SHOULD

THE CHOLERA COME,

WHAT OUGHT TO BE DONE?

BY

JOHN CHALLICE,

SURGEON, &c.

"Ωσπερ ἂν εἴ τις ἰατρὸς, ἀσθενοῦσι μὲν τοῖς κάμνουσιν εἰσιὼν, μὴ λέγοι μηδὲ δεικνύοι δι' ὧν ἀποφεύξωνται τὴν νόσον· ἐπειδὴ δὲ τελευτήσειέ τις αὐτῶν, καὶ τὰ νομιζόμενα αὐτῷ φέροιτο, ἀκολουθῶν ἐπὶ τὸ μνῆμα διεξίοι, Εἰ τὸ καὶ τὸ ἐποίησεν ἄνθρωπος οὑτοσὶ, οὐκ ἂν ἀπέθανεν."

"As if a physician, when called to some patient in a sinking state, were to give no advice, and prescribe no course whereby the malady might be cured; but when death had happened, and the funeral was being performed, should follow to the grave, and expound how the poor man would never have died had such and such things only been done."

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TO

COLONEL ROWLES, H.E.I.C.S.

&c. &c. &c.

July, 1848.

I HAVE ventured to dedicate this short treatise to you, not only as a mark of the personal regard and high esteem I bear towards you, but because of the conviction I feel that there is no labour to which you would lend the influence of your name so readily, as that which has for its object the mitigation of disease, and the alleviation of human suffering; in the anxious hope of accomplishing which the following pages have been written, by

Your most obedient and faithful servant,

J. CHALLICE.

The Grange Road, Bermondsey.

SHOULD THE CHOLERA COME, WHAT OUGHT TO BE DONE?

Passing political tumults, agitation, the sanguinary conflicts, and the grave uncertainty of the future, deprive the above question of that deep interest and anxiety which otherwise, from its vast importance, it must have occasioned in the public mind.

Not intending to create unnecessary alarm, but fearing that the course now taken by this human scourge, will, in all probability, bring it to our shores before very long, we think a few words of advice, on the best means known for its prevention, will not be useless or unacceptable.

The last intelligence we have of this eccentric disease informs us, that it is making extensive ravages in Russia, that it is extending over the greater portion of that vast country, and that it is of a more fatal character than hitherto known in Europe.

We have, however, received but vague accounts of the medical treatment, or preventive measures adopted. Not that quarantine laws are of the slightest service in checking the progress of cholera. Experience has invariably proved the contrary.

So much has been written on the nature, causes, and treatment of this disease, and so many contrary opinions entertained, that we do not consider it necessary, or profitable, in these pages to enter fully upon these points. It is a fact well known, that the inhabitants of this country have long been subjected to the visitation of a disease resembling in some symptoms the Asiatic cholera. Periodic, generally isolated but sometimes epidemic, it is called English or autumnal cholera. By some it is considered to be a milder form of the Indian disease, modified by climate and other circumstances; others, however, deny (and we think with reason) that there is the least identity, and maintain that they are two distinct diseases.

The appearance of Asiatic cholera in this country as an epidemic first occurred, in 1831, at Sunderland. In this town, containing a population of

40,735, there were attacked from the latter end of October to the middle of January, 534 persons, of whom 212 died. And it is a circumstance worthy of note, that only seven of these cases were of the middle or upper classes. It will thus be seen that the deaths in proportion to those attacked were alarming, but that only a very small proportion of the whole population suffered. Females were rather more attacked than males, in the proportion of four to three, and children almost entirely escaped.

In various metropolitan parishes and districts, the number of cases and deaths were as follows:—

	Cases.	Deaths.	Recoveries.
St. George the Martyr, St. Olave, and St. Saviour, Southwark, together	2160	856	1304
Whitechapel	421	263	158
St. Giles	628	280	348
Bermondsey	516	210	306
St. Marylebone	516	224	292
Stepney	487	225	262
Wapping	476	200	276
Bethnal Green	304	170	134
St. Luke's	258	118	140
Greenwich	243	149	94
St. George's in the East	224	123	101
Camberwell	217	107	110
Chelsea	186	82	104
St. Pancras	186	111	75

	Cases.	Deaths.	Recoveries.
Holborn	165	46	119
Clerkenwell	143	65	78
Shoreditch	107	57	50
Paddington	85	29	56
Strand Union	84	37	47
Islington	60	39	21
Rotherithe	21	19	2
Kensington	18	15	3

It will thus be seen at a glance, that in the metropolitan districts, the majority of cases were in the low densely populated quarters by the banks of the river, and that nearly one half of those attacked died.

Such a result, however unfavourable and alarming, does not at all equal the *mortality* with which this disease raged in France. We believe that at Lyons, when it first broke out, nine out of ten died, and in Paris it was nearly as fatal. This, we think, may very fairly be attributed to the difference in food. The vegetable and fruit diet, with the wine of the country, and almost entire abstinence from meat, in the working classes, *disposing* to a relaxed condition of the bowels, and furnishing but a slight resistance to the attack of a disease, which we shall soon show, evinces a peculiar partiality to those suffering from derangement or irritation of the alimentary canal.

Although epidemic Indian or blue cholera did not appear here before the period mentioned, there can be no doubt that isolated cases have from time to time occurred, and been noticed by medical men, but caused no particular public attention, because of their rarity.

After visiting nearly every large city in the kingdom, proving more or less fatal, according to local circumstances; within about a year from the time of its first appearance, it almost entirely vanished as an epidemic or general disease. It may be as well, however, to mention that *isolated* but *well-marked cases* have since then been met with by medical practitioners, here and there, somewhat like stragglers, after the expulsion of an invading army. It is also a curious fact, that our own native *English cholera*, since the visit of its far more terrible namesake, has become a more serious disease, proving often *fatal*, unless early and properly attended to.

We have named this an eccentric disease, and surely its history and its habits confirm it. There is no known or fixed law by which either its propagation or its progress depends. It has its favourite localities, and the East Indies seem to be

its native spot, and usual resting place. Under some exciting circumstances, it spreads over other countries and to other climates. Mocking and overleaping all human obstacles to its progress, sweeping sometimes rapidly across vast tracts of country, leaving desolation in its path, occasionally lingering in particular spots, becoming, as it were, exhausted and isolated, only again to burst forth when least expected, and in quarters far distant. It seems, however, more capricious in India than elsewhere; sometimes the people on the hills are attacked, sometimes the dwellers in the valleys, sometimes the natives alone are the victims, at other times the Europeans.

We will here quote from a manuscript, with which we have been favoured by Colonel Rowles, whose opinion, from a long residence in India, as well as from the deep interest he took in this subject, is entitled to great weight and consideration.

"Cholera is considered by the native Indian doctors to arise from miasma, and miasma they consider to be an emanation from marshes, woods, or hills; that it may be mineral, vegetable, gaseous, or animal, that the latter is indicated by

its progress, however slow, against a prevailing wind, thus showing that it contains within itself a power of locomotion. This, it may be observed, is essentially the case with cholera, which however advancing more rapidly in the direction of the wind, has been observed in India to advance also against strong wind, at the rate of about four English miles daily. The cholera insect is considered by them to have in its character a resemblance to the musquito; it has for a time its existence in the water, and that after a time it undergoes a change, obtains wings, and becomes an inhabitant of the air. It has now become a migrating insect, and however too minute, or otherwise escaping our attention, its habits may be considered similar to those of other migrating insects. We may take for example the locust, the largest migrating insect we are acquainted with, or we may compare it to the swarms of insects known to us as blights, in our fields and gardens, traversing them in straight lines, destroying one part and not affecting another; devastating half a tree, and not touching the other half. It is in this manner that cholera commits its ravages on one side of the street, or

in one quarter of the town, without injury to the other parts of it. We have on established record, an instance of one side of a ship, in the Madras roads, being struck by cholera, while the other side was untouched; nor did the men on the side not attacked by it afterwards suffer, although they attended upon their afflicted companions, and buried them, that is, threw them into the sea, as they successively died.

"There is also, among the Madras Official Medical Reports on the Cholera, the instance of two Sepoy battalions marching together, when in some encampment, one of them took up its ground close to a tank, or small lake, the men wading into it, up to their knees, to obtain more limpid water; the disorder soon broke out in this battalion, while the other battalion encamped near some wells, from which the men drew their water, had no attack of it. They continued the march together, and although the men of the two battalions had free intercourse the disorder was not communicated. It is to be borne in mind, however, that the bodies of the men who died were very soon buried, according to the Hindoo custom. It appears from Indian books of an ancient date,

describing the symptoms of cholera, that this disease has been in existence for more than 2000 years, it being described as one of the five plagues of those times: two of these are supposed to have disappeared, the remaining three being plague, small-pox, and cholera."

The course taken by this epidemic, in its progress to Europe and these islands, in 1831, is doubly interesting at the present moment. It appears, that about the end of May, 1817, it raged at Nuddea, and in other parts of the Delta of the Ganges. During that year it did not extend beyond lower Bengal. However, in 1818 and 1819 it spread over the whole length and breadth of the Indian Peninsula, moving in lines more or less diverging; its progress was wonderfully uniform, being, for successive months, at the rate of about 70 miles a month. It then extended over the boundaries of Hindostan into the Burmese Empire, and gradually reached China in 1820. In 1821 it extended along the shores of the Persian Gulf, and in the following year spread through parts of Arabia, Persia, and Syria. It appeared *first* in the Russian territories in 1823, but its further northern, and western course was, for a time, arrested. It, however, reappeared at Orenburg in

1829, and, in 1830, advanced through the southern provinces of that empire till it reached Moscow, in September of that year. Its subsequent progress through Russia, Poland, and the North of Europe, to this country, is well known.

In this kingdom no particular marked course of the disease was noticed; it seemed to sweep across the face of the country, but certainly evinced a *preference* for particular spots and localities, such as the banks of rivers, low, damp, crowded, and marshy places. Those who fell its first *victims* were the poor, the dirty, and the destitute. It was in wretchedness, in the haunts of vice and misfortune, in the crowded dwellings of the overworked and under-fed population of large cities that it first alighted. Those who are sickly and feeble, who breathe constantly impure air, who live irregularly, commit excesses, or exhaust their vital energies in dissipation, are also easy and unresisting victims, especially liable to be attacked, and little likely to recover. Still the strong, the healthy, and the rich, did not escape altogether; but the disease was less general in these classes; the cases were *isolated*, and a second attack in the same household was very unusual.

We now proceed to give a description of the

signs and symptoms of cholera. In almost every case the active state of violent suffering is preceded by a preliminary stage, in which is experienced an indescribable sensation, a sort of depression and sinking, and some constriction about the chest, with uneasiness and flying pains of the stomach and bowels, slight nausea, giddiness, and debility. This condition may continue for some hours, and is then followed by a relaxation of the bowels, at first only of their ordinary contents, in other words, of a healthy character, but freely, and as if produced by a powerful dose of medicine. Soon, however, the evacuations assume that peculiar appearance, resembling rice water, which is one of the main features of this disease. Now, with the English, so many ailments are caused by, and commenced with, an opposite condition of the bowels, that is, a state of *costiveness*, that 99 persons out of a 100 consider a natural relaxation as a very fortunate circumstance. However, a sure sign by which this premonitory stage may be distinguished from an ordinary ailment is INCREASING DEBILITY, and we are at a loss for language adequately to enforce the extreme necessity for adopting medical treatment in this stage of the

disease. It is then manageable, and in the great majority of instances, cured without difficulty. Nothing can be more distressingly painful to medical practitioners to find, when sent for, that time has been lost, this preliminary stage passed, and the patient in a state of collapse. True, in some instances of unusual malignity, this stage of warning is *short*, but it is not so in the majority, of the cases that fell under our care, this preliminary state of relaxation of the bowels, unattended with *vomiting* or *cramp* existed in some for nearly a week, in several two or three days, and in most instances from 12 to 24 hours. When this distinct warning is neglected, when the vital powers are nearly exhausted, when there is violent and incessant vomiting, almost universal spasm or cramp, when the heart ceases to send the blood to the surface of the body, or to the extremities, when the skin is icy cold, and of that peculiar blue (which alarms more than all), medical aid is sought, and need we be surprised that, in many instances, it is too late? Human skill cannot work miracles.

Let us then repeat, that a relaxed condition of the bowels should, on no account, be neglected

if epidemic cholera be raging in the country, and to avoid any misconception on this most important matter, we will endeavour to explain what is meant by a relaxed condition of the bowels. In middle or advanced life, the state most conducive to health is *one action* of the bowels daily; there are, however, many whose habitude is twice, or even thrice in that period, without any prejudicial effects to the constitution; there are, also, others whose systems are acted on only on alternate days, or at even longer intervals. Now it will be at once understood, that what is only customary with one would be a violent *attack* of bowel complaint in another, and vice versâ. Therefore, relaxation may be said to exist; when there is a more frequent and copious action on the bowels than is usual in the ordinary state of health.

Without entering upon the question of "Infection or Contagion," we will briefly state our deliberate conviction that cholera is not communicable from one living human being to another. We have consulted almost every work of authority on that point, and our opinion is borne out by overwhelming testimony in its favour. In Annesley's

work on the diseases of India, he says, "Cholera attacked the field force stationed at Shulligaum, and raged with great violence among the corps posted on the left of the lines, while the 17th battalion of native infantry, who were posted on the right of the line, were exempt from it, though they had constant communication with the other men." Doctors, nurses, and attendants on the cholera, have almost entirely escaped from this disease. How different has been the result from attendance on the late typhus fever in Ireland, where almost every medical man (or at least a large majority) took the *fever*, and many died. Where entire families have been attacked by cholera, the *disease*, although not developed in all at the same *instant* of *time*, had *evidently* been communicated simultaneously, from the same exciting cause.

Suppose, then, this formidable eastern scourge amongst us; that even some of our neighbours, friends, or relatives, have been attacked, and that some have died. What, under such circumstances, are the duties of the head of a family? what precautions does it behove him to take in order to avoid any unnecessary risk to himself or those about him.

Recollecting that this disease, although most capricious, has shown hitherto a predilection to those in ill health, the natural course to be taken by any so circumstanced, is to adopt immediate measures for restoring the health and strength. At the risk of repetition, we particularly notice, any disposition to bilious attacks, or stomach complaints; to irritation, or irregularity of the bowels. With regard to the *evil* effects of inefficient ventilation, of bad drainage, foul smells from cess-pools and open sewers, what can we add to the oft-told tale? How strange it is, the public are scarcely yet alive to the vital importance of these matters. The members of the medical profession have most *disinterestedly* done their duty; their *sacrifice* is little appreciated or *unnoticed*, and there still remains a majority of prolific sources of disease undisturbed. As an instance, we lately attended an entire family with fever. The father, mother, and five children, were attacked almost simultaneously, and the cause was most clearly and distinctly traceable to the bad condition and foul odours of a cesspool close to their dwelling. The landlord, however, said that it was *mon-*

strous to suppose that fever could arise from this source; it was "*most shameful* to put such notions into people's heads, and that, on the contrary, such smells were quite healthy."

Now this family, although recovered from the state of fever, are all in an extremely weak condition, their systems relaxed, and nerves unstrung, they could not resist the influence of malaria. These and such as these are the unresisting victims of epidemics. Another case of the pernicious effects of cesspool exhalations, and we leave the *humiliating subject*:—"A young man, twenty-three years of age, from the country, a steady, sober, and intelligent mechanic, had always enjoyed perfect health till he came to London some months ago. Since then, to use his own words, 'he knows not what has come to him, he has no strength or spirits, has lost his appetite, is feverish, a bad taste in his mouth, is better towards night, but always worse in the morning, wakes with parched and dry mouth and throat, with pains and aches all over him.' This illness increasing, he was compelled to lay by, and we visited him. We found him in a comfortable-looking little bed-room on the first floor of a four-

roomed house, everything about denoting neatness and cleanliness, and nothing neglected to make his humble lodging comfortable and creditable. There were books and flowers. Yet on entering we encountered such a peculiar overwhelming, indescribable odour, that we were compelled to throw the window wide open,—on inquiry, we found the cause of this polluted *atmosphere* to be an *exhalation* of *gas* from an old closed CESSPOOL under the room immediately beneath. The paint of the skirting around the room was blackened by the foul air, and so was the silver case of the young man's watch. Now this poor fellow was as much under a course of poison as if he had *nightly* taken a dose of arsenic. But it was difficult to persuade him, that lodgings so clean and comfortable, could be injurious; we however succeeded in doing so, and he recovered rapidly as soon as removed from its influence. If possible, then, get rid of foul odours; ventilate and thoroughly cleanse wherever it is required, allow of no *accumulations* of refuse vegetables, and such like; and, if practicable, avoid crowding at night; it is then that the respiration of impure air often originates disease, and is frequently the cause of early death.

Too much attention cannot be paid to the character and quality of the food. The unblushing manner in which meat unfit for human consumption, is exposed for sale in the poorer and densely populated parts of London, is a disgrace to any civilized city. We do not allude to *stale meat*, we refer to that in which death had *actually* occurred from a *diseased state* of the *animal*, or in which it must quickly have happened, had it not fallen into the hands of the butcher. This grievance, this wicked evil, undoubtedly a prolific source of disease, pressing almost entirely on the working classes, who are powerless in protecting their own interests, ought surely to be remedied by some legislative enactment.

Bread, badly made, or composed of musty flour, is also a serious source of ill health; but the poor, more particularly the Irish, are pretty good judges of this article, and buy only at those shops where good bread is sold.

Fish, unless very fresh, ought to be scrupulously avoided. In 1832, several cases of cholera came under our care, after the patients had partaken freely of salmon, which, in all probability, was not of the best quality, but was at that time

very plentiful, and almost a *staple article* of food amongst the poorer classes.

Now, we do not mean to say that food, however unwholesome, in *itself* can produce Asiatic cholera, but we desire this *fact* to be strongly and indelibly impressed upon the minds of all interested—That those suffering from the consequences of unwholesome food, are the most likely to be attacked by cholera, should they become exposed to its influence.

Rich and oily meats are objectionable, green vegetables, unripe fruits, particularly plums, melons, or cucumbers, ought, as a matter of pre caution, to be altogether avoided. Where the water is *impure*, which is too generally the case, it ought to be *filtered* or boiled.

Good wholesome fresh beef and mutton, with the best wheaten bread, and a glass or two of good old port wine to those who have it, or can get it, is what we recommend; and at the same time we do not object to the occasional substitution of a roasted fowl or partridge.

But it unfortunately happens, that what is good for health cannot always be procured; and it is also to be lamented that the poorer classes

generally are ignorant of the best methods for obtaining all the nutriment from food, within their reach. Rice is cheap, wholesome, and nutritious, is an excellent addition to a family meal, when cooked either separately or with meat. In the bowel complaints of children, or of adults, it acts most beneficially, is soothing, and at the same time slightly astringent.

As a beverage, a wine glass full of pale brandy to a quart of toast and water, or the same quantity of green tea, *is not unpleasant*, and is unobjectionable; or a table-spoonful of old sherry or brandy to a tumbler of seltzer-water may be substituted. Table beer, cider, and "home made wines," are all objectionable. Is it necessary for us to say a word upon the effects of *intoxication?* Of all causes this is one of the most prolific.

By avoiding as much as possible, bad food and impure water, practising strict personal cleanliness, wearing warm clothing, shunning exposure to wet and cold, living regularly, following cheerfully without fear the accustomed duties of life, the cholera need not be much dreaded.

These are the general precautionary mea-

sures to be taken, and we propose touching only lightly on the treatment during the actual presence of *Asiatic cholera*, *because* we cannot imagine a *case* occurring in this country, without proper *medical assistance* being promptly applied for and obtained.

There may, however, be *some* interval before this aid can be always procured, and in such an interval, what ought to be done?

Let there be no exhibition of fear or agitation, it distresses and alarms the patient, and can do no good. The patient should be without delay conveyed to bed, and arrangements made, by which the constant necessity for getting "in and out" may be avoided. Any one at all conversant with the arrangement of a sick room will easily comprehend this direction. The chamber must not be crowded; the attraction which physical suffering seems to exercise upon some people, is one of the strange peculiarities of human nature. To many old women a death-bed *scene* is a *delight*, and the confidential croak in which they address the doctor is our *abhorrence*. All interest *vanishes* with them as the sufferings become mitigated, and danger disappears. A mid-

dle-aged, notable nurse, with a female relative or two, is all that is required or good to be allowed. Of course there are exceptions.

If there be violent vomiting a large mustard poultice, composed of three parts of mustard to one part of flour or oatmeal, and mixed up with hot vinegar, should be applied all over the region of the stomach, and allowed to remain on a quarter of an hour or twenty minutes, unless it produces violent irritation on the skin. This, however, is not likely to happen, as the skin very early loses its *sensibility*, so that it is probable little or no effect will be produced by the first application; in which case, a fresh one ought to be applied at the end of twenty minutes.

The legs, feet, arms, and hands should be wrapped in flannels steeped in *hot vinegar*, and frequently renewed, so as to maintain a good temperature, and producing, in fact, a vapour bath. Friction of the calves of the legs, constantly and unremittingly kept up, is of the greatest service.

With the vomiting and purging, there is extreme thirst. It is not advisable to attempt the relief of this by copious drinks, but a few teaspoonfuls of arrow-root, or of isinglass mixed with

water, with *two* or *three* drops of *laudanum*, may be given occasionally, and will often remain on the stomach when everything else is rejected. The indiscriminate use of brandy in this *stage*, we believe to be highly pernicious.

We consider that the recommendation of any particular medicine would be injudicious, for there is no specific known for the cure of cholera. Many have been vaunted, but when fairly tried, they have all failed; therefore it must be met, by all the appliances of medical skill and experience, according to the symptoms and peculiar constitution of the patient.

The reported success of naphtha in the cure of cholera must be unfounded, or the disease would not continue so fatal in Russia; more particularly as the Emperor has adopted every means for mitigating the fearful scourge.

Having, however, very often seen the excellent effects produced by NITROUS ACID, not only in checking the distressing *relaxation* of the bowels, and vomiting, but also as a powerful stimulant, we feel some confidence in recommending its administration. We have been accustomed lately to prescribe it in the bowel complaints of young

children, almost always with great advantage, and never with the slightest ill effect. We prefer it *invariably* to the usual aromatic, absorbent, and astringent combinations. The dose for an adult, is from four to eight drops in a glass of aromatic water, combined with three or four drops of laudanum, repeated at intervals. However, it requires watching, and should only be taken under medical advice.

The recent investigations of government commissioners for the purpose of ascertaining the amount of accommodation that the metropolitan workhouses could render, in cases of *emergency*, when, from the state of destitution of the *patient*, no assistance could be afforded at their own homes; prove that, in many instances, there is no accommodation, and in others, that it is inefficient; indeed, in only one or two workhouses could patients be received.

Now, under such circumstances, what course is most advisable? Should all the workhouses be fitted up for the reception of destitute cholera patients, to a certain extent; or ought accommodation to be found elsewhere? We prefer the latter plan; there are many and serious objections to the former;

for a principal feature of the cholera, which must not be lost sight of, is, that fever of a more or less malignant character is the certain successor to it. When we recal to our minds "Hospital Fever," "Hospital Gangrene," "Hospital Erisipelas,"—diseases, as their names evince, peculiar to these establishments, and which all the scientific skill, and the constant efforts of the best men attached to these very noble institutions cannot eradicate, is it at all *unlikely* that "workhouse cholera" will *henceforward* be perpetuated, if the workhouses are converted into cholera hospitals. For however well arranged a building may be, both as regards cleanliness and ventilation, when a number of human beings are closely confined within its walls, (peculiarly the case in London workhouses,) the atmosphere is always, to some extent, vitiated. Consider, too, the terrible alarm of the poor *inmates;* it is no exaggeration to say, that many would die from mere fear alone.

Still, as some provision must be made for affording medical assistance and proper attention to the destitute, when attacked with cholera, houses in each district should be taken by the *parochial* or other authorities, and appropriated for this parti-

cular object. The necessary accommodation and appliances for ten or twelve patients might easily be arranged at a very moderate cost, and a couple of nurses, with a *neighbouring* medical man and his *assistant*, would complete the establishment.

If any argument were required to prove the necessity for early and constant medical treatment, it may be found in a Report of the Medical Board of Bombay which states that 1,294 cases of *cholera* occurred in a district where no medical *assistance* could be obtained, and that they all died.

We have stated our decided opinion against the contagious character of cholera, yet we cannot *omit* to mention, that the *evidence* on this point is not so *satisfactory*, as regards the communication of the disease from a *dead body*. And there seems strong reasons for *believing*, that under some *circumstances*, particularly when decomposition has commenced, cholera may *then* become contagious. This leads us to the IMPORTANT QUESTION, as to how soon after death ought interment to take place. And there could be but one opinion upon this matter, *provided* there were any *absolute sign*, or condition, by which the *cessation* of *life* could be at once *positively ascertained*. As a general

rule, we think 48 hours at least ought to elapse before burial, and every possible precaution against the frightful catastrophe of "burying alive" should be taken.

Having thus considered some of the striking symptoms of Asiatic cholera, and made some remarks upon its supposed causes, and of the proper preventive *measures*, although we have *purposely* refrained from entering upon *mere theories*, as out of place in this treatise, which aims only at plain practical common sense; yet it may, perhaps, be considered an *omission*, if we were not to attempt to give some *explanation*, or *definition*, of what cholera really is, and how such violent and rapid changes are produced by it on the human body. We believe it to be a "paralysis of the nerves of secretion," by which those all-important vital functions, the secretion of the urine, and the other fluids necessary to life, are suspended: the blood ceases to circulate, and becomes separated into two portions—one portion coagulates in the large vessels, and the other (the watery with the saline particles) passes from the system, by the bowels and by vomiting. This condition is brought about *either* by *some* POSI-

TIVE *poison*, floating in the air, or by some peculiar state of the atmosphere itself. We think the poisonous nature of cholera proved, and that its *vital* or animalcule character is also highly probable.

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