Pattison (G. S.)

LETTER

ON CHOLERA,

FROM

PROFESSOR PATTISON,

TO

DR. CARMICHAEL,

OF VIRGINIA.

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The great reputation of the writer of this letter; the universal attention which it has excited above every thing else which has appeared upon the subject of Malignant Cholera, *although it originated merely as an answer in a private and friendly correspondence;* and the demand in every direction for the newspapers which have inserted it, have induced the publisher to print a large edition of it in a separate form.

LETTER FROM DR. PATTISON.

JEFFERSON MEDICAL COLLEGE,
Philadelphia, Sept. 3, 1832.

MY DEAR CARMICHAEL,—Your letter of the 23d of August would have been replied to before this time, had my engagements allowed: but my time has been so much occupied with architects, builders, &c. &c. and other matters connected with Jefferson Medical College, (which I am glad to say gets on most prosperously,) that I have had every hour engaged. Moreover, to answer your inquiries on the subject of cholera, is no easy matter. On the nature and treatment of this disease, the minds of medical men are much divided. In offering an opinion, therefore, it is necessary to refer to the opinions of others. I must beg at the same time most distinctly to disclaim any attempt in this letter to enter into a full history of this epidemic. I shall content myself with stating to you briefly the views which have been suggested to my own mind from reading, and from my personal observation of the disease both in this country and in Europe. I offer no claim to originality in my observations, for most of them may be found, with certain modifications, in the works of others.

You request my opinions on the following topics, and to them my observations shall be confined.

1st. Is Cholera Asphyxia contagious?

2d. What causes operate in its production?

3d. What system of treatment has been found the most successful?

You will agree with me, I am sure, that the question, whether a disease is, or is not contagious, although it may appear, to a mind unaccustomed to the investigation of medical truth, one easy of solution, is, in reality, one of all others the most difficult to decide, on philosophical principles.

The causes which bring into existence epidemic diseases, operating as they do on particular districts, subject all the members of the communities who reside in them to their influence. They exist, however, in the same district in various degrees of intensity, dependent on particular local causes. Now, the fact, which I admit, which has been so much insisted on by the contagionists, viz. that it is a very common occurrence for several members of the same family to be attacked, almost simultaneously with cholera, cannot be received as evidence of its being a contagious disease; all the members of the family have lived under the influence of the same predisposing cause. This cause may be present in a higher degree of intensity in the particular location of the dwellings of those who become affected than in the other houses in the neighborhood, and this being admitted, will furnish a much better solution of the facts, than referring to contagion to explain why they have been affected when their neighbours have escaped.

This view of the subject is perfectly philosophical, and may be supported by strict analogical reasoning. Let us illustrate this by taking a neighborhood where the common intermittent fever of the country prevails. All of the members of that particular neighborhood are liable to be affected with intermittent fever, yet all are not attacked. In certain families, not a single case occurs, in others you have one or two cases, and in a third, every member of the family is attacked. The most determined contagionists will not pretend to say, where all are affected, they are affected through the medium of contagion, yet it would be just as philosophical to bring forward such a fact to prove that intermittent fever is a contagious disease, as to conclude from the circumstances above stated, of its not being unusual for several members of the same family to be attacked with cholera, that its contagious nature was demonstrated.

In investigating the question of the contagious or non-contagious nature of the cholera asphyxia, I have endeavoured to divest my mind of every bias, and after much reflection on the subject, and after having had extensive opportunities of observing the disease both in Europe and in this country, I have been led to the decided conclusion, that the disease is not contagious, in the usual acceptation of that term.

I shall state very briefly a few of the leading facts on which my opinion, as to the non-contagious nature of the cholera rests, and I think they will be considered by you as satisfactory and conclusive.

First. Let us take a short review of the progress of cholera in Great Britain. I may premise by stating, that as I write only from memory, I cannot be precise as to dates: these, however, do not affect the argument. The disease first made its appearance at Sunderland, and although the communication between that town and the neighborhood was perfectly open and unrestricted, it remained confined to the town for some months. From Sunderland it moved to New Castle, and what is a most remarkable fact, and worthy of particular observation, although the town of Gateshead is only separated from the town of Newcastle by the river Tyne, the disease existed in the latter place for nearly a month before a single case occurred in the former. In Gateshead, although the most unrestricted communication was kept up between its inhabitants and those of Newcastle; although hundreds of them were in the daily habit of visiting the cholera patients, not one solitary case occurred amongst them, until the night of the 25th of December. On that night the Destroying Angel crossed the river, an atmosphere *essential* to the propagation of the epidemic was established, and in twenty-four hours, fifty-five cases and thirty-two deaths occurred in Gateshead!! Did such an occurrence ever take place in the progress of a disease admitted to be propagated through the medium of contagion? A population in daily communication with a diseased, one, remains for a month free from disease, and in one night fifty-five of those who before appeared proof against it, become affected!!! From Newcastle the disease passed into Scotland. It did not take the line of road to London, along which the hundreds are passing, but it goes in a northern direction along the route followed by the tens. Had it, however, in its progress kept up a continued chain; had it, as it travelled north, affected the towns and villages situated along its course, the fact of its being propagated by the few, rather than the many, could not be brought forward as an evidence of its not being dependent on contagion. But the fact is, it did not

pursue a continuous line. From Alnwick it takes one leap to Haddington, a distance of above one hundred miles, leaving the whole intermediate towns and villages without a single case of cholera. Having remained for a short time at Haddington, it strikes Musselburgh, a small town a few miles distant from it in a northwestern direction, and there its ravages are dreadful.

Musselburgh is only five miles from the city of Edinburgh. It is occupied principally by fishermen, whose wives bring the fish every morning into Edinburgh. Now, although hundreds of these women were in the daily habit of visiting Edinburgh, many of them coming from the very houses occupied by the dying and the dead; although, in retailing their fish, they entered the dwellings of the inhabitants of the city; although the intercourse was uninterrupted, still it was many months afterwards before a single case of cholera originated in the city of Edinburgh. It is true two individuals residing in Edinburgh were attacked, but these persons had slept at Musselburgh in the affected atmosphere, which sufficiently explained the cause of their illness.

From Musselburgh, the cholera passed not to Edinburgh, but to Kirkintillock, a small town situated on the great canal which unites the Firth of Forth to the Firth of Clyde. This little town has a population of about 3000 souls. It is situated six miles from the city of Glasgow, in a north-east direction, and is occupied almost exclusively by weavers, who are employed by the manufacturers of Glasgow. The communication between Kirkintillock and Glasgow, is of a character the most favourable for the propagation of a contagious disease, hundreds of weavers being in the daily habit of visiting Glasgow, bringing into the warehouses the cloth which they have finished, and returning with new webs. There was no quarantine placed on this kind of intercourse, but it was suffered to continue, without any restrictions. The webs which were finished, were, in many instances, literally brought from the very houses of cholera patients. No fumigation was employed, but they were at once sent out to be tamboured or sewed. Was there a single instance occurred amongst the manufacturers receiving their webs, or the females who tamboured or sewed them in their small confined rooms in which cholera occurred? *Not one solitary instance.* Glasgow remained perfectly free from the disease for nearly six weeks after it had appeared in Kirkintillock, and when it did appear there, it was quite evident that it was not introduced directly from that town. The fact of its first appearance in Glasgow is a remarkable one, and I am not aware of its having yet been published; being myself on the spot at the time the occurrence took place, I can attest the particular facts of its invasion.

After the disease had remained stationary in Kirkintillock for about six weeks, in one night it struck Kelvindock, Partick, Glasgow, and Paisley. The manner in which these towns are connected by water communications is rather remarkable, and seems to prove a fact much insisted on by some writers as to the tendency which cholera has to move along water courses. The canal, on the bank of which Kirkintillock is situated, about five miles from that town, is conveyed by an aqueduct across the river Kelvin. Immediately under the aqueduct the village of Kelvindock is situated. Four miles below this, on the river Kelvin, is placed the village of Partick, and a mile lower down the Kelvin empties itself into the river Clyde. Five miles below the mouth

of the Kelvin, the river Cart, on which Paisley is built, enters the Clyde; and two miles above the entrance of the Kelvin, the city of Glasgow is situated. *Cases of cholera occurred in a single night in all these places.*

It is unnecessary to reason on these facts, and it would be quite foreign to the object of this letter to do so. To my mind, and I should think to that of every unprejudiced person, they must be considered as perfectly conclusive. If my space would allow, I might adduce *special* facts to establish the non-contagious nature of cholera: I shall only state one. In India it is by no means an uncommon occurrence for a regiment coming out of a cholera district, some of the men affected with the disease, and many of the others carrying its germs to enter a large camp. Yet although one-third of them may be carried off whilst encamped; although the soldiers of the other regiment have free intercourse with them, still the ravages of the disease are confined to the regiment which has been in the affected district, and not a case occurs in any other corps.

Although my views as to the propagation of cholera are decidedly opposed to those entertained by the contagionists, still I am prepared to grant that if that peculiar *atmosphere* exists *which is essential to the production of the disease*, an individual living in it, who may from debility or any other cause be predisposed, will be more liable to be affected, should he visit confined rooms occupied by cholera patients, or the wards of hospitals crowded by them. A cholera atmosphere is a vitiated one; it predisposes those who live under its influence to be affected with cholera, but if surcharged with the effluvia and excretions emanating from the bodies of the sick, its noxious character may be greatly increased. Every thing which tends to purify the atmosphere, although it cannot destroy the cholera influence which exists in it, operates most beneficially in diminishing its intensity, and *vice versa.* This is an axiom worthy of consideration, and one which cannot be too forcibly impressed on the attention of municipal authorities. Its truth has been sufficiently demonstrated in this country, where cities seemed to have suffered more or less, just in proportion as cleanliness has been more or less attended to. Neither a *cordon sanitaire*, nor the strictest quarantine regulations, will ever prevent the extension of the cholera asphyxia; but a rigid code of rules for the cleansing of cities, and a most rigorous enforcement of them by a vigilent system of police, although it may not prevent the disease from manifesting itself, will have a most decided and salutary influence in mitigating its malignity, and saving from its ravages thousands of victims.

II. *What are the causes which operate in the production of Cholera Asphyxia?*

The subject of atmospheric influences in the production of endemial or epidemic diseases is one on which science has, as yet, been unable to shed much light. Even chemistry, in her triumphant progress, unveiled as she has of late years done, the most mysterious of nature's *arcana*, has, in her inquiries into this subject, failed to elicit any satisfactory explanation of the cause. No medical inquirer doubts but that the intermittent and remittent fevers in this country are produced by *malaria.* Yet, the difference between a healthy atmosphere, and one charged with *malaria*, cannot be detected by the most careful chemical

analysis. It is just so in cholera. Facts furnish the most unquestionable evidence to prove, that where this disease exists, the state of the atmosphere is altered; but, in what this alteration consists, whether on electrical, magnetic, or other changes, is altogether problematical.

III. Symptoms and Treatment.

The symptoms which precede an attack of cholera asphyxia vary in different cases, both in their severity and in their continuance. In some instances, the health is deranged for several weeks before the symptoms which characterise the disease manifest themselves. In some *rare* cases, until within a few hours of the attack, the general health remains unaffected. But although this does occasionally happen, it may be proper to observe *that premonitory symptoms in at least ninety-nine cases in the hundred precede the attacks of the cholera asphyxia.*

These symptoms consists of lassitude, a painful sensation in the region of the stomach, loss of appetite, occasionally nausea and diarrhœa. Of all these symptoms, the last is the one which will be found most regular, and it is one, on the existence of which, no doubt can exist either in the mind of the patient or of his medical attendant. IT IS IMPOSSIBLE TO PRESS TOO STRONGLY OR TOO FREQUENTLY ON THE PUBLIC ATTENTION THE FACT, THAT CHOLERA ASPHYXIA IS ALMOST INVARIABLY PRECEDED BY DIARRHŒA. Were I to speak simply from my own experience and observation, I should say that this premonitory symptoms *is never absent* and that the more characteristic features of the complaint *never exhibit themselves without being preceded by diarrhœa.* But, although my own experience would warrant me to make this assertion, I have certainly heard of a *few cases*, and the authority I cannot question, in which there has been no premonitory diarrhœa, but where the patient has been at once seized with the rice-water vomiting and purging, and spasms, succeeded almost immediately by the stage of collapse.

In no disease do the symptoms follow precisely the same order in each particular case. The symptoms I have above detailed generally precede an attack of the cholera asphyxia; but all of these symptoms are not to be considered as necessarily existing in ever case. To illustrate the usual course and progress of the disease, I shall suppose a case. A. B. becomes affected, without any assignable cause, with a feeling of lassitude and an indisposition to exertion; the appetite, before good, fails; uneasy sensations are felt in the region of the stomach; they scarcely amount to pain, but produce an undescribable feeling of sinking in the epigastrium. The bowels become irregular, and a diarrhœa, producing from two to ten, or even more, dejections daily, supervenes. The patient is now in a state of the greatest jeopardy. By energetic and judicious medical aid, he may yet be snatched from the grave; but he literally stands on the very brink of it. *Not an hour—no, not a moment is to be lost.* If you would save your patient, adopt the scripture maxim, "That which thou hast to do, see that thou doest it quickly." We shall suppose the patient to be neglected, and trace his case through its progress. In some instances the diarrhœa continues for ten or twelve days before the marked symptoms of the disease exhibit themselves; generally, however, the term of its continuance does not exceed forty-eight hours after the first diarrhœal discharge. In general the diarrhœa continues until the more

characteristic features of the disease present themselves; but the medical practitioner must recollect, that this is not always the case; for, in some instances, the diarrhœa spontaneously disappears, and the bowels, before lax, become more torpid than natural for twenty-four or forty-eight hours before the specific attack supervenes.

This fact ought to be carefully borne in mind by the physician. Although the diarrhoea has ceased, he is not to allow himself to be deceived and to suppose the danger is past; on the contrary, should the patient, on being questioned, state that he "does not feel perfectly well," that he "*is out ofsorts*," although he cannot say exactly "what is wrong with him;" and if, on examination, a peculiar expression is observable in the countenance, rest assured the germs of the disease are still present in the system, and treat him accordingly. Although there is occasionally a cessation of the diarrhœa, this is not common; it usually continues until it ushers in the second stage, the one which more strikingly distinguishes the pestilence. The dejections, which, in the first instance, were ~~not distinguishable from those of a common~~ diarrhœa gradually lose their feculent character; they become more profuse, and resemble first dirty water with white flocculi floating in it; and afterwards, a thin gruel or rice-water. So soon as the stools assume this alteration, the cholera asphyxia may be said to be fairly formed; and the effect on the system is immediate ando
nausea, vomiting, giddiness, and violent cramps of the muscles of animal life, particularly those of the extremities, then occur. On the manifestation of these symptoms, there is a rapid sinking of the vital powers, and unless they are instantly checked, the patient sinks into the stage of collapse.

A cholera patient in the stage of collapse, presents, even to the physician, a most appalling spectacle. It seems, indeed, as if the spirit after having for some weeks left its mortal habitation, had again, in an enfeebled state, been restored to it. There is sense—there is motion—there is a a hollow unearthly voice; but there is the ghastliness, the lividity of death stamped on the countenance. The body is cold and pulseless, the tongue has lost the warmth and elasticity of life; it is soddened and yields to pressure like a piece of dead muscle, and the breath, as slowly expired, feels of an icy chilness. It is not like the breath of a living man, but like the cold damp air which issues forth from a charnel house.

The degree of lividity or blueness which is present in the stage of collapse, is very variable. For my own ~~part, I consider~~ the term blue, as employed to characterise the color of the surface of the body, as an unappropriate one. It may amount to blueness in the extremities of the toes and fingers; but, it is very rare that it assumes this color over the whole of the body. It is more lividity than blueness. In fact, we may easily produce an expression, as nearly as possible resembling the one which exists in cholera patients during the stage of collapse, by burning in a dark room alcohol, in which a quantity of common salt (mur. sodæ) has been mixed. The change which this produces on the countenance, when burned before it, is very remarkable, and offers as nearly as possible a picture of the skin of a cholera patient during the stage of collapse. But, although this experiment will furnish you with the peculiar hue assumed by the skin during the collapse,

it does no more. The expression of the countenance during this stage is very remarkable; the features are contracted and *hippocratic;* the eye has lost it lustre, and is covered with a thin film; it is sunk deep in the socket, which is surrounded by a dark brownish areola.

The dejections and spasms very frequently cease after the stage of collapse has been fairly formed; whilst in other instances, although their severity is mitigated, they continue till the close of the scene. Whether these *special* symptoms should or should not continue, the patient suffers from an intolerable feeling of uneasiness and oppression; he tosses about in his bed, constantly throwing the bed-clothes from his breast, as if the weight was oppressive to him. He complains of insatiable thirst, and beseeches his attendants to allow him cold water. The mind, although torpid, will be found perfectly collected, and continues so until the final extinction of life. Indeed, I have often got a patient to answer me, distinctly and correctly, a question I had addressed to him, not more than a minute before he expired.

Such is a brief detail of the symptoms which are usually attendant on the cholera asphyxia. As I before observed, the order in which they appear, and the manner in which they are combined, vary in different cases. The premonitory symptom of diarrhœa, is the most regular; *it is very, very rarely absent;* and it is a most happy circumstance that it is so. It disarms the pestilence, in a great measure, of its terrors. Like the rattle of the rattle-snake, it forewarns the individual of the fearful position in which he stands; and if the warning in either case is only attended to, life may almost with equal certainty be preserved.

The medical practice which has been pursued in the treatment of the cholera asphyxia, has been of the most various and contradictory character; and, although the disease has now been under the observation of physicians since the year, 1817, and has since that time carried off about *sixty millions* of people, still, we are nearly as much in the dark as to its nature, and apparently as far from having discovered any specific for its cure, as the medical men in India were on its first invasion. I shall not pretend to detail to you all the remedial methods I have seen pursued, but shall content myself with stating, very briefly, the indications I have in view, and the plan which I adopt in the treatment.

Every medical man above the rank of a mere empiric, must, in the treatment of diseases, be guided by the views which he entertains of their nature. He forms certain opinions as to the causes of the particular affection he is called on to treat, and the indications which direct his practice, are pursued for the purpose of obviating or removing them. In no science is the introduction of a system of generalization more pernicious in its consequences, than in medicine, and, unfortunately, in none has it been more frequently employed. To proclaim a series of propositions, and to deduce from them a unity of disease, carries with it something exceedingly attractive to the mind of youth. It conveys with it so much simplicity, it removes so many difficulties, and, in fact, obviates so much trouble in thinking that it is not surprising that its fascinations should with many be irresistible, more especially when its *theorems* are clothed by the genius of its promulgator with all the eloquence of language, and their truth attempted to be enforc-

ed without regard to facts. I should be very unwilling to accuse any man of deliberate falsehood. The minds of the Inventers of Systems become so infatuated with their own views, that their very senses become perverted. Their eyes can see, *at least when assisted with a powerful microscope*, vessels, aye! and vessels in a state of inflammation, which are altogether undistinguishable by those, whose minds and senses have not become subjugated to their doctrine; or should their hypothesis rest on the absence of inflammation, the most characteristic appearances of that state, immediately disappear from their vision. This appears strange and unaccountable to the physician, who is guided by the philosophy of Bacon in his investigations of medical truth Anxious himself only to arrive at truth, and submitting *all* his observations to that unerring standard for estimating their value, induction, he may perhaps think that even the pride of system offers no sufficient apology for the denial of palpable facts, and the perversion of the clearest and best established truths.

Would any person believe it possible that an intelligent physician, one imbued with the learning of his profession, could assert that the system of Brown was the one on which the British practice of medicine was wholly predicated, that stimuli, and stimuli alone, embraced the whole of the *modus medendi* of English physicians? Will it be credited that M. Broussias has made this assertion, and that he has further, in despite of the hundreds of treatises which have been published on cholera asphyxia, by British physicians, detailing and recommending every plan of treatment which can be conceived, from the most stimulating to the most depleting, declared, that their method of treating the cholera is purely stimulating, and consists in "administering spirituous liquors, such as brandy, gin, rum, not only pure, but impregnated and saturated with aromatics, and other irritating substances?" &c. What would we think of the philosophy of the man who would publish the following proposition, and deduce from it the following conclusion: "Gastritis is an inflammation of the stomach. If called to treat a case, should you prescribe 'brandy, rum, gin, not only pure, but impregnated and saturated with aromatics, and irritating substances?' The treatment you adopt would be very injudicious; but at the same time let it be observed, that you will be much more apt to cure the inflammation by prescribing 'brandy, rum, gin,' &c. then leaving the case to nature, and doing nothing. In a word, stimuli are pernicious, but 'it is better in effect to expose the patient to extreme stimulus, than to leave him to perish.'" It will, I think, be admitted, that were any man to promulgate such a doctrine, he would be considered as absolutely divested of reason; yet astounding and incredible as it may appear, a doctrine of a character precisely the same, has been promulgated by Broussais, in his late lectures on cholera.

"*Cholera morbus*," he observes, "*is essentially an inflammatory affection. This is my conclusion. The inflammation attacks the whole extent of the digestive canal*," &c. &c. Now observe the corrollaries. "This terrible malady, when abandoned to itself, is *uniformly mortal*, while it is curable, in different degrees, according to the treat-

ment and the conditions by which it may be modified. There are three different ways, then, in which the disease may be treated. 1st. By pure stimuli. 2d. By a stimulating and debilitating treatment. 3d. *The physiological treatment.*" Again, in another passage, he observes, "*it is better in effect to expose the patient*" (admitted to be laboring under severe inflammation) "*to extreme stimulus, than to leave him to perish.*" This is a doctrine published by M. Broussais, the author of the "Physiological System," so termed by him "*par excellence,*" as if, forsooth, there was any thing new in the application of physiology to the elucidation of the phenomena of pathology. The observation made, if I recollect right, by the venerable Sommering, in relation to the system of phrenology, may, with much truth, be applied to what the vanity of its author has designated the "Physiological System!" "*What it contains new, is not true; and what it inculcates which is true is not new.*" You will excuse me for this digression. I have been mortified to discover, since my return to the United States, that the fascination of this most specious but erroneous system, has found some admirers in this country, and I dread the consequence of its more general adoption. Wo to that district of country where the sick are treated on the "Physiological System." If it is asserted, as it has been, that the cholera asphyxia, and the violent fevers of this country are to be cured by applying half a dozen leeches to the epigastrium, and giving the patient a little ice or gum water, I shall only say, "*Credat Judæus.*"

The view which I am disposed to adopt, as to the pathology of the cholera asphyxia, has nothing in it of originality. It is the one which was first promulgated by Loder, of Moscow, and since taught by Lœwehagen, Coste, and the celebrated Delpech, of Montpelier, with many others. It is, that the seat of the disease is situated in the ganglionic system of nerves. That the morbific agent which generates the epidemic, has the effect of operating *specially* on this system of nerves, producing, according to some, inflammation in their neurilema, and according to others, mere diminished functional power. I am inclined to adopt the latter opinion, viz. that the nerves are not inflamed, but that their functional operations are weakened, and that if means are not employed to remedy the evil, they will probably become ultimately paralyzed. This opinion, I admit, rests wholly on speculative *data*, and were I to attempt to convey to you my reasons for giving it a preference, it would be necessary for me to enter at large into the physiology of the nervous system, and to adduce numerous facts from pathological anatomy. Instead of filling the pages of a letter, (and this one, I find, let me abridge my observations as I will, you may consider already too long,) it would occupy a volume. I refrain, therefore, from entering into an investigation of the pathology of the disease, and proceed at once to offer for your consideration a few remarks on the treatment. I shall consider this, 1st. During the premonitory stage; and, 2dly. When the affection is fairly formed, and when the disease can with certainty be ascertained to be the cholera asphyxia.

When the epidemic exists in any particular district, the state of the bowels must be attended to with the most watchful solicitude, and the most trifling irregularity at once remedied. I have before been at some pains to press on your attention the fact, that in almost every

instance, the malignant form of the disease is preceded by diarrhœa, and I would now state that in this stage the complaint may, with certainty, be remedied. The diarrhœa indicates mere functional derangement; remove this, and restore the healthy secretions of the liver, stomach and the other viscera which minister to the functions of digestion and assimilation, and you save your patient. The treatment is very simple. Immediately on ascertaining the existence of the diarrhœa, direct your patient to take one of the following powders:

℞ Pulv. Rhei	sc. iv.
Sub. Mur. Hydr.	sc. j.
Sulph. Morphæ.	gr. j.
et divide in pulver. æquales.	No. iv.

Should there be much pain and oppression in the epigastrium, and more especially, should the pain be increased by pressure, apply from fifteen to twenty cups over this part, and if the patient be of a plethoric habit, take blood from the general system. Six hours after the powder has been taken, give from six drachms to an ounce of castor oil. The dejections will be found unnatural in their appearance, and should they continue so, let the powder be repeated twelve hours after the operation of the first one has ceased, and follow it up, as in the former case with a dose of oil. Continue this treatment until the excretions become natural. Let the patient keep his bed, and take the lightest and most digestible food, and in the course of a few days his health will be perfectly re-established. I have never yet, in the whole course of my experience, had an opportunity of treating a patient during the premonitory stage, in which I have not succeeded in arresting the progress of the disease. This is a most consolatory truth, and one which cannot be too extensively proclaimed. It disarms the pestilence, in a great measure, of its terrors, and it should have the effect of calming the minds of the timid, and inspiring them with confidence. Fear is, of all the exciting causes, the most powerful. By the publication of these facts, prove that there is no ground for it. By attention to diet, and immediately applying for medical aid, should the premonitory symptoms arise, every individual may feel himself secured from danger.

Should your patient not have applied to you for advice until the first stage is verging on the second, the most energetic system of treatment will be required to afford him any chance of recovery.

So soon as the dejections lose their feculent character, and assume the appearance of rice water, then the disease may be said to be entering on its second and most alarming stage. The effect on the system, when these dejections commence, is immediate. The strength is prostrated; the countenance becomes contracted and ghastly; the spasms become more frequent and more severe, and in general, the distressing sensation in the epigastrium is increased. If the case is now left to itself, collapse very speedily takes place; and indeed, very often in spite of the best directed treatment this comes on. It would require me to fill a ream of paper were I to attempt to speak of all the plans of treatment which have been recommended; I shall refrain from doing so, and shall confine my remarks to the indications which guide my own practice, and the measures I pursue in carrying them into effect. Before I do so, I beg leave to remind you, that I put in no claim to originality either in my views as to the nature of the disease, or as to the

mode of treating it. My mode of treating cholera asphyxia is in fact, the one which has been so successfully adopted by many of the British physicians in India.

Believing, as I have already stated, that the disease depends on functional derangement of certain viscera, particularly of those which fulfil the operations of digestion and assimilation; in every stage of the disease, my indication is to restore the healthful performance of those functions. Now, of all the medicines which can be employed for this purpose, calomel is decidedly the most powerful, and to it I look as the sheet anchor of hope. Let all your remedial measures, therefore, be so directed as to promote the operation of mercury on the system. If your patient complains of much pain in the epigastrium, let cupping glasses be applied; and if the pulse will bear it, bleed from the general system. In the employment of general bloodletting, considerable judgment is required, and in determining the quantity, the pulse must be our guide. Even should the pulsation at the wrist be scarcely perceptible, still, if other symptoms should indicate the propriety of bleeding, be not deterred from employing it; you will frequently find that as the blood flows, the pulse becomes more and more distinct. If so, continue the bleeding until the pulse begins to feel it. The *instant it sinks*, apply the finger to the wound in the vein, and prevent the flow of *another drop*. General bloodletting is calculated either to do much good, or to be attended with much danger, I will, therefore, be excused in repeating that it should not be prescribed without the most deliberate consideration of the circumstances of each particular case. Emetics may in most cases be employed with much advantage. Whenever there is feeling of oppression and sense of weight in the region of the stomach they may be prescribed with safety. Dr. Jas. Johnston, the distinguished editor of the Medico-Chirurgical Review, a gentleman who I consider as decidedly one of the very first physicians of the present age, and whose learning of the science of his profession is only equalled by the acuteness and accuracy of his judgment, has strongly recommended emetics of mustard and water in cholera, with the view of removing the congestion which he believes exists in the viscera. Mr. Searle, an army surgeon, who has likewise published a work on the subject, is also a warm advocate for emetics on similar principles. This gentleman, who went to Poland for the purpose of devoting his services to the unfortunate Poles, had charge of a cholera hospital at Warsaw, and was there in the habit of using very extensively emetics of salt and water. It was from Mr. Searle's practice that the salt and water emetic was first introduced into the treatment of cholera in Russia. I prefer the salt and water emetic to any other which has been recommended. Its operation is immediate, and so soon as it has produced free vomiting; its nauseating effect goes off. You will frequently be much struck with the matter dejected by vomiting; substances which may have been taken into the stomach days before, will occasionally be thrown up unchanged, a sufficient evidence of the impaired condition of the digestive functions. Should you when called to a case of cholera, be of opinion that vomiting may be required, you will, of course, employ it immediately, as until its operation is over, you need not commence the calomel. So soon as the vomiting from the emetic has ceased, begin with this most valuable remedy.

Some practitioners recommend the calomel to be used in large doses. From my experience, I would prefer giving it in small quantities, repeating the doses frequently; of course the quantity, and the frequency of giving it, must be regulated by the circumstances of each particular case. One of the following pills, I would give every half hour. *The pills ought to be freshly prepared.* If they have been made for some days, they become hard, and remain some time in the stomach before they are dissolved, and every moment is of value in treating this disease.

R. Sub. Mur. Hydr. sc. ijfs.
Pulv. Capsic. gr. xij
Sul. Morphiæ. gr. ij.
m form. mass. c. m. g. arab.
divide in Pilulæ æquales, No. x.

It will be observed, that each of these pills contain the 1-5th of a grain of the sulphate of morphia. This I consider a most valuable remedy in quieting the stomach and relieving the spasms. But it is one which must be employed with judgment. The indications for its employment are the vomiting and spasms; and so soon as it relieves these symptoms, it should be discontinued. It is probable, after three or four of the pills have been taken, these symptoms will disappear: or, at all events become much mitigated. Should this be the case, pills containing merely calomel, should be substituted for those with the morphia. You had better direct your patient to take the calomel pills every half hour, until about thirty grains have been taken; after this quantity has been swallowed, diminish the dose, and let him take only 3 grs. every half hour. The medicine may be continued in this quantity, and taken at these intervals, until from a scruple to half a drachm more of calomel is taken, after which you had better allow the patient a short respite. Should the calomel not of itself produce feculent dejections, after it has remained in the system for some time, it will be useful to give a powder containing twelve grains of calomel and one scruple of rhubarb, and the operation of this may be promoted by giving some hours afterwards, a dose of castor oil. The great object I would recommend you to have in view, is to introduce into the stomach a considerable quantity of calomel in divided doses, and then to endeavor to obtain feculent dejections. When the rice-colored dejections are changed into feculent ones, the danger is in a great measure at an end; but persevere in the use of the calomel, until the healthy secretions are fully re-established. When the stools become natural, and when the secretion of urine, which had been completely stopped, is restored, your patient is cured. All that is further required, is rest in bed for some days, and care to avoid taking any but the lightest and most digestible articles of food.

I do not pretend, in this letter, to enter into a detail of the treatment. I merely wish to call your attention to the leading indications which guide my practice, and the principal means I employ for their accomplishment. I am one of those who am decidedly opposed to the treatment of disease on systematic principles. The mind of the physician being imbued with the learning of his profession, and richly stored with physiological and pathological facts, should treat symptoms and not diseases. The system of John Brown, has sacrificed thousands of

lives; and the system of Broussais, if once allowed to become the prevailing guide in the practice of American physicians, will destroy the lives of tens of thousands. Fortunately, however, the warmest disciples of this pathologist, although they preach his doctrines to others, do not practice them themselves. If you look into the cholera hospitals, managed by the wildest enthusiasts of Broussianism in the United States, you will find that their faith in the assertion of their master, is not sufficient to induce them to believe him, when he asserts that he did not lose more than "one patient from cholera, out of thirty or forty," when he treated them by the application of a few leeches to the abdomen, and gave them, internally, pounded ice. At least, if they do believe him, their good sense constrains them to pursue a much more energetic practice. Guided by symptoms, you will give or withhold stimuli, as the circumstances of the particular case may seem to require; and, in fact, bearing in mind your great indication, to restore the healthful action of impaired functions, treat *special* symptoms with *special* remedies.

The injection of the solution of the mur. sodæ, (common salt,) into the veins, is a remedy which has lately attracted considerable attention. I can offer no opinion as to its value from my own observation, but from the effect it produced in a case where it was employed by my distinguished colleague, Dr. George McClellan, a gentleman whose zeal and acquirements in medical science, you are well acquainted with, and justly appreciate, I should feel disposed to use it in very desperate cases, where ALL other means have failed in rousing the vital functions. The case I refer to, was that of a woman in the last stage of collapse. When Dr. McClellan was called on to inject the veins, life seemed at its close, and no person would have conceived it possible to have prolonged it for an hour. My friend was not, however, discouraged, but immediately threw with a syringe, into the median vein, seventy ounces of water, in which a small tea-cup full of salt, (about three ounces,) had been dissolved. The effect was most miraculous. The energies of the system were restored, and the patient lived for more than one hundred hours afterwards. As Dr. McClellan was merely called on to perform the operation, and had nothing to do in directing the after treatment, I am not aware in what it consisted. The case is an interesting one, proving as it does that even in the very worst cases, the energies of life, may, at their last ebb, be restored, and time allowed for the operation of remedies. It is, however, only in very desperate cases, that I would use the injection of a solution of salt; and let it be recollected that the operation is a most delicate one, and one, the performance of which should not be attempted by a tyro in surgery.

In conclusion, I shall merely offer an answer to two inquiries which are frequently addressed to me. 1st. Would you allow the patients any drinks, and if so, which would you recommend? I would without hesitation, allow the patient to relieve the distressing sensation of thirst, so painful during the last stage of the disease: at the same time, I would endeavor to gratify him, with the introduction into the stomach of the least possible quantity of fluid. I know nothing so grateful to the patient, as allowing him occasionally a table spoonful of ice water, or even a tea-spoonful of pounded ice. You may allow him this, without

the least danger, even during the collapse. 2d. Would you apply heat during the stage of collapse? I answer, most certainly I would. I do not, however, apply heat with the expectation of *its* restoring the circulation, and bringing back the natural warmth to the extremities. The coldness is a mere symptom, and if you hope to remove it, you must attack the cause from which it originates. But, although I have no expectation, that the simple application of heat will, of itself, remove the clammy coldness of the surface; still I am satisfied it will keep the body in a more favorable state for allowing the remedies you employ to produce the effect for which you prescribe them. When the body of a drowned person is taken from the water, you apply heat; but you do not expect by doing so, to restore the functions of circulation: your sole object is to keep the body as nearly as possible in its natural condition.

The following is the most convenient mode of applying heat. It was first recommended by Mr. McIntosh the distinguished chemist of Glasgow. An iron tube, a gun-barrel for example, being twisted after the fashion of the worm of a small still, is to be used as follows. The twisted part is to be placed in a portable furnace, and when it has become red hot, a long tin tube applied to the further end is to be introduced under the bed clothes, which should be supported with sections of hoops. By introducing into the other extremity of the tube the pipe of a pair of bellows, and blowing through it, you surround the body of the patient with a heated atmosphere. A dry heat I prefer to a moist one; but any other mode for its production, which may be most convenient, can be employed. The heated air ought not to be constantly applied: the indication for its use, is, to keep the body in a suitable state for the operation of the remedies you employ, and it should only be carried so far as to accomplish this object.

As respects prophylactic measures, my advice would be confined to enforcing the strictest attention to diet, and guarding against exposure to cold. During the existence of cholera in a district, the inhabitants should refrain from the use of *all fruits*, and should even eat vegetables most sparingly; light digestible articles of food, and avoiding every thing like dissipation, are the best securities which can be adopted to guard against an attack of the pestilence. Should the premonitory symptoms arise, let medical aid be immediately called in. The poor, even those of this class who are sober in their habits, suffer much more than their brethren in the better walks of life. The cause of this is easily explained. They neglect the premonitory symptoms: citizens of a more fortunate class attend to them.

I hope sincerely that you will have no opportunity of testing the justness of the opinions contained in this letter. The treatment of the cholera is, to the medical practitioner, not only the most unprofitable, but at the same time the most distressing duty which his profession can impose on him. It requires him to labor night and day, and very often, in spite of all his exertions, and in defiance of the best directed system of treatment, his efforts to save life are unavailing; that is to say, if his assistance is not called for until the disease has been suffered to assume its malignant form.

Believe me, always, my dear sir, yours most faithfully,

GRANVILLE S. PATTISON.

To Dr. CARMICHAEL, Fredericksburgh, Va.