications for its treatment? It is also deserving of remark, that instances of the disease occur in which there are no fluid discharges, and in which, therefore, the collapse that takes place, even to a fatal issue, must arise from some cause distinct from this the assigned one; and if in one case, as I have witnessed, so it might in many, and not merely so, but in all, thus disproving the reality of the assumed cause in any one.

That there may be, and indeed that there are, in the malignant cholera important changes wrought in the blood, and profuse evacuations taking place from it, are points to be admitted; but these changes in it, and losses from it, are only the effects of the disease, and not the disease itself; and the remedy, be it what it may, must be directed not merely to obviate this state, or the consequences of it, but the pathological condition or proximate cause which produced it, and is perpetuating it: and here it may be observed, without anticipating what is hereafter to be advanced on this subject, that various excrementitial matters must be retained in the circulation pending the duration of the collapse, as the consequence of the suppressed secretion of the liver and kidneys, and which may be sufficient to account for the altered qualities of the blood, without having recourse to other causes to explain them, and much more, without assigning such changes in it as the efficient causes of the complaint. So far, indeed, is the interruption to the secretion of the kidneys in any way a cause of the collapse, that though it never fails to be present as a symptom of it, it appears, formidable as it should be thought of, to be amongst the least considerable of the symptoms; and it must be notorious to all who are conversant with the disease, and have conducted its treatment, that it continues often as a symptom when all the severer ones of the collapse have disappeared, and when the recovery of the patient has become assured. I have often witnessed the suspension of the secretion from forty to fifty hours, and in one patient for the long period of seventy-two hours, and in all these cases it was the last symptom pertaining to the collapse that yielded. But to proceed. The function of life is carried on and maintained by the aggregate actions of the organs of the body; and if the supply of healthy blood be necessary to them, for the maintenance of their healthy action, the supply of blood itself, and the maintenance of its healthy state, are from and by them; and every morbid change that is wrought in it must be by the lesion of one or more of the organs of the

body. The altered state, therefore, of the blood, and the other changes caused by the disease, are the effects of certain derangements in the functions of one or more organs of the body, the functional disturbances thus occurring in a consecutive series; and the true course of inquiry therefore is, as to which of the functions is primarily affected, and by whose disturbance the successive derangements of the rest are induced.

Now there is one condition which is *uniformly* and *conspicuously* present in malignant cholera, and is, indeed, characteristic of it, being present when the disease is present, and absent when the disease is absent—namely, a suppressed or suspended secretion of the bile, as shown by the diminution, and, at length, the total disappearance of it in those watery discharges which are poured so profusely from the stomach and bowels. The very term, indeed, of cholera, though somewhat ambiguous, which has been given to it, denotes a disturbance of the functions of the liver, and implies a resemblance to the disease so named, in which this affection is conspicuous. Nor is this resemblance limited to the name, for whoever has had much experience in the two forms of the disease, cannot fail to have remarked the most intimate resemblance between them. In malignancy, indeed, the Asiatic greatly exceeds our own; but epidemics of the same disease in different years, and even cases of the same epidemic in the same year, as was strikingly exhibited in the epidemic cholera of 1832, vary from each other in their intensity, without the deviation being at all dependent upon the nature of their proximate cause, or demanding any material variation from the prescribed indications of cure. The epidemic cholera, which prevailed with unusual severity in the years 1816–17, and which prevails more or less every year, presented numerous instances of extreme severity, not to say malignancy, and were fully equal in this respect to many of the cases of the present epidemic. The general character of the disease assumed indeed a milder grade, but it ran the same course of consecutive fever when not arrested, as the present disease; and were the collapse of the present epidemic the exception instead of the rule, as it was in that of 1816–17, the resemblance between them would have been complete.

But the identity of the Asiatic disease with the cholera common to this country has been denied on two principal grounds. The first of these is, that while in the former there is confessedly a stoppage put to the secretion of the bile, there is, in the latter, on the contrary, essentially present a morbidly increased secretion of it; and the second, that the sudden and sometimes alarming failure of the vital powers attendant upon the severer forms of the European disease, is solely the result of the exhaustion induced by the vomiting and purging. That the view thus given of the nature of the common cholera is not correct, either of itself, or as distinguishing it from the malignant form, may be shown by the following considerations:—

It is a fact, and one familiar to all who have either suffered from cholera, or attended others under it, that the vomiting and purging belonging to it may exist for many hours before the appearance of bile, and of course before there is a copious secretion to cause it. In the same way, the sunken and exhausted state, amounting in many cases to the true collapse, is met with simultaneously with the first occurrence of vomiting, and often

before the purging has commenced, and even sometimes without being attended or followed by it. It is also well known that the most copious vomitings occur from sea-sickness, and the most profuse dejections of watery secretions from the bowels under the use of drastic purgatives, and which often greatly exceed what are met with in the English cholera, and yet without any appreciable diminution of the strength, or signs of collapse. The prostration, in fact, of cholera comes on, in most cases, very suddenly, and consentaneously with the vomiting and nausea, and often before the purging, and running its course, as I have more than once witnessed, even without it; and in the same manner it passes away, or greatly lessens, upon the discharges becoming colored with the bile. It may be also added, that there is no correspondence, in the degree of intensity of the vomiting, between the cases of a mild kind, and those of the severest forms of it, in which there is the most alarming failure of the vital powers.

But it may, perhaps, be conjectured that the view here given of the nature of the English or European cholera, has been derived from what has been known concerning the Asiatic type of it; and that thus the terms of collapse and consecutive fever, so emphatically due and applied to the present disease, have been borrowed for the common one, and have therefore only been recently given to it. As, however, bearing upon the question of their assumed identity, in reference to their pathological conditions, and as tending very strongly to prove it, I may here notice that the view I have just glanced at, is substantially the same as I gave, more than thirty years ago, on the nature of the English disease, and before I had heard of the foreign complaint. The very term of collapse, which is now so distinctively applied to the blue stage of the present epidemic, was, if I mistake not, applied by me, among the first who described that stage in the English disorder; while the fever, now termed consecutive, which belongs to and follows the stage of collapse, when this is not subdued, and is almost unmet with in the complaint in India, was, as I have already remarked, especially noted by me as of frequent occurrence, and as a sequel, as it is now, to the stage of collapse, and in some respects as a remedy for it.

I will now summarily state the facts and conclusions that bear upon the subject I desire to establish, viz:—

First. That the cholera morbus essentially consists in an interruption, and in its malignant form, in a sudden and entire cessation, of the secretion of the liver, and primarily, as the result of it, of a congestion of the portal circle, or secretory system of the veins of the liver; and in the malignant kind, successively of those veins of the abdominal viscera and vertebral column whose venous circulation is associated with them.

Secondly. That the congestion of these important systems of veins becomes a cause of diminution, and at length, in the malignant type of the complaint, of an entire suppression of the secretion of the kidneys, and of a congestion of the vessels of the chest, at the same time occasioning violent contractions of the voluntary muscles, with a disturbance in the nervous system; that from this state arises a great and general abeyance or collapse of the vital powers, and a general interruption to the course of

the blood through the capillary vessels, and to the changes it should undergo there, together with a loss of animal heat, and a livid state of the surface.

Thirdly. That, beside the physical interruption caused by the congestion of the hepatic and abdominal, and at length in the thoracic and vertebral veins, there is an interruption given by it to those chemical changes of the blood, and to the expulsion from it of those noxious and excrementitious principles which it is one purpose of the kidneys, liver, and lungs, severally to effect.

Fourthly. That, beside the general effects in the system, the stomach and bowels become especially affected with a morbid irritation in their capillary system, which is caused in obedience to a law of the system by which the congested state of the veins becomes an indirect stimulus to the arteries of the organs implicated in the congestion.

Fifthly. That the final cause of these efforts of Nature appears to be, to overcome the congestion; while pending the effort, and in default of succeeding in it, an increased flow of blood is driven into the exhalent extremities of the mucous surfaces of the stomach and bowels, and a copious muco-serous secretion is profusely poured out from them.

Sixthly. That in the cases where the congestion terminates spontaneously and favourably, it is by a renewal of the secretion of the bile, and frequently, in the European or common type of the complaint, by such a sudden and copious discharge of it, as to occasion a considerable purging and vomiting of that fluid.

Seventhly. That when this remedial action does not take place, and the powers of life are not overwhelmed by the congestion, this latter state becomes wholly relieved by an increased action taking place in the capillary system communicating with the congested veins; and an inflammation becomes established in the mucous tissues, and a fever, as resulting from it, which, relatively to the stage of collapse, is appropriately termed consecutive, but which differs not in its nature and results, excepting in intensity, from the common bilious fever of this country.

Eighthly. That this inflammatory action succeeding to the simply increased one in the mucous tissues of the stomach and bowels, becomes remedial to the serous dejections and vomitings, and to the blue or collapsed stage, and is thus a remedy, though a morbid one, to the congestion which caused them, while the bowels become constipated, the urinary secretion restored, and the alvine discharges changed from their whey-like appearance and perfectly fluid state, to much of the color and consistence of tar.

Ninthly. That the remote cause of the foregoing pathological conditions consists in a morbid irritation, primarily set up in the stomach and bowels by certain malaria, assisted by unwholesome ingesta. That the malaria is of a specific nature, and generated, in certain localities contiguous to rivers and canals, and conspicuous for defective drainage, and other definite peculiarities, and modified or wrought into its state of malignancy by certain concurrent, but unappreciable conditions of the atmosphere. That the specific malaria, thus modified, exerts its influence chiefly in the localities where it is generated, and where, from its concentration, it is imbued with the most power. And lastly, that it affects within the range of its influence, almost exclusively, those only of the

community in whom a predisposition is induced by the habitual disuse of animal food, and by the derangement of the stomach and of the system, and which has resulted from an exclusive, and therefore an inordinate, use of a vegetable and acescent diet.

Tenthly. That, assuming from the foregoing considerations that the true pathological condition of both the common and malignant type of cholera consists essentially in an interruption to the secretion of the bile, the indication of cure must consist in restoring that secretion. That calomel is appropriately and confessedly the only medicine that can be relied on for this purpose; and that when given in small and frequent doses, by which the stomach is enabled to retain it, it becomes, though only indirectly acting for the relief of individual symptoms of collapse, a safe and most efficient remedy for them all.

THE TREATMENT OF CHOLERA.

CALOMEL 'THE ONLY SURE REMEDY.

I must begin by observing, that from the view which I had taken of the pathology of the English cholera, as explained in my work on the subject, and published in 1818, I was led to the conclusion that the Asiatic form of it was merely an aggravated type of the European complaint and was led to believe that the same treatment which I had so long pursued and recommended in the one, would, under a more active use of it, be an efficient remedy in the other. And I was the more strengthened in this conjecture from having had to treat on epidemic cholera in 1817, which put on, in a few cases, the severer symptoms of the present epidemic, and only yielded to a more active use of the means which I am presently to notice. Under the influence, therefore, of my preconceived impression regarding the probable efficacy of the treatment to both forms of the disease, but qualified in the same amount of the dose and the frequency of its reputation, on the appearance of the disease, in Sunderland, in 1831, I proceeded to that town, and having suggested my views to a medical friend, he invited me to take charge of a patient whom he had just been called to, whom I found in the act of being bled, who was already livid and of a death-like coldness, and whose pulse became extinguished immediately after the bleeding. To this patient so committed to my care I gave two grains of calomel and two drops of laudanum every ten minutes. I saw her again after a few hours, when I found the pulse had returned to the wrist. Having to visit Newcastle the following morning, I left my patient under the care of the cholera surgeon, and, on my return, two days after, to Sunderland, found her quite recovered. In Newcastle, the saline and other modes of treatment, as novel as they were incongruous, were in full use, and it was among the last that occurred there. In a few months the complaint broke out in this town, and the first case was in a man residing in a locality near the river. He fell under the care of the late Dr. Chalmers, to whom, as well as to the other professional gentlemen of the town, I communicated my plan of treatment, and who, adopting it, succeeded in curing the patient. It was a case in which the lividness and coldness of the surface, and the other characteristic symptoms of collapse, were present. It was seen by a

great number of the profession, and the treatment was early commenced. The next case was of a child of seven or eight years of age. It was one of collapse, and under the care of the cholera surgeon, who treated it with single grain doses of calomel, and it also recovered. Neither of these cases as I have stated, were under my care, but were treated agreeably to my plan, and had been fully under my notice. The next case so treated was the wife of a sweep, of drunken habits, whom I found in extreme collapse, livid, cold, and pulseless. The treatment used was two grains of calomel every ten minutes, with three or four drops of laudanum. In the morning, at my visit, I found the pulse restored, and the violence of the collapse subdued, and in a few days she was well. In a day or two after this case I saw another which was nearly as severe as the last, and was saved by the same treatment.

I could now reckon up five cases, and only five, which I knew had been treated conformably to my views, all the five having been in extreme collapse, and all recovered. At this time there had been sixty-five cases of the disease reported to our Cholera Board, of which forty had been fatal, and only twenty-five followed by recovery.

The next case, forming the sixth which came under my method of treatment, was one which was visited by two of the medical gentlemen, one of them being a physician who had been much engaged in treating the disease, and who relied, I believed, on what was termed the saline treatment. The case was one of a young girl, about fifteen years of age, who was as they believed, in a thoroughly hopeless state of collapse, and of whom, on this account, they declined to take charge, but directed that I should be sent for to her. Some time was lost before I could visit her, and it was with a hope against hope that I laid myself out to do my utmost to save her, by visiting her almost hourly; and I did save her, and to the extent of bringing her out of the collapse, and progressively during ten days, to a state of nearly entire convalescence, when some egregious irregularity in diet, and in the indulgence of some sour oranges, set up an irritation in the stomach, which ended in water of the brain. My success in this case, and in several others which immediately followed it in this district, gave me at once an ample field to test to my utmost wish the value of my practice. The cases I had to treat were of varying intensity, but nearly all were, like those whose recoveries I have related, livid and cold, and many of them nearly or entirely pulseless. Fully three-fourths of the first hundred of my patients were seen by the hospital assistants. Calomel in one or two grain doses, taken with one or two drops of laudanum, and repeated every five or ten minutes, for several successive hours, with an occasional omission of the laudanum at intervals, formed my exclusive remedy for the blue or collapsed stage in all the cases I attended. I scarcely used a single auxiliary means of any kind. I neither bled, nor gave stimulants, nor emetics, nor used the air-baths, nor frictions, except to relieve the cramps, nor did I resort to any but the ordinary means for supporting the temperature or strength of the system. I gave only calomel, and in the dose and manner described, and placed no other limit to the use of it than that which is placed by the disease. So long as the disease in the collapsed stage continued, the medicine was continued; *for pending the duration of that stage, I desire*

emphatically to aver, no absorption of the calomel takes place and no ptyalism can occur; and when that stage was yielding to the remedy, I took the needful care to suspend the use of it. Of the patients whom I lost, the greater number died in the stage of collapse, and within from twelve to twenty-four hours from my first seeing them; and nearly all, if not all, from causes which were superadded to the disease, and which, in most instances, might have been obviated by a more exact attention of the friends and attendants to their duty. Few, therefore, died in the consecutive fever, and of those who recovered, not one in ten had any fever at all, *for it is one of the essential and distinguishing properties of this treatment, to prevent the occurrence of consecutive fever, by its direct power to restore the secretion of the liver, and which is alone required to put an end to the disease.* I have already stated, that notwithstanding the very large quantities of calomel that are often needed, and taken in single grain doses ere the collapse is subdued, no ptyalism or other inconvenient effect is ordinarily produced by it. Not one in twenty of my patients had any salivation at all; nor in the very few who had it did it last much more than a week, and not in any of them was there a vestige of it at the end of a fortnight. Indeed after taking some pains to call to my recollection the number of such patients, I can only count up seven who could be said to make any complaint of it, and with those whose lives had been saved by it, it passed away entirely in ten or twelve days, and without producing, or leaving behind it, even the shadow of a shade of those effects which some might imagine to be inevitable, and in its anticipation bewail with profitless lamentation. In the way already described, I gave it alike to infants, though in a smaller dose, and to the aged, and in one instance to a considerable extent to a woman ninety-two years of age, whom I found in the collapse stage, and nearly pulseless, who in a few days was wholly recovered, and who survived the attack no less than eleven years, having reached the advanced age of one hundred and three, and with a power to take out-door exercises up to a period very near her death.

In some cases it was taken in quantities the most considerable, and which nothing but the imminency of the danger from the disease, and the experience of its harmlessness, could justify. By one man, Vaughan, a tramp, who was admitted into the hospital in the stage of collapse in its most malignant form, and who only emerged from it slowly at the end of three days, the immense quantity of five hundred and eighty grains of calomel were taken, and who, notwithstanding, without either fever or salivation following, was perfectly well, and ready to leave us in a week.

REFUTATION

OF THE OBJECTIONS TO

THE USE OF CALOMEL IN CHOLERA.

THE objections which may be offered against the use of calomel in small and frequent doses, are, I believe, fourfold; one being, that serious injury is to be apprehended from the very large quantity of calomel that must be exhibited, and that salivation must necessarily result from it; and the second, that such a practice is equally inadmissible, for the tender years of infancy and the enfeebled one of old age; also that, thirdly, when the vital powers are in abeyance, and the pulse extinguished, stimulants are chiefly indicated, and should alone be resorted to; and that when recoveries take place from the pulseless stage of collapse, it must be owing to the stimulants bringing on reaction when given as auxiliary to the calomel. These objections, which may naturally arise against the practice, and which, indeed, I have heard stated, I have not, fortunately, the need of rebutting; on the plea, that in whatever quantity the medicine be given, or however unsuitable to the age of the patient to whom it is given, its effects cannot be so injurious as the loss of life which the disease would otherwise inevitably induce. For, happily no injury of any kind ever results from the use of it when common care is employed in its exhibition, and no stimulants were ever auxiliary to the relief afforded by calomel to any of my patients, for none was ever given by me in the stage of collapse. Indeed it was a purpose I ever kept in view, and always acted upon, from the first to the last of 219 patients whom I attended in the disease, to observe the utmost simplicity in my prescription; and trusting as I implicitly did, to the power of calomel to remove the stage of collapse, I forebore using all collateral or auxiliary means, and I did so from a full consideration of the value of preserving my conclusions from the entanglement of those errors which result from a mixture of means. Calomel, therefore, in the minute dose of one or two grains, with a drop or two of laudanum to assist the stomach to retain it, and given every five or ten minutes, was my sole remedy in the stage of collapse, and in the cases which I now subjoin will be found the proofs of its efficacy.

But in estimating the effects which may result from the free use of calomel, when given in the stage of collapse, there is a fallacy to which we are exposed in our reasoning upon it, from the assumption that its effects upon the system will be analogous to those which it produces upon it under other forms of disease; whereas, as I have already had occasion to observe, pending the duration of the disease no ptyalism ever occurs during the exhibition of the calomel, or succeeds to its use, whatever may be the quantity given, or the length of time it is exhibited. In the hospital there was one of my patients, to whom it was found, from a very exact account that was kept, that no less than 580 grains were given; and one of my correspondents informed me that he had exhibited to one of his patients a larger quantity than this by 220 grains, and in both with the happy result of restoring early to health, and without the least appearance of ptyalism. But though neither ptyalism nor any other inconvenience is produced by calomel, when exhibited in the stage of collapse, yet if continued after this stage is wholly removed, its action on the system will be the same as it is in other diseases, and two or three grains will do then what as many hundreds could not do before. And in the cases presently to be given, it will be seen, not only with what freedom I gave that medicine, but also with what care I watched its exhibition, and attended to the lessening or suspension of it, as the collapse progressively subsided. By giving the remedy boldly, and yet cautiously, I was enabled to subdue the collapse, and by subduing the collapse to prevent the consecutive fever, and thus limit the duration of the disease to two or three days.

In the cases which will follow, and which I have selected purposely from those of my patients who were of the earliest and the most advanced ages, it will be found that calomel can be beneficial at every period of life, and without occasioning either ptyalism or other inconvenience, and that if calomel were not the efficient instrument for removing the collapse, it was removed spontaneously, for no other agent was employed. These cases will also show the necessity for a diligent supervision of the conduct of the nurses and the importance of duly persevering in the use of the calomel until the collapse is subdued.*

Mary A—, aged six months. Oct. 19th.—Is lying in a state of apparent torpor, purging and vomiting profusely a colorless fluid; skin cold and livid; no pulse at the wrist; great thirst; eyes sunken. The mother died of the disease about a week since, but not under my care. To have half a grain of calomel every seven minutes, with occasionally a drop of laudanum in cold water.

Oct. 20th.—The medicines have been given very irregularly, and the skin is still cold and livid; the purging and vomiting continue; the pulse is perceptible at the wrist, but feeble. To have the calomel regularly until relieved.

21st.—Is now warm on the surface, but is restless, and seems uneasy in the head. To have leeches to the body, and cold lotion to the head, and some castor oil.

* The pills of calomel should be as small as possible; and a grain pill need never weigh more than one grain and a quarter, including the gum added to form it.

22nd.—The restlessness and other symptoms relieved. Is sitting up in the nurse's arms, and appears much better.

23rd.—Is quite well, and reported recovered; was visited by the hospital assistants.

John A——, aged a year and a half,—June 2nd, twelve at noon : The child is lying in bed by the side of its mother, who is unwell. It is vomiting and purging copiously a watery fluid; it is quite cold and livid, and no pulse is perceptible. It suffers itself to be moved about without any crying, but is eager for drink; has been affected with sickness for several hours, and became lately cold and livid. To have half a grain of calomel and half a drop of laudanum every ten minutes. Three P. M. : Has had no medicine, as none of the relations or neighbors dare enter the room; is frightfully cold and livid; procured a nurse from the hospital.—Five P. M. : the child has taken its medicines regularly, and is less cold, and the sickness and purging are abated.—Six P. M. : Is worse. No medicines have been given during the last hour. Has been sick once; the limbs are cold and blue and damp. A reward is promised by me to the nurse if the child be saved. The calomel to be taken every ten minutes as before, and after four hours at wider intervals.

3rd.—Seven A. M. : The little patient has taken eighteen powders, and is in every way greatly improved. Has had no stool. To have some castor oil, and the calomel every two hours.—Six P. M. : Is fretful, cries much, and appears uneasy, and the skin is preternaturally warm; has had a stool. Two leeches to be applied to the stomach; the calomel to be discontinued.

4th.—Is greatly improved, and has slept in the night.

5th and 6th.—Continues to improve.

7th.—Appears to be free from complaint; no soreness of the mouth.

Ann S——, aged seven.—Eleven A. M. : Is affected with the following symptoms:—Purging and vomiting of the characteristic fluids, which pass from her as she lies; is of a death-like coldness, and lips and hands livid; no pulse at the wrist; eyes much sunk; has great thirst; lies in a somewhat torpid state; some cramp in the hands and feet; was affected yesterday with a purging, and was seized this morning with the above symptoms. Mr. Sharpe and his assistant are present, and have begun giving her a grain and a half of calomel, with one drop of laudanum every five minutes; nothing else has been given; waited an hour with Mr. Sharpe, and gave the medicine.—Twelve at noon : Has taken twelve doses of the calomel; pulse is now perceptible at the wrist, and the surface is somewhat less cold and livid; had no sickness until near the end of the hour, when she threw up a large quantity of fluid with great violence, had also some cramps, which were removed by rubbing. To take a grain of calomel every twenty minutes.—Two P. M. : Mr. Sharpe is present; the patient is asleep; skin of natural warmth; breathing calm; pulse quite distinct; has had no stool nor sickness. To take the calomel every half hour, and without the opiate.—Nine P. M. : All the unfavorable symptoms gone; pulse 100; skin natural; not much thirst; no sickness; is quite distinct; has slept a good deal; to have the calomel every two hours.

4th.—Seven A. M. : Has taken ten pills during the night; has passed

some water this morning for the first time during the last twenty-four hours; skin and pulse natural; no thirst; has had a stool, and very dark, but bilious. To have a draught, with infusion of senna. The calomel to be discontinued.

5th.—Has passed a good night; bowels only moderately open; color improved; tongue quite clean and moist; wants to be dressed.

6th.—Is now up, and below stairs.

7th.—Has been walking in the street before the house, and is quite well, and has no soreness of the mouth.

Eliza G——, aged five.—October 24th, eleven A. M.: Is purging and vomiting copiously a whey-like fluid; the eyes much sunk; the face contracted; skin livid and very cold; lies in a half torpid state; pulse scarcely perceptible; much thirst; was affected yesterday with a purging; during the night became worse; and the discharges were of the same quality; three hours ago, was first sick, and has since thrown up large quantities of fluid. To take half a grain of calomel every five minutes, with the third of a drop of laudanum, in a teaspoonful of water. Five P. M.: Has taken nineteen doses of the calomel and laudanum; the eyes continue much sunk; the vomiting and purging unabated; the skin still very cold and livid; and the pulse very feeble. To take the medicine punctually every five minutes.—Eight P. M.: Is still sick, but not so much purged; the other symptoms much the same; has taken twenty-four doses of the calomel during the last three hours. To have a grain of calomel every seven minutes, until relieved, and six leeches to the stomach, if necessary.

October 25th.—Nine A. M.: Sickness ceased in the night; eyes much less sunk; skin of moderate warmth; had three motions in the night, of the whey-like quality; leeches have not been applied; has taken twenty of the pills. To apply the leeches, if necessary, and discontinue the pills. To have broth and boiled rice.—Five P. M.: Has been sick once, and has had a stool, which was white; leeches have been applied; countenance very languid, and somewhat livid. To have half a grain of calomel every fifteen minutes, for twelve times, and a cold lotion to the head.

26th.—Eight A. M.: Has slept in the night; has had two stools of a dark color; no sickness; is sitting up, and looks much better; has passed some urine for the first time since her attack. To have new milk, and discontinue all medicines.

27th.—Is sitting on a small stool, dressed; has taken milk, and had a more natural stool; appears to be quite free from complaint; no pyalism. Visited by hospital assistants.

Catharine W——, aged thirty; a sweep's wife, of drunken habits. October 20th. Six A. M.: Is lying in a garret, on sacks, and with only a coverlet over her; is purging and vomiting, as she lies, a colorless fluid; skin very cold and livid; the eyes sunk; severe cramps in the legs and thighs; voice choleric; pulse scarcely perceptible; has had a diarrhoea for several days, and has been purging and vomiting all night; was drunk yesterday, and several days before, and has eaten but little food. To have two grains of calomel every seven minutes for an hour, and afterwards every ten minutes, with one drop of laudanum; left seventy pills.—Three P. M.; Seen, in company with Mr. Hunt. Has

taken only twenty pills, through some misunderstanding; pulse nearly extinguished; vomiting and purging as she lies, and most profusely; cramps severe; skin cold and damp; all the other symptoms aggravated. To have two grains of calomel every two minutes, with the laudanum; sixty pills left.—Seven P. M.: Seen by Mr. Hunt. Reports that the pills are nearly all taken; warmth of the surface returned; vomiting and purging much abated. The pills to be discontinued.

21st.—Ten A. M.: Has passed a pretty good night; the purging and vomiting ceased; passed water in the night; cramps gone; looks much improved; tongue clean and moist; has had several dark stools.

22nd.—Has no fever or other ailment; no ptyalism.

John V.—, aged thirty-two, a tramp, of drunken habits. Cholera hospital—August 14th, eleven P. M.: Is affected with a vomiting and purging of the characteristic fluids; the skin is cold and livid; the eye sunk; the voice choleric; the pulse extinguished at the right wrist. Has been affected with a diarrhœa for two days, and has only just entered the town from York, where the disease now prevails. Has eaten of raw grain from the fields. To have one grain of calomel with one drop of laudanum every five minutes.

August 15th.—Ten A. M.: Has been closely attended by the hospital assistant; has taken seventy pills and a small quantity of brandy on his admission; the pulse is now quite distinguishable; the skin still cold and livid; the eye much sunk; voice very hoarse; has vomited and purged several times as before. Two P. M.: Has not been so well during the last hour. Purging and vomiting continue; skin still cold and livid, but without any dampness; countenance and voice and pulse still the same. To take two grains of calomel every five minutes for an hour, and afterwards one grain as before. To have a rice and broth glyster, and a tea-spoonful of brandy occasionally. Five P. M.: Is better; purging stopped; sick only once. Continue the pills, omitting the laudanum.—Nine P. M.: The temperature of the skin is improved, but is still cold; the eyes also still sunk, and voice choleric; some sickness. Pills to be continued as before every five minutes.

16th.—Seven A. M.: Has had a good deal of sleep; voice still hoarse; pulse still feeble; skin less cold and livid; purging still characteristic. Has taken his pills regularly when awake. Has had some beef-tea. To have a glyster of broth, and to continue the pills.—Seven P. M.: Countenance somewhat better, but the skin is still cold. Continue the pills.

17th.—Seven A. M.: Has passed a good night, and is considerably better; stools of an ash color; has passed some urine for the first time for three days; skin of a natural heat; countenance and voice greatly improved; pulse calm. To omit the pills. To have glysters of broth, and saline effervescing draughts.

18th.—Has passed a good night, and declares himself to be quite well; tongue clean and moist; appetite returning.—Eight P. M.: Ejects his food from his stomach. To have eight leeches applied to his body.

19th.—Retains his food, and is in every respect better; stools are black.

20th.—Is quite free from complaint, and is only detained in bed from his ragged clothes having been burnt on his admission. Is anxious for food.

This patient, from some delay in supplying him with fresh clothes, was only prevented at this time from leaving the hospital quite well; he remained a week thus detained. Had no soreness of the mouth, although he took the very large quantity, as already stated, of 580 grains of calomel between the evening of the 14th and the morning of the 17th.

Mary G——, aged ninety-two. August 16th.—Two P. M.: Is affected with a purging and vomiting of a whey-like fluid, and in profuse quantities; skin very cold; the eye sunk, and countenance contracted and slightly livid; great thirst; much oppression about the chest; voice hoarse; cramps of the feet and ankles; pulse very feeble; urine suppressed; has been affected with a diarrhoea during the last ten days, and was seized this morning, when up, with dizziness and staggering. Shortly after, she became sick, and appears to throw up and purge more than the usual quantity of fluids. To have one grain of calomel with two drops of laudanum every five minutes for an hour, and afterwards every ten minutes. Seven P. M.: Has taken her pills regularly; skin less cold; no cramps; pulse firmer; thirst less; the vomiting and purging continue, but the quantities discharged are lessened. To take a pill every twenty minutes.

17th.—Eight A. M.: Has taken only twenty pills during the night. Still some sickness and thirst, though greatly less; purging abated, and the stools are dark; skin of nearly a natural temperature; countenance and pulse much improved; voice natural; urine still suppressed. To take a pill every hour, with one or two doses of a cretaceous mixture.

18th.—Urine still suppressed; in other respects is much better; still some sickness and purging, but the matters are no longer whey-like. To discontinue the pills; to have boiled rice and some gruel with wine.

19th.—Has continued to improve, and passed a good night. No sickness; tongue clean; bowels only once moved; motions dark; has passed some urine after more than seventy hours' suppression.

20th.—Has continued better, and is sitting up in bed smoking a pipe. Declares herself to be quite hearty.

24th.—Is down stairs, sitting at tea with her daughter.

Having now submitted the foregoing cases to the consideration of such of my readers who may bestow upon them due attention, I would suggest to them the dispassionate inquiry, whether the treatment employed for the relief of these patients were the efficient cause of their relief; and if so, seeing that they were cases of extreme collapse, and occurring in patients of various ages, what hindrance should there be to the same success in all other cases where there was no previous disease, and where the same attention was given to the treatment. It was, indeed, fully in accordance with my experience, and was confirmed to me by those of my friends who followed the same course of treatment, that there was no ground for despair in the most unpromising cases of collapse, where the attendants did their duty; and it occurred to us all to witness recoveries under such circumstances of hopelessness, as to take from us nearly all anxiety about the result of ordinary cases of collapse.

But in putting the above question, I am not unmindful of the fact that out of 219 patients whom I reported to our Board of Health, only 180 recovered, and, therefore, 39 died: nor can I overlook the circum-

stance that such a fact as the death of thirty-nine of my patients, presents a formidable objection to the conclusion for which I contend, that the treatment so efficient in these 180 cases, will be, when tried, efficient in all others, when not counteracted by causes which, from their very nature, must render success impossible. In justice, therefore, to the subject, which, at the present moment, is an all absorbing one, I must invite attention to the memoranda of the several cases which I made at the time of their fatal issue, and I do so with the belief that when they have been considered, the conviction will be general that had these patients been circumstanced as were those who recovered, like them, they would have recovered also. In a disease, indeed, so fatally swift in its course that five or six hours are sufficient for its fatal issue, it must be obvious that casualties, among the poor, will often occur to preclude their obtaining assistance in time, and especially when, as several times happened with the patients whom I had to report as mine, the attack commences early in the night, and no assistance is sought for until the morning, when, on hastening to his aid, the patient is found to have expired, or on the point of expiring. But casualties such as these would not occur among the wealthier classes, nor among the inmates of hospitals, work-houses, or gaols; and in the absence of such causes, as hindrances to a successful issue, I hesitate not to affirm that the treatment would not only have proved efficient, but also those who recovered by it would have fallen into a less profound collapse before their treatment began. From the causes occasioning delay in commencing the treatment, I found all the cases I was called to, more or less advanced in the collapse stage, and a vast many profoundly so; and though I prescribed for a great many patients, with the premonitory diarrhoea, and treated them all with minute doses of calomel, given every half hour, with laudanum, I never had occasion to report any of them to the board, the treatment being always sufficient to arrest the progress of the disease. To me, generally, as to all engaged in the treatment of this interesting disease, there was perpetually presented the mortifying occurrence of casualties that might have been obviated, but to me, if possible, such casualties were especially matters of regret, because I was engaged, from the first to the last of my 219 patients, in the anxious duty of establishing, by its results, the value of a treatment which experience through its whole course had taught me to be efficient, and for the accomplishment of which I unsparingly applied myself. To some, perhaps, this language may savour of self-complacency; but I am anxious to have it understood that I felt myself to be engaged in the pursuit of a great purpose, and that nothing was wanting to its attainment, but the attention which I unceasingly gave to it during the whole period that the disease remained among us. It was in furtherance of this object, and to establish it by the evidence of others, that, as I stated in a former paper, I applied to the authorities of this town to form a committee of six persons, who should visit all my patients, and report their state, and the results of their treatment, and upon failing to obtain such authorized committee, to three medical friends, who should undertake the same office, and whose attestation I have already given. It was also in fulfilment of the same purpose of establishing the efficiency of the treatment which I employed, that I kept a journal of all my

cases, and memoranda of the circumstances which precluded the recovery of the thirty-nine of the patients who died, whom I had to report as mine, but of which number more than one-half, as it will be seen, in no way scarcely belonged to me as patients in whose treatment I had any share, and which, therefore, in no degree pertained to me as patients, or could be numbered amongst the cases of failure.

I am aware, indeed, that casualties hindering a full trial of any mode of treatment in every case of the disease must occur with all who are engaged among the poor; but it is due to all who claim it, and it is, in fact, due to the interests of truth, that all such instances should be stated, that a correct judgment should be arrived at. I give, therefore, the brief details that follow, in the confidence that due weight will be given to the evidence they will afford of the power which the treatment I adopted possessed for removing the stage of collapse in its most aggravated form, and when the treatment has not been too long delayed, or too negligently pursued, that it does so with the result of restoring the patient to a state of health without the intervention of the consecutive fever.

Of the thirty-nine fatal cases of which I am now to subjoin an account, twenty-two will be found to have undergone no treatment, and to have been numbered amongst mine because accident brought them first under my notice, and the rules of the Board of Health required me to report them.

CASE 1. Richard F—, aged sixty-nine, was first seen in the night by one of the hospital assistants, who gave the saline medicines, and a few hours afterward was visited by me, when I found him dying and speechless.

CASE 2. M—, aged sixty-five, a destitute woman, to whom I was called in the night, and who had been in the disease for twelve hours, but from living alone had concealed it; was subject to fits of temporary derangement, and was pulseless, and apparently deranged when I saw her. No one would enter her room for fear of infection. She took no medicine.

CASE 3. H—, aged forty, was first visited early in the night by a medical assistant, who gave the saline medicines. He was subject to periodical attacks of asthma, and when I reached him, many hours afterward, he was at the point of death, and under an overwhelming congestion of the lungs. He took no medicine.

CASE 4. Mary K—, aged thirty-eight, was seized early in the night, and was not seen until the morning, when she was dying, and could take no medicine.

CASE 5. Hannah R—, aged forty-five, a poor woman whose husband was absent, seeking work, and who, having been seized with the disease, kept her door locked in the apprehension of being carried to the hospital. She was dying when I reached her, and no one would enter her room.

CASE 6. Rose C—, aged thirty-one, a very dissolute woman, who was drunk and fighting in the street on the evening preceding the night of her attack, and was twelve hours in her disease before she was seen, when she was removed to the hospital, where she immediately died.

CASES 7 and 8. W. S—, aged sixty-nine, and —, aged seventy-

six. Both these men were seized early in the night, but for whom no assistance was sought until the morning, when they were both dying, and could take no medicine.

CASE 9. Jane A——, aged twenty-two, was seized in the night, and not having sought for assistance, was dying, and unable to take any medicine when I visited her.

CASE 10. G. W——, aged twenty-nine, a poor stranger in search of work, who, it appeared, had been many days almost entirely without food, and who worked through a whole day in the hay-field with the premonitory symptoms upon him, and was carried home in the evening to his lodging, and thence to the hospital, where he soon after died, having taken no medicine.

CASE 11. M——, was attacked early in the night, and only sought for assistance in the morning, when I found her at the point of death.

CASE 12. T. B—— was seen at ten A. M., in extreme collapse. A supply of pills was left for him, and he was revisited at one P. M., when it was found that only six had been given, and that he had just expired.

CASES 13 and 14. Alex. G——, aged twenty-four, and Eliz. K——, aged seventy. Was called up, when passing the house, to see these patients, whom I found speechless and dying, and incapable of taking anything.

CASE 15. E. M——, aged seventy, was in a collapse of medium severity when I saw her, but was neglected by the nurse, who got drunk, and gave her no medicine. She died in eight hours.

CASE 16. Ann T——, aged fifty, died in a few hours after her attack commenced, and got scarcely any pills given to her, from the terror about infection among her neighbors.

CASE 17. T——, aged eighty-four, was found in a profound collapse when visited, and being incapable of swallowing, took no medicine.

CASE 18. G. H——, aged fifty, was not discovered to be in the disease until he was dying, for his wife had gone the preceding day a journey of many miles to seek relief from his parish. I found him quite senseless and unable to swallow.

CASE 19. Thomas Y——, aged forty, a tramp, who had slept one night only in Hull, when he proceeded to Beverley, where he was seized in the market-place, and was brought thence to Hull after many hours' delay, and died almost immediately after his return.

CASE 20. Mary J——, aged four. This child had been in a collapse for several hours when I was called to it, and it expired almost immediately after my seeing it.

CASE 21. William F——, aged sixty-three, was only in a collapse of medium severity when visited, but his wife mistook the directions given to her, and gave the pills only every half-hour, and on my visiting him, I found him at the point of death.

CASE 22. George B—— was seized at 5 A. M.; assistance was sought for at half-past nine; and at ten he expired, a few minutes after my entering his room.

To the above twenty-two fatal cases, to which no treatment could be said to have been employed, I have now to add eighteen others, where some treatment was pursued, but where, from causes that will be found

explained, there was either neglect in seeking for assistance in a reasonable time, or negligence in making use of it, by which inflammatory reaction took place, with its consecutive fever, and which, with infants, ended in effusion upon the brain; and in the aged, and in those laboring under previous disease, to an irremediable state of debility.

CASE 23. Ann K——, aged fifty-five, a destitute woman, who had frequently and recently been affected with lead colic, and from living alone was not discovered to be in the disease until many hours after it began; she was then livid, cold, and pulseless, but struggled through two days, and gave a slight hope at one time of getting through it.

CASE 24. E——, an infant, was first seen by Mr. Sharpe; was fully brought out of the stage of collapse, and was in a fair way of recovery, when the mother sturdily refused to use the further treatment that was necessary to restore it.

CASE 25. Eliza A——. This patient's case has been already referred to as one who was believed to be dying, and was relinquished to me in scorn of my attempt to save her. Many hours were lost ere the treatment began, but she was brought out of her pulseless state, and was even rapidly recovering during several days, when some oranges and other improper things were given to her, and the consecutive fever was set up, which carried her off.

CASE 26. T——, aged forty, a most destitute woman, with a sick husband and a large family, who during many hours while in collapse, refused all assistance, and was afterward greatly neglected.

CASE 27. John K——, aged 45, of drunken habits, was pulseless and frightfully livid when first seen; was recovered from this stage, and passed into consecutive fever, and was delirious during six days, when he died.

CASE 28. B——, aged twenty-four, was in extreme collapse, and during six hours before my visit had been drugged profusely with stimulants, and with a most inordinate quantity of laudanum.

CASE 29. P——, aged forty, was brought out of collapse, and was recovering during several days, when he took some ginger-beer and other improper things, and died from the effects of the consecutive fever.

CASE 30. H——, aged three, was recovered out of an extreme collapse, and was nearly convalescent, when the elders of the family becoming attacked, the little patient was perforce neglected, and water on the brain succeeded.

CASES 31 and 32. Mary E——, aged one and a half, and Jane E——, aged four. These two children were brought fully out of collapse, but fell into the consecutive fever early in the night, and in the morning I found them laboring under dropsy of the brain. The mother informed me she had lost five children under the same disease.

CASE 33. Mary H——, aged nine months, was brought out of a profound collapse, and appeared to be recovering, when dropsy of the brain supervened.

CASE 34. William B——, aged seventy-one, was relieved from extreme collapse, when he sank, from a most extensive arterial ossification of the upper and lower extremities, under which he had long suffered, and accompanied, no doubt, with a similar condition internally.

CASE 35. William P——, aged thirty-two, had been long a cripple,

from rheumatism. Was seized early in the night with the disease, but sought for no aid until the morning, when I found him in a profound collapse. He was brought out of it, but immediately fell into fever, and died in a few days. His wife had the premonitory diarrhœa shortly afterward.

CASE 36. C. W——was in a profound collapse when first visited: was recovered from it, but fell in the night into fever, and died with the symptoms of hydrocephalus.

CASE 37. John H——, aged seventy, fell into consecutive fever, which appeared to operate fatally by bringing into more active development some previously existing disease.

CASE 38. E. S——, a married woman, who had recovered under my care from a severe attack of the disease, relapsed into it from eating too hearty a supper at her father's house, and sank at the end of a fortnight from the exhaustion which succeeded a miscarriage, which the second attack produced.

CASE 39. P——, aged thirty-five, the mother of a large and destitute family; was in a profound collapse when first seen, and was induced from her own or others' prejudices to neglect taking her medicines for some time after they were given. She died in twelve hours.

Having now brought the foregoing account of the fatal cases under the notice of my readers, and detailed the circumstances which, either wholly or in a great part, prevented a favorable issue, it remains for me to state, in respect to them, that in regard to the order of the symptoms, and in their progress to their utmost intensity, they differed in nothing from those whose termination was favorable. It was obviously only from the great delay in commencing the treatment, or the great negligence in using it, and with many from both these causes, that the difference in the result arose. In a detailed relation given in my last paper of a few of the cases of my patients who recovered, and who were selected, not for their severity, but for the age of the patients, it cannot fail to have been observed, that like the librations of a balance the patients retrograded from or advanced toward recovery, just as the treatment in each case was continued or omitted. It was thus frequently demonstrated to me, as substantially confirmatory of the value of the treatment, that within certain limits in the intensity of the collapse, the disease was quite within the means of control, and it was only when, by the profundity and long duration of the collapse, and when the stomach had lost its power of being acted on, that the treatment failed in its effect. At what period in the progress of the collapsed stage this state comes on, I am not prepared to say. I can, however, aver that its presence is not necessarily denoted by the extinction of the pulse at the wrist, nor by the cold tongue, and livid, cold, and clammy skin, nor the death-like, sunken eye, with the other well-known characteristics of the profound collapse; for I have, in numerous instances, witnessed recoveries from this condition. It is to be remembered that these recoveries—to the number of one hundred and eighty—were effected by the agency of one and the same medicine—namely, single or two-grain doses of calomel, repeated every five or ten minutes, and, with the exception of a drop of laudanum, wholly unassisted by any other means; that these cases of cholera had all advanced more or less into the stage of collapse, and many of them to a pulseless state; that of the thir-

ty-nine patients who died out of the two hundred and nineteen whom I reported as mine, one half of them underwent no treatment, and the remainder only partially and imperfectly; that a large proportion of the patients, both of those who died as of those who recovered, were seen and visited by other medical gentlemen, whom I solicited to do so, with the intention, as expressed to them at the time, that they might be witnesses of the cases, and of the results of the treatment pursued with them, and to supply me with their attestation of them; that in addition to such testimony, there is that of other practitioners in different parts of the kingdom. And, finally, to the several points here re-stated, and to which I emphatically invite the professional reader's attention, I may add, that whatever may be the objections to calomel when exhibited in large doses and at wide intervals—and I confess there are both numerous and sound objections to it when so given—they do not apply, either theoretically or practically, to calomel when given in small and frequently renewed doses; and that it is not at a moment like the present, to pause upon the policy of adopting a practice having such claims of preference, and when, in truth, there is no other treatment in use, or recommended for use, that can arrest its fatal course, and remove from the public mind the doom it has hitherto endured, of being numbered among the *oppobria* of medicine.

CORROBORATION

OF THE VIEWS OF DR. AYRE IN THE TREATMENT OF CHOLERA.

Copy of a Letter from Messrs. Jenkins, Henesy, and Marston, to Dr. Ayre.

DEAR SIR,—We have received your letter in which you request us to state, first, to what state of intensity has the stage of collapse arrived in the cases of cholera which we have seen recover under the treatment of small and frequent doses of calomel, and whether any of the recovered cases had been pulseless; second, what were the circumstances which appeared to us to preclude the recovery of the four patients whom you have lost in this second appearance of the complaint? third, whether it has occurred to us to know if any patient has passed into the stage of collapse, for whom either you or we have prescribed in the premonitory stage? and fourth, and lastly, what are the conclusions which we have formed with respect to the power of calomel so given in arresting the

impending collapse, and in subduing it when established? To which inquiries, from our having, either singly or together, seen all the cases of collapse which you have attended since the disease re-appeared, we beg to reply, that we have witnessed the recovery of patients from a state of collapse that was most entire, and of great intensity, as characterised by the sunken eye, the livid surface, and cold tongue, the cold, shrivelled, and sodden hands, the hoarse, choleric voice, violent cramps, rapid and scarcely perceptible, and in two cases extinguished, pulse, and the long and complete suppression of the secretion of the kidneys; and that in the case of the four patients who died, there was either neglect in sending for advice in anything like a reasonable time, or great neglect in giving the medicine. That we have never met with or heard of a case proceeding into the stage of collapse, for whom either you or we had prescribed in the premonitory stage, and we do not believe that such a case has occurred; and our conviction, therefore, in regard to the power of calomel, when given in small and frequent doses, is, that it will in every case arrest the disorder in its premonitory stage, and will cure nearly all, if not all, the early cases of collapse and a considerable proportion of those where the collapse is entire, and even in some cases where the pulse is not to be felt at the wrist; though we do not mean to say that cases may not occur of such extreme malignity as to defy the power of this treatment, yet we are disposed to think, from what we have seen, that the main cause of its failing would arise from collapse having been allowed to acquire such a power as to overwhelm the vital functions, and to render the stomach insensible to every agent thrown into it.

(Signed,)

RICHARD JENKINS,
EDWARD HENESY,
HENRY MARSTON,

Members of the College of Surgeons, &c.

To DOCTOR AYRE.

From Mr. Wilson, of Sheffield, to Dr. Ayre.

SIR,—In compliance with your request, we beg to transmit to you the result of our treatment of cholera; which plan of treatment was adopted from your system of giving small and frequently repeated doses of calomel, and which you will find, on comparing the number of deaths with the recoveries, to have been successful, and satisfactory to a high degree.

(Signed for Wright and Self.)

KNOWLTON WILSON.

Total number of deaths,	23
Of those who reached the collapse stage,	54
Of those who had the disease clearly developed,	28
Of those who had premonitory symptoms to a greater or less extent,	21
Total	103

Out of the twenty-three who died, we may remark, that in five the medicine was given with the greatest irregularity; that four had been on our sick list for many days previous, ill of other disorders—one, for

instance, in typhus; three were confirmed drunkards; and, lastly, one was nearly eighty years of age; therefore it would be seen, that out of the twenty-three individuals with whom the disease proved fatal, the medicine had only a fair chance in producing its effect in ten. It may, perhaps, be worth relating, that in one case we gave the calomel to the extent of 300 grains.

(Signed)

K. W.

Extract of a letter from P. Glenton, Esq., of the Cholera Hospital, Newcastle.

"Calomel has been given to a considerable extent, in the dose you mention, and, as regards my own experience, it is a medicine deserving the highest praise, both in the treatment of the primary and consecutive stages of this tremendous disease."

Extract from a letter from W. Hardcastle, Esq., of Newcastle.

"Calomel has been our sheet anchor when administered according to your plan, every ten or fifteen minutes. It has been eminently successful."

From R. Sharpe, Esq.

Having seen a great deal of the Asiatic cholera during its prevalence in 1832, and having attended a large number of patients both with Dr. Ayre and alone, and having pursued the practice adopted by him, I feel no difficulty in asserting, that my experience of the efficacy of the treatment is in entire accordance with the opinion above expressed by the Messrs. Jenkins, Henesy, and Marston.

(Signed)

RICHARD SHARPE, M.R.C.S. &c.

Report from the Cholera Hospital at Liverpool.

In the stage of collapse, the most beneficial course has been under the exhibition of calomel in small, frequent, stimulating doses. We have tried every mode of treatment, from the saline remedies to the allowance of cold water *ad libitum*, and have been compelled to discard them in favor of the plan of which you have an outline.

Abstract of documents communicated by the Central Board of Health.

The disease here under the care of Dr. Arthur T. Holroyd, of Harley place, has almost universally yielded to the treatment recommended by Dr. Ayre, of Hull. The house-surgeon, Mr. Toynbee, has been indefatigable in his attentions to the patients; and I attribute, observes Mr. Holroyd, my success in a great measure to his exertions. He suffered from a severe attack about two months ago, but fortunately recovered under the use of calomel and opium. One of the nurses and the porter were also attacked, and restored to health by the same remedies.

*Extract from a Return of Patients admitted into St. Pancras Hospital,
London.*

In severe cases the saline treatment was employed, not only without mitigation of any one symptom, but with injurious effects. In not one case did the saline treatment produce recovery. Calomel and opium, however, afterward restored the patients in some instances. One man, John H——, was the most severely attacked on the 2d of September. He was treated with calomel and opium, (muriate of morphia,) of the former of which he took 800 grains, and of the latter, thirty grains, without their producing any pytalism or head affection. He recovered on the 14th of the same month.

END.

THE PUBLIC HEALTH.

NOTIFICATION

RECENTLY ISSUED BY THE BOARD OF HEALTH, LONDON, FOR THE PREVENTION
AND TREATMENT OF CHOLERA.

Although it is so far true of Cholera that certain conditions may favour its spread from person to person, as when great numbers of the sick are crowded together in close, unventilated apartments, yet this is not to be considered as affecting the general principle of its *non-contagious* nature.

Householders of all classes should be warned, that their first means of safety lies in the removal of dung-heaps and solid and liquid filth of every description from beneath or about their houses and premises.

Next to the perfect cleansing of the premises, dryness ought to be carefully promoted, which will of course require the keeping up of sufficient fires, particularly in the damp and unhealthy districts.

On the first out-break of cholera, the local authorities should immediately make arrangements for daily house-to-house inspections of the poorer localities in their respective districts.

Heads of families, masters of schools and work-houses, proprietors of large establishments and works, such as factories, mines, warehouses, wharves and docks, should either be their own inspectors, or employ some trustworthy agent to examine daily every person in their employment, and to give at once the proper remedy, if the premonitory symptoms should be present.

Each member of a visiting committee should be provided with proper remedies, prepared in appropriate doses for administration on the spot, in every instance in which the premonitory symptom is found to exist, and should report every person so treated as requiring the instant attention of the medical officer.

Dispensaries for bowel complaints should be established at convenient stations, at which the neighbouring inhabitants may apply for the proper remedies and advice the moment they are attacked by the premonitory symptom.

Experience having shown that *the establishment of cholera hospitals was not successful*, the best provisions practicable must be made for affording assistance to the individuals who may need it, *at their own houses*; and one of the best modes of effecting this object will, probably, be the selection of proper persons, who may be instructed as nurses, in the special services required on this occasion, and paid for devoting their whole time to attendance on the sick at their own habitations, under the direction of the medical officers.

Medical authorities are agreed that the remedies proper for the premonitory symptom are the same as those found efficacious in common diarrhœa; and that the following, which are within the reach and management of every one, may be regarded as among the most useful—namely, twenty grains of opiate confection, mixed with two tablespoonfuls of peppermint water, or with a little weak brandy-and-water, and repeated every three or four hours, or oftener, if the attack is severe, until the looseness of the bowels is stopped; or an ounce of the compound chalk mixture, with ten or fifteen grains of the aromatic confection, and from five to ten drops of laudanum, repeated in the same manner. From half a drachm to a drachm of tincture of catechu may be added to this last, if the attack is severe.

Half these quantities should be given to young persons under fifteen, and still smaller doses to infants.

It is recommended to repeat these remedies, night and morning, for some days after the looseness of the bowels has been stopped. Every article of food which is known to favour a relaxed state of the bowels should, as far as possible, be avoided—such as every variety of green vegetables, whether cooked or not, as cabbage, cucumber, and salad. It will be important, also to abstain from fruit of all kinds, though ripe, and even cooked, and whether dried or preserved. The most wholesome articles of vegetable diet are well baked, but not new bread, rice, oatmeal, and good potatoes. Pickles should be avoided. Articles of food and drink which in ordinary seasons are generally wholesome, and agree well with the individual constitution, may, under this unusual condition, prove highly dangerous. The diet should be solid rather than fluid; and those who have the means of choosing should live principally on animal food, as affording the most concentrated and invigorating diet; avoiding salted and smoked meats, pork, salted and shell-fish, cider, perry, ginger-beer, lemonade, acid liquors of all descriptions, and ardent spirits. Great moderation, both in food and drink, is absolutely essential to safety during the whole duration of the epidemic period.

Warm clothing is of great importance. The wearing of flannel next

to the skin is therefore advisable. Recent experience seems to show that it was useful to wear in the daytime a flannel bandage round the body.

Particular attention should be paid to keeping the feet warm and dry, changing the clothes immediately after exposure to wet, and maintaining the sitting and bed-rooms well aired, dry, and warm.

It may be necessary to add a caution against the use of cold purgative medicines, such as salts, particularly Glauber salts, Epsom salts, and Seidlitz powders, which, taken in any quantity in such a season are dangerous. Drastic purgatives of all kinds should be avoided, such as senna, colocynth, and aloes, except under special medical direction.

If, notwithstanding these precautionary measures, a person is seized suddenly with cold, giddiness, nausea, vomiting, and cramps, under circumstances in which instant medical assistance cannot be procured, the concurrent testimony of the most experienced medical authority shows that the proper course is to get as soon as possible into a warm bed; to apply warmth by means of heated flannel, or bottles filled with hot water, or bags of heated camomile flowers, sand, bran, or salt, to the feet and along the spine; to have the extremities diligently rubbed; to apply a large poultice of mustard and vinegar over the region of the stomach, keeping it on fifteen or twenty minutes; and to take every half hour a teaspoonful of sal volatile in a little hot water, or a dessertspoonful of brandy in a little hot water, or a wine-glass of hot wine whey, made by pouring a wine-glass of sherry into a tumbler of hot milk—in a word, to do everything practicable to procure a warm, general perspiration until the arrival of the medical attendant, whose immediate care, under such circumstances, is indispensable.

It has not been deemed necessary or proper to give instructions for the treatment of the advanced stage, from the confident expectation that the proposed arrangements will supply medical attendance for all cases that may reach that condition, by which means the specific symptoms of each individual case will receive their appropriate treatment.

In conclusion, the General Board of Health would again urge the consideration that whatever is preventive of cholera is equally preventive of typhus, and of every other epidemic and constantly recurring disease.

By order of the General Board of Health,

HENRY AUSTIN, *Secretary.*

INSTRUCTIONS ISSUED BY THE EDINBURGH BOARD OF HEALTH,

UNDER SANCTION OF THE ROYAL COLLEGE OF PHYSICIANS.

I. To avoid excess in the use of spirits—experience having shown that it is not uncommon for a fit of intoxication to pass into an attack of cholera.

II. To observe more than ordinary care in avoiding cold from light clothing or wet; and when the body has been accidentally chilled, to restore warmth by artificial means, especially by the warm foot-bath.

III. To use as substantial a kind of food as possible ; avoiding free indulgence in liquids of all kinds, and the use of uncooked vegetables, *unripe, sour*, or stone fruit, the poor kinds of small-beer, all tart sorts of malt liquor, ginger-beer, and acid drinks generally.

IV. To shun long fasts ; above all when business obliges any one to be much in places where cholera prevails.

V. To attend to the proper regulation of the bowels ; and therefore,

1. To check a tendency to looseness of the bowels. It has been everywhere found that many cases of cholera are preceded for a short time by a warning stage of looseness of the bowels ; in which stage the disease may be arrested, although it is with difficulty cured when farther advanced. When any one, therefore, is attacked with looseness, although unattended with pain or other inconvenience, he should, if possible, apply for immediate medical advice. And if advice cannot be obtained at once, he ought, in the meantime, to take a pill composed of one grain of opium, or fifteen drops of morphia-solution or laudanum in a little water ; and he should repeat the dose in an hour, if not relieved. He should also take a teaspoonful of compound tincture of cardamom undiluted, or compound tincture of cinnamon or tincture of ginger, diluted with a tablespoonful of water, or, in the want of these, a little warm brandy-and-water, and avoid at the same time all cold drinks, or much drink of any kind.

N. B.—Half the above doses for young persons about fourteen ; and one-fourth for children about five. *Opium, laudanum, and morphia, not to be given to very young children without medical advice.*

2. To correct a liability to costiveness. For this purpose, saline purgatives, such as Epsom-salt, Glauber's-salt, and effervescing powders, and strong purgatives of all kinds, or large doses of any purgatives, should not be used during the prevalence of cholera, unless under medical advice ; but only such mild laxatives as castor-oil, Gregory's mixture, the lenitive electuary, compound rhubarb pills, colocynth, and henbane pills, or any other medicine known by experience to act mildly. And any undue effects accidentally produced by such medicines should be counteracted by opium, laudanum, or morphia, as above.

VI. To attend also promptly to attacks of sickness and vomiting, which sometimes precede the epidemic, and which, after the stomach has been once cleared out, may be treated by the same remedies as those directed for looseness of the bowels.

NOTIFICATION FROM THE CENTRAL BOARD OF HEALTH, DUBLIN.

The commissioners of health, after mature consideration, do not advise that cholera should be met by an extended system of hospital accommodation, such as is needed in epidemics of fever, but recommend, in preference, a general system of prompt and efficient dispensary relief.

To afford this immediate relief, the commissioners of health recom-

mend that every existing medical institution, whether hospital or dispensary, should be open day and night, during the prevalence of cholera, to all applicants, without distinction, where all who apply should obtain, without a moment's delay, advice and medicine; and from which all the poor who may be unable to leave their dwellings, may be visited with promptitude and supplied with medicine at home, or transferred, if requisite, to hospital.

To effect these objects, the following arrangements are recommended:

1. The prescribing room of every medical institution, whether hospital or dispensary, should be open day and night, without intermission, during the prevalence of cholera, and a medical officer should be in constant attendance to prescribe for all applicants.

2. Each hospital and dispensary should have a certain district allotted to it, and the attending porter or clerk should keep a book, in which he should enter the names and residences of all applicants for relief within the district, who are unable to leave their homes. The books should show the time of application, and the name and residence of the patient.

3. A second medical officer should be constantly in readiness to receive the names of all such applicants, and to proceed without delay to visit them. The visiting physician, instead of writing a prescription at the residence of the patient, should be provided with a small portable pocket-medicine-box, containing,—

Carbonate of ammonia, in waxed papers, each paper containing 40 grains, with the following directions on the outside:—"Dissolve this powder in half a pint of water, give two tablespoonfuls every hour."

Compound powder of chalk with opium—(*Pulv. cretæ c. opio.*) in packets, each paper containing 10 grains of the powder, with printed directions:—"One powder every half-hour until the looseness ceases."

Pills of powdered opium, each containing one quarter of a grain of opium, and two grains of powdered ginger, made up with oil of peppermint, with a printed label:—"Opium pills, one every half-hour until the looseness ceases."

Pills of mercury and opium, each containing one quarter of a grain of calomel, two grains of hydrargum c. creta, (mercury with chalk,) and a quarter of a grain of opium made up with oil of caraway, with a printed label:—"Mercury and opium pills, one every half-hour."

Bottles, (one or two ounce phials, with cork stoppers,)

1. Containing—Tincture of opium (*laudanum*).
2. " Hoffman's liquor.
3. " Tincture of rhatany.
4. " Creasote.

Along with the box should be carried a small jar of strong brown mustard.

The commissioners do not recommend that fluid applications of any kind should be employed in frictions on the body or limbs, as the cold consequent on prolonged exposure and evaporation more than counterbalances any supposed good effect from friction, which, if at all used, should be made merely with the warm hand, without disturbing the bed-clothes. The commissioners also advise that when patients suffer from thirst, they should in general be permitted to drink freely, as experience shows that

the denial of drink does not check vomiting, while it increases very much the suffering of the patient, from the burning thirst that so often accompanies the disease.

PRECAUTIONS AND INSTRUCTIONS FROM THE COMMISSIONERS OF HEALTH.

Shun damp and low situations, and, if possible, quit dwellings in such places, during the prevalence of cholera; keep your houses and rooms dry, and the windows and doors open as much and as long as the weather will permit. An abundant supply of fresh air is as necessary during the night as in the day.

Remove all stagnant water and dung heaps from around your dwellings, and clean out all sewers without delay. Do these things at once, without waiting for the outbreak of the disease.

Avoid chills; do not wear wet clothes a moment longer than can be avoided. Wear a flannel belt around the stomach and loins—make use of plain and wholesome food, in the solid rather than in the liquid form—abstain from fruit, raw and ill-cooked vegetables, pastry, smoked and hard salted meats, and salted fish, pork, cider, stale or sour malt drinks, pickles, and all articles of diet that from experience are known to have a purgative effect.

Avoid purgative medicines, particularly castor oil, seidlitz powders, and salts.

Be very careful that the water used as drink is of good quality.

Abstain from stimulants unless prescribed as remedies under medical advice. In former visitations of cholera, many persons, both rich and poor, resorted to the use of stimulants,—wine, whisky, brandy, &c.,—*under the false impression that what was sometimes useful as a cure, was also good as a preventative.* This is a great error: stimulants, frequently taken or taken in excess, are followed by collapse, which predisposes to the disease, and the general health, moreover, is seriously and permanently injured by the practice. In fine, shun damp places, particularly for sleeping; breathe pure air; observe cleanliness; keep the surface of the body warm; avoid fatigues, and excesses of all kinds; use wholesome plain food; live temperately; preserve, as much as possible, a state of general good health, and you will have adopted the best safeguards against cholera.

Should you be attacked with diarrhoea or looseness of the bowels, with or without pains, and that medical advice is not at hand, go at once to bed, wrap yourself in warm blankets, roll a swathe of warm flannel, sprinkled with hot spirits of turpentine, or whisky, closely round the body, extending from the chest to the hips, and take a teaspoonful of brandy or whisky in a little water, with fifteen drops of laudanum, repeating it every hour, if the attack be not checked, until a third dose has been taken, but do not venture farther in the use of laudanum without medical advice.

By order of the Commissioners,

W. H. HOPPER, Secretary.

REPORT OF THE SANATORY COMMITTEE OF THE BOARD OF HEALTH OF THE CITY OF NEW YORK.

ISSUED JUNE 5, 1849.

NEW YORK, June 5, 1849.

In reporting to the Sanatory Committee, in relation to the Cholera at present prevailing in our city, the undersigned are happy to state that, although the disease is gradually extending among us, yet in its general character it is much milder than it was when it visited this city in 1832; that it seems more under the control of remedies: and that the proportion of deaths is smaller. These facts are consoling, and should excite in the hearts of our citizens the liveliest feelings of gratitude to a kind Providence.

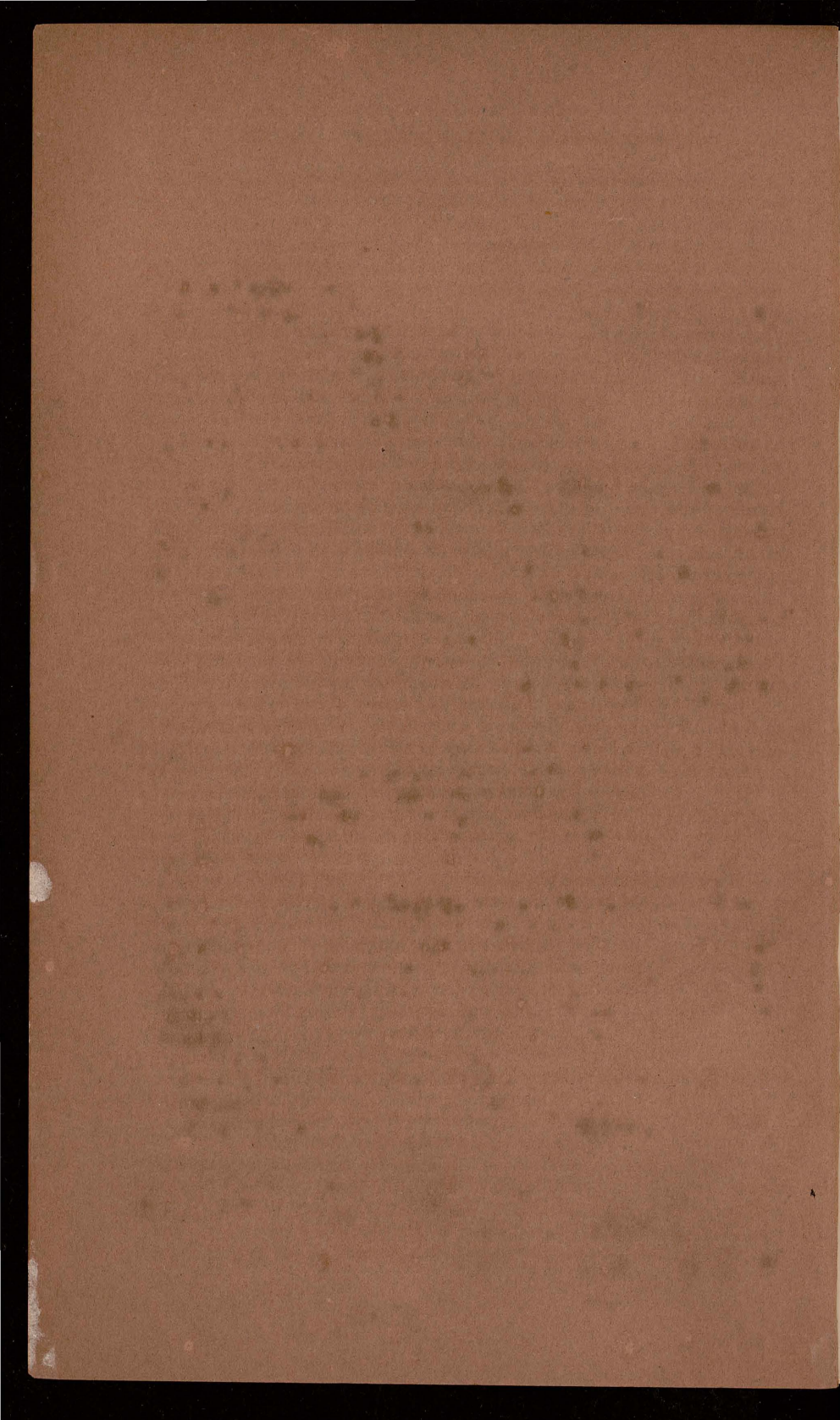
The undersigned would also state, that whatever opinions may be entertained in relation to the abstract question as to whether the Cholera is or is not a contagious disease, no evidence has appeared, thus far, that the disease at present prevailing in our city has in a single case been produced by contagion; on the contrary, everything connected with its history proves that its origin and diffusion have been dependent upon causes entirely different. The simultaneous occurrence of cases in different and distant parts of the city, between whom no sort of communication could be traced, and the immunity enjoyed by those holding constant intercourse with the sick in our Cholera Hospital, are facts which establish this point beyond the possibility of dispute. In not a single case, as yet, have either physician, nurse or visitor of our Cholera Hospital been known to contract the disease. These facts should dispel entirely from the minds of our citizens all fear in attending their friends and relations who may be attacked with the disease, and at the same time dissipate whatever apprehensions may hitherto have existed in the public mind in relation to the establishment of Cholera Hospitals in any part of our city, when called for by the demands of necessity and humanity.

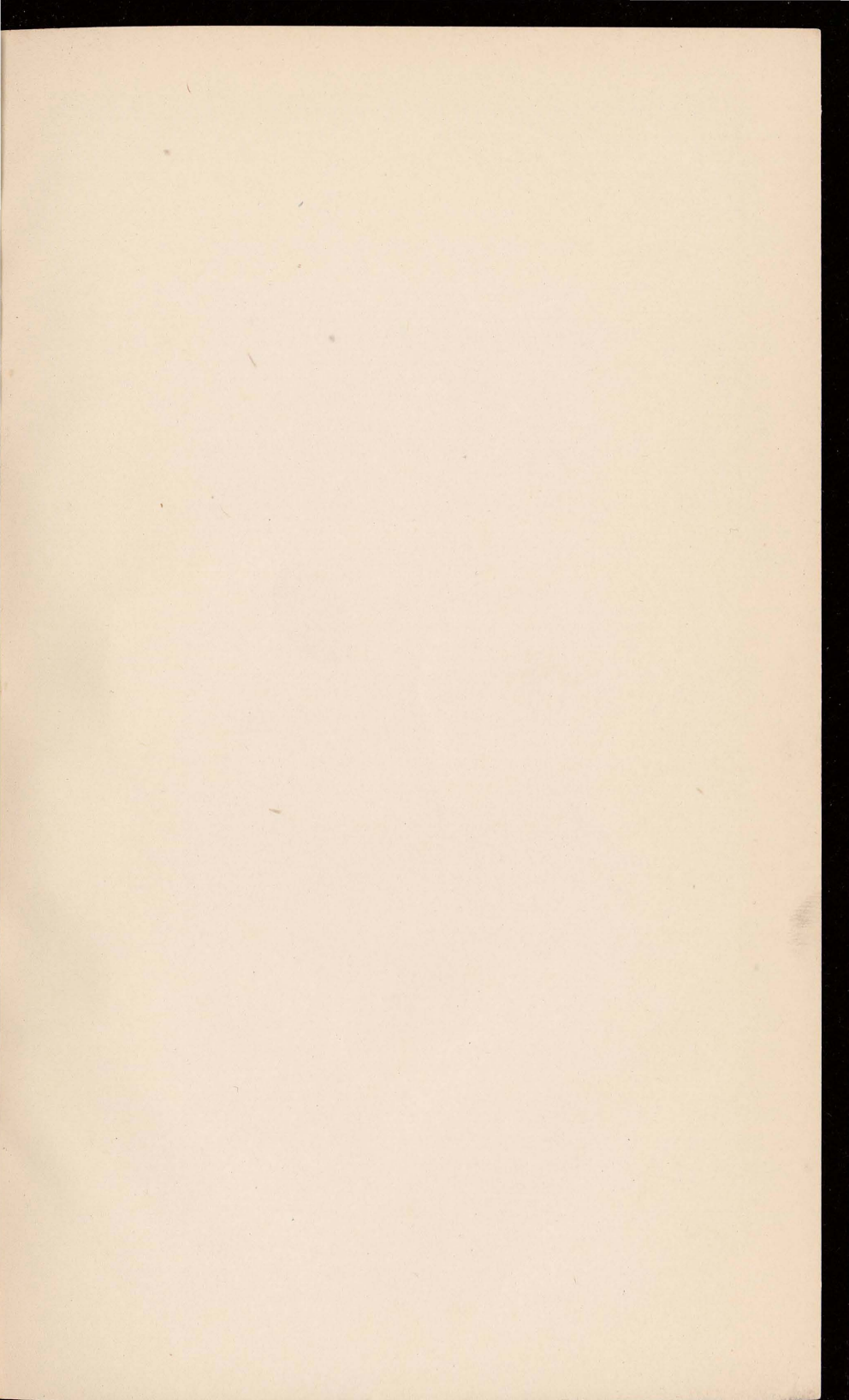
The undersigned believe that the *cause* of the disease exists in the atmosphere, and that the whole community are more or less under the influence of this peculiar condition of the atmosphere—and in this way *predisposed* to the disease. To develop the disease, however, *exciting causes* are necessary, and these are to be found in all those things which have a tendency to disorder the bowels. With regard to the peculiar condition of the atmosphere which predisposes to the disease, we know nothing. Human skill and agency therefore can do nothing in meeting this difficulty. The exciting causes, on the contrary, are in a great measure under our control, and by properly guarding against these, much—very much may be done in obviating the development and extension of the disease.

JOHN B. BECK, M. D.	} Medical Counsel.
JOSEPH M. SMITH, M. D.	
SAM'L W. MOORE, M. D.	

SETH GEER, M. D., Resident Physician.

RICH. L. MORRIS, M. D., Health Commissioner.





Ayre, Joseph, *Cholera: its nature, symptoms, and treatment*,
WC 262 A984c 1849

Condition when received: Page 28-29 was marred and appeared to have been stepped on with moist, muddy shoes. The stains obscured text.

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