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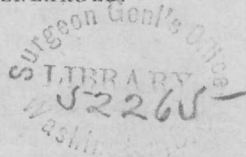
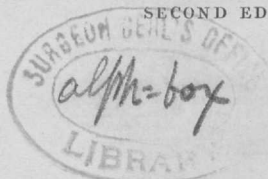
**CHOLERA,**  
ITS  
NATURE, CAUSE, TREATMENT,  
AND  
**PREVENTION,**  
CLEARLY AND CONCISELY EXPLAINED:

WITH  
**AN APPENDIX,**  
CONTAINING PRACTICAL REMARKS ON FEVER AND DYSENTERY,  
WITH WHICH CHOLERA IS INTIMATELY CONNECTED,  
AND FREQUENTLY COMBINED;  
BEING THE SUBSTANCE OF REPORTS MADE TO THE LATE  
GOVERNMENT OF POLAND.

By **CHARLES SEARLE, Esq.**

OF THE HON. EAST INDIA COMPANY'S MADRAS ESTABLISHMENT,  
AND LATELY IN CHARGE OF THE PRINCIPAL CHOLERA  
HOSPITAL AT WARSAW.

SECOND EDITION, REVISED AND ENLARGED.



LONDON:

PRINTED FOR S. HIGHLEY, 32, FLEET-STREET,  
AND WEBB-STREET, MAZE-POND, BOROUGH.

1831.

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CHOLERA.

NATURE, CAUSE, TREATMENT,

PREVENTION,

ORIGIN AND COURSE EXPLAINED.

BY

CHARLES GUTHRIE, M.D.,

OF THE UNIVERSITY OF EDINBURGH,

AND FELLOW OF THE ROYAL SOCIETY.

WITH AN APPENDIX

CONTAINING

A HISTORY OF THE DISEASE IN INDIA, AND A

DESCRIPTION OF THE

CHOLERA GAZETTE.

LONDON :  
Printed by Littlewood and Co.  
Old Bailey

DEDICATION.

TO

SIR JAMES M<sup>c</sup> GRIGOR, M.D., F.R.S., K.T.S.

DIRECTOR-GENERAL OF THE ARMY MEDICAL DEPARTMENT  
OF GREAT BRITAIN, &c. &c.

SIR,

Having had the honor of dedicating to you the former edition of the present work, allow me to hope that the additional information embodied in the edition which I now beg leave to subscribe to you, will render it more worthy of your approbation and patronage.

I have the honor to subscribe myself,

Sir,

Your obliged and obedient servant,

C. SEARLE.

LONDON, Nov. 15, 1831.

DEDICATION

TO

SIR JAMES W. GIBSON, B.T., F.R.S., K.T.S.

The author of this book is deeply indebted to Sir James W. Gibson for his generous and helpful criticism of the manuscript. It is a pleasure to dedicate this book to him, who has been a constant source of inspiration and encouragement throughout the work. His profound knowledge of the subject and his kind advice have been of great value. The author also wishes to express his appreciation to the many friends and colleagues who have supported him during the preparation of this book. Their interest and assistance have been most helpful. Finally, the author wishes to thank his family for their patience and understanding during the long hours spent on this project. The book is dedicated to Sir James W. Gibson, B.T., F.R.S., K.T.S., in recognition of his many contributions to the field and his personal kindness.

VI

P R E F A C E.

IN the present excited, (too highly so), state of the public mind respecting the disease of Cholera, there needs no apology for introducing amongst the already numerous publications upon the subject, the following pages; nor can the author plead guilty to any charge, of putting himself forward upon this occasion, without that requisite practical knowledge of the disease which is now naturally looked for in every candidate for public notice, with reference to this subject. On the contrary, having had the experience of nearly fourteen years practice in India, which may be considered the birth-place of the disease, (and where he was himself twice the subject of its

attack), and having added thereto the opportunity of acquiring much additional information, with reference to the nature, and character of the disease, as existing in Europe, in consequence of having lately been Physician to the principal Hospital at Warsaw, devoted to its treatment, whither he proceeded expressly for that purpose, he may, without any undue assumption, assert that he undoubtedly possesses the means of imparting that practical information upon the subject, which is at the present moment so much needed, and which conscious of the truth and justness of his views, a sense of moral and public duty, alone, induces him to communicate.

The author has felt it his duty to clothe his ideas, particularly in that portion of the work which speaks of the cause, treatment, and prevention of malady, in as plain language as possible, in order that the public, as well as the profession, may without delay be put in possession of this very necessary information, and also, that the nature of the disease, as far as his knowledge of the

subject can afford the means, may be duly appreciated, without that degree of exaggeration and fear, to which the human mind, under the apprehension of undefined danger, is so prone, and which it is believed may add many to its victims.

Before concluding this short preface, it is necessary to observe, as there has been a previous publication, or first edition of this work, that the author being then in Poland, a portion of the materials were forwarded to a friend in this country, and through circumstances over which the writer had no control, they were published in an imperfect state. The author being now enabled to superintend the work himself, much new matter has been introduced, referring more particularly to the premonitory symptoms of Cholera, and its relationship to fever, and dysentery, with which Cholera is intimately connected, and frequently combined, and he flatters himself that the work will thus be found much more complete, according to the views which he entertains, and with reference

to putting the public in possession of all the practical information upon this subject which he has had the opportunity of acquiring.

With reference to bleeding, the author begs leave respectfully to call the particular attention of his professional brethren to this important point of practice, as applying to Cholera, he having found it necessary to qualify the advice he gave on this head, in the former edition.

104, *Great Russell Street,*  
*Bloomsbury, Nov. 1831.*



# CHOLERA.

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## CHAPTER I.

### CHOLERA—ITS SYMPTOMS AND ORDINARY MODE OF ATTACK.

**FIRST STAGE.**—The invasion of Cholera most frequently takes place in the night or towards morning. The patient is either suddenly seized with giddiness, windy rumbling in the bowels, and purging; or the purging, with a sense of weakness, fulness and oppression at the præcordia,\* and symptoms of indigestion have been for some hours', or even days' duration. These are followed by vomiting, which, with the evacuations from the bowels, soon assumes a sero-mucous or barley-water-like appearance. Great prostration of strength follows, and generally tremors or twitchings, with pain and

\* Præcordia, parts about the stomach, situate intermediate between the belly and chest.

numbness, or cramp in the extremities. A dusky, sunken countenance, ringing noise in the ears or deafness, subdued voice, cold damp skin, and feeble pulse become now very constant and characteristic symptoms.

SECOND STAGE.—At this period of the complaint, efforts of the system would appear to be made to bring about febrile excitement, and which is accomplished under proper treatment; but otherwise, the partial excitement of inflammation only takes place. When, from the sense of præcordial oppression, heat becomes developed in the part, the patient complains of inward burning, attended with great thirst, and insatiable desire for cold water. The irritability of the stomach is now usually increased, and there is often extreme restlessness. With the development of this partial excitement, tonic spasms or cramps, if they have not previously taken place, but too frequently follow,—commencing in the feet and legs, and gradually increasing; they often extend to the upper extremities; and occasionally involve the muscles of the belly and chest.\* The exhausting influence of these spasms or sense of internal anguish is followed by col-

\* Spasms, however, are by no means so frequent as I saw them in India; and cramps, too, in general, much less severe.

lapse :— or this state succeeds to the symptoms of the first stage, without the development of heat and this stage of excitement. Or, in weakly persons, the latter stage is but feebly developed,—the sickness of stomach, pain at the præcordia, and desire for cold water only existing.

THIRD STAGE.—*Of Collapse.*—On this taking place, the stomach and bowels, which continued before irritable, retain whatever is administered either by mouth or clyster ; save that an involuntary oozing in general takes place from the bowels ; the spasms cease, the extremities are livid, the skin is cold and damp, and the fingers are shrivelled ; the eyes are suffused with blood, or flaccid and inanimate,—and in general half open, with the whites turned up, and the countenance death-like : coma and dyspnœa ensue ; and life gradually leaves its frail tenement, occasionally in ten or twelve, but generally within eight-and-forty hours from the period of invasion.

Should, however, remedial means have been timely and judiciously employed, as I have before observed, the first stage is gradually succeeded by the excitement of fever, though seldom to any very active degree, developing, however, but too frequently, the inflammation of some vital organ, in which predisposition

existed, or susceptibility of structure disposes, to be in this way attacked; the bowels and brain are the most obnoxious to this effect, but the lungs not unliable to be affected.

The above will be found to present a faithful and striking picture of the disease, in its more frequent and ordinary forms; and of the symptoms, which we have divided into stages, in the order of their succession; but, as varieties do occasionally present themselves, though as it is justly observed in the Madras Medical Report on this subject, "These varieties are not observable so much in individual cases, as what may be termed local epidemic visitations;" it will be proper to notice them; which we shall do in the Appendix.

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## CHAPTER II.

### APPEARANCES ON DISSECTION.

THESE have been so uniformly the same, that they may be comprised in one very short sentence, at least such as would appear essential and characteristic of the disease:—namely, congestion of all the venous trunks of the body.

I say all, for I have found it equally to obtain in the extremities, on cutting down upon the brachial and femoral veins; though the organs more particularly noticed as being especially the seat of engorgement, have been the stomach, the small intestines, and the brain; and next in degree the liver, the spleen, and the lungs. The spinal marrow, whenever this has been examined, has been also found congested; and the heart is frequently found dilated and relaxed.

Added to this, however, whenever the patient has survived a sufficient period, and there has been energy enough in the system for the development of the second stage of the affection, there has been found inflammation of the mucous membrane of the stomach and small intestines; and in some cases, arterial injection also of the membranes of the brain, and effusion beneath the arachnoid membrane, and at the base of the brain, extending down the spinal canal.

The urinary bladder has uniformly been found contracted, and generally to its smallest dimensions — thus obliterating its cavity. The intestines, the large, however, more particularly, have likewise often been found much contracted. The gall-bladder has, in general, been found moderately full of bile, of dark colour and thickropy consistence: occasionally, it has been tarry, or otherwise more fluid and of lighter colour, de-

pendent upon the stage of the affection and period the patient may have survived the attack. The body externally of a livid or plum-colour, more particularly, however, to be noticed at the extremities, and in the more dependent parts, whatever the position the body may have remained in for a short time after death. The blood is extremely fluid in the small vessels, as the forementioned remark evinces, in consequence of the coagulable part being consolidated in the larger trunks, and forming, what is generally called, polypi in the heart. The colour of the blood in all the cavities of the heart is the same, of unusually dark venous character.

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### CHAPTER III.

#### THE CAUSES OF CHOLERA.

THE immediate cause of Cholera would appear to be of the same nature as that which ordinarily gives rise to fevers of the intermittent and typhoidal character : hence it attacks those more particularly who reside near to or frequent damp marshy situations, or respire an atmosphere otherwise contaminated by the exhalations arising from organized substances, vegetable

or animal, in a state of decomposition : hence, too, it is, that filthy, low, unventilated situations are its most common habitats.\* To develop the disease, or to render the individual susceptible of its attack, it would appear, however, that a certain condition of system or predisposition must exist ; else it would be of more general prevalence than we ordinarily find it ; this I believe to consist principally in debility ; hence the indifferently fed, the badly clothed, and comfortless poor, or those exposed to the inclemencies of the weather and vicissitudes of temperature, and particularly, when under exhaustion from the want of food and bodily fatigue, are the most frequent subjects of its attack. And on this account, troops while marching are very liable to be affected. The causes enumerated I consider quite equal to the production of the disease ; but, in the character of an influential agency, I am constrained to add, a peculiar condition or epidemic influence of atmosphere ; seeing there are times in which it prevails to a considerable extent — over-stepping the boundary we have marked out and assigned to it by predisposition — and other times again, when the causes enu-

\* If evidence is required in proof of this, see what is adduced in a work I previously published ; entitled, “ Cholera, its Nature, Cause, and Treatment, with original Views on Fever.”—Wilson, Princes Street, Soho.

merated would appear to be in operation, without its production. This atmospheric agency or modifying cause I believe, however, to be, without attempting to define its nature, though I think it probably dependent upon a negative condition or peculiar electrical state of the air (or earth influencing the air) in character one, simply of depressing influence; which being superadded to the amount of causes which under ordinary circumstances are productive only of that degree of depression of system and cold stage of fever which, like the shock of cold water, eventually excites the system to the reaction of fever — is, from being thus multiplied in extent, analogous to extreme cold, productive of that overpowering depression whereby the energies of the system are rendered unequal to the development of the stage of excitement or febrile condition. The analogy is, however, perhaps better illustrated in the operation of opium upon the system, this being a poisonous agent of the same sedative class with malaria — the pestiferous exhalation before alluded to, and immediate cause both of Cholera and of fever. A small quantity of opium, like the shock of cold water, produces excitement of the system; whereas a large dose, like extreme cold, produces narcoticism or overpowering stupor — in fine, apoplexy and



death. And thus, too, may malaria be productive of both fever and Cholera. In short, the symptoms denominated Cholera are nothing more than those attending the cold stage of fever in an aggravated degree; and this is most strikingly exemplified in the fact, that as the system resuscitates, under the favourable operation of remedies, or, as the influence of the cause is mitigated, feverish excitement to a greater or less degree invariably becomes developed, and is therefore the sure indication of amendment. In further proof, if any were required, of the truth and justness of these views, I may mention the fact, founded upon observations made both in India and in Poland, that in localities notorious for intermittent fever, when Cholera has prevailed, fever has been of much less frequent occurrence, but has returned with the cessation of Cholera. And, again, that in situations ordinarily healthy, fever has not unfrequently succeeded to, or has been conjointly prevalent with Cholera, during its epidemic visitation: and this is the case, at the time I am now writing here at Warsaw; Cholera and fever of a remittent type being both extremely prevalent, and the milder attacks of the former lapsing in most cases into the latter.

## CHAPTER IV.

OPERATION OF THE CAUSE IN PRODUCING THE  
PHENOMENA OF THE DISEASE, OR EXPLAN-  
ATION OF THE SYMPTOMS.

OF the various causes adduced in the foregoing chapter, we hold but one to be the essential agent, and immediate cause of the disease, and that to be a mephitic vapour or miasm; of the nature, if not identical with malaria, in the common acceptation of the word; which, being received into the system by respiration, contaminates the blood with its poisonous agency; and in common with other poisons of the sedative class, of which it is one, operates immediately and specifically upon the capillary vessels, in depreciating or arresting their functions; and hence, as these vessels enter into the composition and structure of every organ and part throughout the system, and as their function is nutrition, secretion, calorification, and in short, all that appertains to the life and health of the part, and system in general: it necessarily follows, that the depreciation of their action is attended with debility of all the functions. From

which follows, primarily, the sense of langour, indigestion, and giddiness; and, secondarily, from depreciated action of the heart and brain, the ensuing symptoms: purging, vomiting, coldness, and spasms, as we shall briefly explain. The action of the heart is two-fold, that of a forcing and sucking pump; by its contraction the blood within it is propelled through the arteries, to all and every part of the system; by its dilatation, the blood, aided by the impulse it receives from the propelling column in the arteries, is again drawn up or returned to the heart by the veins; and at the same time the oxygen of the air is sucked in from the lungs and surface of the body, and fluid nourishment from the stomach and bowels, through pores or apertures which are to these fluids permeable in the veins. From which it follows, that the heart's diminished influence will be attended with engorgement or congestion in the veins; and that this congestion will take place to the greatest extent at those points of the circulation the most remote from the heart's influence; which obtains to by far the greatest degree in the veins of the stomach and bowels and spleen, from the peculiarity of these vessels constituting the roots of an extra system — the *vena portæ*, for the conveyance of the blood to the liver; for the purpose of being there purified of the bile, and divested of any thing that might

prove injurious to the system, before it is received into the general circulation ; hence the veins of the stomach and bowels (the permeability of which, in health, admitted of absorption), being now in a state of engorgement, and condition in which the sucking agency is almost nugatory — admit of exudation of the more aqueous parts of the blood ; and hence the sero-mucous or barley-water-like appearance presented by the evacuations, after the pre-existing contents of the stomach and bowels have been expelled. Distension of these vessels necessarily excites irritation, and this induces expulsion ; and hence the purging, sense of pain, fulness, and oppression at the præcordia ; and from the same cause, congestion of the veins of the stomach, added to diminished energy of the brain, vomiting occurs. The liver and kidneys not performing their functions, there is neither bile nor urine secreted ; and hence, too, a reason why the evacuations are colourless. Feebleness of the voice, deafness, and sighing, are fairly attributable to diminished energy of the brain ; and difficulty of breathing in the more advanced stage of the affection is dependent upon a more aggravated state of the same cause, added to congestion of the lungs. Numbness, pain, and cramps in the extremities, originate in distension of the veins, and consequent irritation of the

spinal marrow, at the origin of the nerves of the affected muscles. Spasms I attribute to irritation in the bowels; and to the circumstances of congestion having developed inflammation in the stomach and bowels, wherein vitality is greatest, is to be attributed, the sense of internal heat, desire for cold water, and partial excitement of the second stage. Coma, evinces an engorged or apoplectic condition of the vessels of the brain; lividity of surface and cold sweat, congestion of the cutaneous capillaries, and exudation therefrom. For more particular explanation of symptoms, see the work previously noticed—"Cholera, its nature, cause, and treatment."

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## CHAPTER V.

### TREATMENT OF THE DISEASE.

WITH the explanation I have offered of the symptoms and their cause, what are the indications of treatment? They simply amount to this, the removal and superseding the action of a sedative poisonous agency upon the system, and the effects resulting therefrom, of the truth of which there can be no question. And what

are the surest and best means of accomplishing these purposes? In reply, I have only to offer the result of my experience. The plan to be pursued, must depend upon the stage of the affection, and particular state and constitution of the individual. The patient should be placed in bed, between a pair of warm blankets, in an airy, and in cold weather, a warm room. And to preserve his strength, it is of the utmost consequence that he be confined to the recumbent posture; contrivances should therefore be adopted, to preclude the necessity of the patient's removal from this state, for any of the purposes of evacuation. They may be received both from the stomach and bowels in a basin or bed pan; or cloth, if the latter be not at hand;—and, whatever it becomes necessary to administer to the patient, should be while he remains in the same recumbent state. This injunction cannot be too strictly enforced, three patients having, under my own immediate care, lost their lives from want of attention to this particular, so exhausting is the disease. As a deranged state of the stomach is, I am of opinion, no unfrequent exciting or predisposing cause of the attack; or if not, as indigestion invariably succeeds to it, as a general rule, I think it advisable to commence the treatment by evacuating the stomach, whether the patient

has vomited before or not, as I have often found after death, where it has been omitted, the stomach to contain a large quantity of indigested vegetables and other substances which have been taken some days previously. In giving this advice, I must, however, add, that I hold in view, the early treatment of the disease, before the powers of the system are much prostrated, which would of course prohibit its adoption. As an emetic, let the patient drink freely of warm water; or what I am of opinion is better, as it operates almost instantly, and more perfectly accomplishes the purpose, is always available, and from its stimulant and mild aperient qualities is useful also with these intentions, namely, a *large* table spoonful of culinary salt (muriate of soda) dissolved in half a pint of hot water, and drank as warm as it well can be. Should it fail in producing the desired effect, which however is but seldom the case, a second dose may be repeated shortly afterwards. Prior to the emetic, it will, however, be necessary, if there be heaviness or pain in the head, oppression of breathing, pain at the præcordia, or severe spasms, and the pulse admits of it, that is, if it be moderately full, and firm at the same time, or oppressed, that the patient be bled, from a small orifice in the recumbent posture, to an extent, limited however in general, to

eight ounces. Bleeding immediately tends to the relief of these symptoms, which are dependent upon venous engorgement, while the emetic following the bleeding, tends also, by the deep inspirations induced, and compression of the abdominal organs, to the blood's circulation through the liver, and to its equalization in general.

I must, however, add, with respect to blood-letting, that, as it is a remedy capable of doing much good, and no less harm, caution is necessary with respect to its employment; and observe, that when the evacuations are copious it can seldom be necessary; and indeed under every circumstance I advise, that when practised, it may be in small quantity at a time, watching its effects and repeating it accordingly; which it may be often in the quantity of a few ounces at a time, with the very best effects, in the relief of local determinations. These determinations would on the contrary be increased by the direct debility induced, were the same quantity to be withdrawn from the circulation at one operation. After the operation of the emetic, hot flannels should be applied to the region of the stomach, and if there be cramp in the extremities, or they be cold, they should be rubbed, likewise with hot flannels, for half an hour; when as a stimulant to the capillaries, twelve grains of calomel should be administered, and in further-



ance of its action, and as a stimulus to the stomach and system in general, occasional cordials should be administered. To those who may doubt the operation of calomel, being, as I believe it to be, a stimulus to the capillaries in general, I have only to say, give it then with the intention of exciting the secretive organs, and the liver in particular ; for in so doing, you will not only restore a very important function, but I would add, tend immediately to the removal of the cause, by purification of the blood ; to say nothing of the good you will accomplish by increasing the circulation through the liver, removing congestion from the mesenteric veins, and thereby preventing inflammation of the stomach and bowels which so constantly succeeds. With these intentions, therefore, I recommend the calomel, and in large doses, which, in this disease, are but equal to small ones under ordinary circumstances, from the diminished absorbing power of the stomach, and of susceptibility which exists to its influence. Add to this, the necessity which exists in the treatment of this disease of accomplishing our intentions with the least practicable delay. Twelve grains\* should therefore be the first

\* I mention twelve grains, as being the medium of from six to twenty, which are the doses I have found necessary to administer to the successful treatment of the disease.

dose, which being simply placed upon the tongue, should be washed into the stomach by the cordial ; and a very suitable one is a dessert or table spoonful of brandy with double the quantity of hot water ; and the same dose of calomel should be repeated every hour or two, according to the urgency of the case ; and commensurate with the improvement of the patient, in smaller doses should it be continued, till bilious stools and urine are restored, when it may be given in conjunction, or alternately with some mild aperient, till healthy secretions are established ; but not discontinued till the latter is accomplished.

The brandy and water in the quantity of two table-spoonfuls, may be also continued every quarter or half-hour, as long as it is agreeable to the patient, or until feverish excitement becomes developed ; when the patient usually desires cold water, with which he may now be gratified, in the quantity of two or three spoonfuls occasionally. When fever has pretty well declared itself, to each dose of calomel from three to five grains of antimonial or James's powder may be added ; and a solution of sulphate of soda, (glauber salts) in the proportion of an ounce of salts to a pint of cold water, administered in the quantity of a wine-glassful every hour. Should the fever run high, or be

attended with much pain in the head, chest, or bowels, bleeding will be necessary, or a dozen leeches or more may be applied over the seat of affection; and on their removal, the patient may be usefully immersed in a warm bath for fifteen or twenty minutes; but the latter is not indispensable.

Should vomiting return, at this period of the disease, or at any time prove a troublesome symptom, it evinces inflammation of the stomach or bowels, or a state bordering thereon. The immediate seat of the affection, will be determined by the pain complained of, upon slightly compressing the bowels. If the pulse admits of it, the patient should be bled, to the extent of from four to eight ounces, or a dozen or more leeches should be applied over the seat of affection, and repeated if necessary two hours afterwards. The patient at the same time, should be particularly enjoined, to attend to the dictates of nature, and relieve the bowels whenever the slightest inclination to do so is felt; and in furtherance of the same intention, a clyster, consisting of a pint of warm gruel in which a dessert-spoonful of salt is dissolved, should be administered, and repeated every half hour, which I cannot too strongly recommend; for, by thus keeping the bowels excited, the stomach is rendered tranquil. And should at

the same time, sense of internal heat be complained of, another characteristic of inflammation of the stomach, the solution of sulphate of soda, previously advised, in the quantity of two or three table-spoonfuls should be administered occasionally, as the patient's common beverage. Should the patient's state forbid the bleeding; or the vomiting prove intractable, which however, I have seldom found the case, in addition to the means already recommended, and after a sufficient number of leeches have been applied, a sinapism or a thickly spread plaster upon cloth, of flour of mustard mixed with boiling water, may be applied over the whole region of the bowels, and kept on as long as the patient can bear it, short, of its producing a blister, which it will do, if the mustard be strong, and the plaster be kept on sufficiently long; without its being desirable to produce this effect, but which I do not think generally necessary in these cases.

Cramps in the extremities will in general be relieved by compression, and rubbing the affected limbs with hot flannels, and occasionally administering a warm clyster. Should these means, however, fail, a small bleeding may be put into practice, and a sinapism or mustard plaster applied to the seat of affection; and the bleeding cautiously repeated if necessary.

Should the patient not come under treatment till an advanced stage of the affection, and the symptoms present, be vomiting, with pain at the præcordia, coldness of the skin and tongue, livid extremities, and feeble pulse; a state closely bordering upon collapse,—and which may succeed immediately to the first stage, or as a sequel to the second of excitement, and therefore be accompanied, or not, with inflammation of the stomach: a circumstance, however, which may be readily determined, either by the patient's complaining of sense of inward burning, or by attending to the feeling he expresses, or desire for cold water, on presenting him with some brandy and water, which it will be well to do, with the first dose of calomel, which should be in the quantity of twenty grains, and act accordingly afterwards. The desires of the patient, and indications of nature, I am of opinion, are the rule which should invariably guide us, not only in these cases, but I believe upon all occasions. The treatment in other respects is the same, and the following is, what I should advise: First, that a dozen or twenty leeches be applied over the stomach; and if the patient appears, by oppression of the brain, dull of aspect and heavy to sleep, that six or more be applied also to the temples, or behind the ears; allowing the blood to flow

from the bites till it spontaneously ceases, which is the plan I adopt upon all occasions ; watching at the same time its effects, that the bleeding may not prove injurious. A clyster should, however, precede all other measures, and the same should be repeated every half hour during the continuance of vomiting. And after being well rubbed with hot flannels, the legs (between the knees and insteps) should be wholly enveloped in hot mustard poultices or plasters, as before advised, securing and covering them, as well as the knees and feet in hot flannels, with the view of retaining their heat. As excitement becomes developed, which, however, is seldom to any extent till bilious evacuations are procured ; inflammation of the stomach and bowels from the previous congestion, is very apt to become considerable ; requiring the use of the lancet, in conjunction with leeches, clysters, and the warm bath ; and of internal administration, the solution of the sulphate of soda or castor-oil, with an occasional dose of calomel and antimonial powder : means which should be diligently, and temperately persevered in, till health is restored.

If the patient be not seen till vomiting and purging have spontaneously ceased, with the extremities livid, and pulse scarcely or not at all to be felt ; in short, in the stage of complete

collapse; little can be hoped for or expected from any treatment, though a few will recover, even under these circumstances, if judiciously managed. As this is but a severer grade or sequel of the stage we have considered in the preceding paragraph, it requires but a modification of the same plan of treatment. A few leeches may be applied to the temples, and a dozen to the præcordia, and these repeated, if amendment should follow. The legs should be enveloped in hot sinapisms, with the precautions previously advised, to retain their warmth. The clysters should be administered, as well as the calomel, a scruple every hour, with a little hot brandy and water, or not, as previously noticed. And in addition to these means, a liniment composed of two ounces of strong mercurial ointment, with two drachms of camphor, and two ounces of liquor ammoniæ, may be well rubbed into the skin for an hour, along the inner part of the thighs, the arms, and armpits, along the course of the spine or back bone, and upon the chest; and repeated as often as convenient.

Having furnished most ample instructions for the treatment of the disease, under, I believe, almost every circumstance that is likely to present itself, I shall now finish with some observations upon diet. Patients will, from irritation of the stomach sometimes, crave food, but until

bilious evacuations take place, it will be wrong to give any, further than a little barley water, or decoction of prunes, or some bland nutrient fluid of this description; as, till this effect is induced, or the evacuations have become green, food will not be digested, and consequently would prove but an additional source of irritation: when, however, bilious evacuations do take place, a little nourishment may be, if desired, afforded, as gruel, sago, or light broth; and, as improvement takes place, may the quantity be increased, and quality improved. Observation, during twenty years that I have been practising medicine, justifies me, however, in saying, that harm will seldom or never accrue, from gratifying the patient's desires in moderation; on the contrary the dictates of nature demand our especial respect. When cold water is desired, it should be granted the patient, with the precautions I have given with respect to quantity; and the same with regard to his desire, should he at any time express any, for a little wine, or spirit and water; for timely attention to the dictates of nature will often ward off much evil. So convinced am I of this, that I make a point from time to time of consulting the patient on this head, particularly if I feel any doubt in my own mind as to the right line of practice to be pursued. After the evacuations have assumed



a natural colour, to establish the health and strength of the patient, as well as to ward off fever, I most strongly recommend that two ounces of bark powder, or twenty grains of sulphate of quinine be mixed, in a bottle of burgundy, port, or claret ; and that a wine glassful of the same be taken two or three times a day, and persevered in for some time ; and that the diet, if the appetite corresponds, be, during the same time, moderate in quantity, but rather generous in quality. And as a means, also, of establishing the strength, that the shower or cold bath be daily used at about noon, if sea bathing is not available ; for by thus imparting tone to the skin, you associatedly communicate strength to the digestive organs, and system in general.

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## CHAPTER VI.

MEANS TO BE ADOPTED IN PREVENTION OF  
THE DISEASE.

Avoid marshy, dirty, or low and ill-ventilated places ; and when necessity obliges you to travel through, or frequent, such places, smoke a cigar,

at such times, if you are accustomed so to do ; or otherwise keep a smelling-bottle under your nose, or breathe through your handkerchief. If obliged to remain in such a situation, occupy the uppermost stories of the house, and particularly as your sleeping apartment ; experience having proved, that those who sleep on the ground are the most subject to the disease ; less so, those who are elevated upon a bed, and those occupying upper floors less liable than either. If travelling, make a survey of the neighbourhood, notice the wind, and take up your abode on the highest ground to windward, as much as possible, of any and every source of evil : or, if this is not to be accomplished, place yourself under the protection of some building, or row of trees, to leeward of the evil. And avoid, also, as much as possible the night air. Endeavour at the same time to support the best state of health possible, by avoiding excess of every kind ; do not, therefore, fatigue yourself by either bodily or mental exertion ; but use both in moderation ; and be not apprehensive of the disease, fear having a great tendency to induce it ; and there really can be no ground for it, provided the precautions I am giving are attended to : nor any serious grounds of alarm, should the disease really occur, if proper measures are early resorted to. With the same view keep the body

comfortably warm ; a flannel shirt in damp weather is of great utility. With respect to your diet, it should be moderate in quantity, and of rather generous quality. Remember the purpose for which you have a stomach is simply to supply the waste and excitement of the system ; do not, therefore, weaken it by any unnecessary duty ; refrain, therefore, from slops, and all superfluities ; but, at the same time, attend to the dictates of appetite and of nature, and satisfy the wants of the system by a due supply. And, as a general rule, you will find whatever agrees with you is good for you, in moderation ; no very unnecessary self-denial needs therefore be practised. Where cholera is prevalent, it is particularly advised, that you should not leave home in the morning with an empty stomach ; a cup of coffee, with or without a tea spoonful of brandy in it, and a biscuit, is indispensable, if too early for breakfast ; and a light supper, with a little spirits and water, there is no great objection to, before going to bed, which should be at an early hour. Should you feel out of health, and your system deranged, at a time when the disease is prevailing, take two or three grains of calomel at night, and a dose of rhubarb, magnesia and ginger, or castor oil in the morning ; and after its operation, a wine-glassful of the quinine and wine two or three times a day, as I have

advised in the last chapter; and continue the latter, which I consider an excellent preventive of cholera, and one which I should recommend to all persons of weakly constitution during its epidemic prevalence.

I have only to add my most entire conviction, that the disease is not contagious, or, in other words, communicable from one person to another, in the ordinary sense of the words—a conviction which is founded not only upon the nature of the disease, but also upon observations made with reference to the subject during a period of no less than fourteen years. Facts, however, being deservedly of more weight than mere opinions, I beg leave to adduce the following, in the hope of relieving the minds of the timid from that groundless alarm which might otherwise not only interfere with, or prevent the proper attendance upon the sick, but becomes itself a predisposing or exciting cause of the disease; all parties agreeing, that of all the debilitating agencies operating upon the human system, there is no one which tends to render it more peculiarly susceptible of disease, and of Cholera in particular, than fear.

The facts referred to are these:—during two months of the period that I was physician to the principal hospital at Warsaw, devoted to the reception and treatment of this disease, out

of about thirty persons attached to the hospital, the greater number of them were in constant attendance upon the sick, which latter were to the number of from thirty to sixty constantly under treatment; there were, therefore, patients in every stage of the disease. Several of these attendants slept every night in the same apartments with the sick, on the beds which happened at the time to be unoccupied, with all the windows and doors frequently closed. These men, too, were further employed by day in assisting at the dissection of and sewing up of the bodies of such as were examined, which were very numerous; cleansing also the dissecting room, and burying the dead. And yet, notwithstanding all this, only one, during the period of two months, was attacked by the disease, and this an habitual drunkard, under circumstances which entirely negative contagion (supposing it to exist), as he had nothing whatever to do with the persons of the sick, though he occasionally assisted in the interment of the dead. He was merely a subordinate assistant to the apothecary, who occupied a detached building with some of the families of the attendants; all of whom likewise escaped the disease. This man, I repeat, was the only one attacked, and then under the following circumstances:— he had been intoxicated for several days suc-

cessively, which induced the apothecary to give him a severe beating, and lock him up for the two nights preceding his attack by the disease in a damp building, without any bedding or night-covering whatever: it was even said that the man had been deprived of his shirt. He was attacked on his return from the town where he had been in the morning marketing, and died from injudicious treatment on the following morning.

From this case the important conclusion may be drawn, that attendance upon the sick—upon those who labour under the Cholera—does not lead to any apprehension of attack, which ought for a moment to stand in the way of the common offices of humanity, and the kind and sympathising attention of friends. Whereas drunkenness, exposure to cold, &c., without any of the circumstances which are ordinarily supposed to induce what is called infection, are fatal predisposing causes to it:—those who attended upon the sick escaped the disease, whilst he who did not, but indulged in habits of intemperance, fell a victim to it.

## APPENDIX.

INSTEAD of adding notes and giving complexity to the foregoing pages, I have thought it best to embody whatever more I may have to say on the subject, in the form of an Appendix.

In reference to the first chapter, in which I have made no particular mention of the character of the fever which so usually succeeds to the attack of Cholera, I have to observe, that the disease as it prevailed in India, was very generally based upon, or succeeded by fever of simple reaction, of bilious inflammatory type; though not constantly so. In Europe, judging from the various reports, and indeed from my own observations, it is comparatively seldom so; the fever succeeding to the attack of Cholera having been much more frequently of a low remittent or typhoidal character. This difference of character I believe admits of ready explanation, my observations leading me to the conclusion, that it is simply dependent upon what I believe to be the fact — that the epidemic cause or choleric influence is in operation in Europe to a mitigated extent, or in a milder degree than in India, or generally so. And hence, it attacks those only, or nearly so, who are in the highest state of susceptibility; and such are those, who are under the operation of the immediate agency or the influential cause of intermittent or typhoidal fever. This is one explanation the case admits of; but the true one I believe, is, that the choleric cause (which I here repeat), I believe to be a poisonous agency of the sedative class of aerial

poisons — a miasm, and of the same character with those which ordinarily give rise to fevers of the intermittent and typhoidal order, operating, though perhaps under a peculiar condition or epidemic influence of earth or atmosphere, being of less intensity or virulence of character, it requires a lengthened, or its more continued operation upon the system, to develop the disease; and hence, from the derangement of function it previously gives rise to, the disease is of modified character; and generally preceded by diarrhœa, succeeding in many cases to constipation and oppression at the præcordia, and symptoms of analogous character to those which will be detailed in a subsequent paragraph. The choleric symptoms too, when they ensue, are in general of less marked character; and the fever succeeding from the previous derangement of function and depression of system, not the healthy one of simple reaction, but of low remittent typhoidal character. I have said remittent, though the first few days I have generally found it to be intermittent; coming on daily at about the same hour, preceded by coldness of the extremities, quivering of the lip, and depression of the circulation; but from the excitement of inflammation, which but too frequently becomes developed in the organs previously congested, the intermissions become imperfect, and in consequence, it assumes a remittent; and, from the conjoint debility, a typhoidal form. This view of the cause of the modified character of the fever, is confirmed in my mind, by the observation I made, that all cases of the disease, which were protracted by the want of a sufficiently decisive or judicious treatment of the choleric symptoms, lapsed into this form of fever: or very generally so. The system in these cases, being brought into the same condition by a protraction of the diseased action, as under the former instance of continuance under the influence of a mitigated cause. The system in such cases, instead of recovering its wonted energy, or healthy action, as it would have done under



judicious treatment,—developing the open and simple fever of reaction, being depressed and its functions subdued, the smothered and less energetic fever attending inflammation and irritation now takes place; and thus its typhoidal character. The difference in the character of the fever, as depending upon intensity of influence, is very strikingly illustrated, in the sudden and overpowering effect of inebriety to the unaccustomed, and speedy and perfect recovery to health, compared to the less striking, but more deeply rooted, and less curable nature of the disease, originating in habitual excess.

In the above paragraph, I have said judicious treatment — meaning thereby, what I believe to be the only really so — the one by calomel, administered in doses proportionate to the enfeebled powers of the system and consequent diminished susceptibility to its influence; and persevered in, not only to the extent of restoring the secretive functions, but till that of the liver (as evinced by the evacuations of the bowels) becomes healthy. For such a treatment, I believe to be truly radical, applying both to the root and branches also of this affection — bearing reference, not only to the cause, which it wholly removes, if carried to the extent I have advised — in the blood's purification; but its consequences also, — congestion, which it removes also, by exciting the circulation in general, and that of the liver in particular, — and thus, increasing its secretive functions and accelerating the return of blood from the mesenteric vessels, preventing the development of gastro-enteritis, and the fever of irritation. And in proof of this being, as I believe it to be, the only proper treatment, I would adduce the fact, that where the disease is otherwise treated, and the patient survives the first or cold stage, nature in most cases, or very generally, attempts her own relief in this way, by pouring forth a most copious secretion of bile, which, from the irritation and accompanied inflammation of the bowels, is generally expelled by vomiting. The extent to which the calo-

mel is administered, is of no mean importance, as I have found, when it has been administered with timidity, or discontinued while the evacuations continued green and unhealthy, the disease has not been cured, but only protracted — gastroenteritis or the fever of irritation invariably succeeding.\* The same exactly as takes place in parallel cases — commencing with less marked symptoms of choleric affection, which has occurred in individuals who had suffered by previous derangement of system, of which torpor of the liver must have constituted no inconsiderable share, as evinced by the difficulty of restoring its secretive function,— the excretions from the bowels instead of becoming bilious, copious and fluid under the operation of calomel, continuing scanty, and of green muculent or spinage-like appearance; and in accordance with which, the calomel too, when carried to the extent of affecting the mouth, instead of increasing the salivary secretion, has produced ulceration of the gums, or rather of the parts of the lips and cheeks coming in contact with the teeth. Such cases have invariably been succeeded by fever of the typhoidal form, and have been best treated, by frequent leeching in relief of congestion and local inflammatory affection, and clysters three or four times a day, as a mode of exciting the liver through the medium of the bowels, as well as to remove irritation, in conjunction with the oxymuriatic acid, given in the quantity of an ounce or two largely diluted, during the twenty-four hours, and an occasional dose of calomel and cathartic extract.

In reference to the foregoing, and in exhibition of the connexion that subsists between cholera, fever, and dysentery, I would add the notice of a milder species of the disease, which was, in the month of August, exceedingly prevalent at Warsaw,

\* Or, what I have otherwise found to be the case, has been, that the patient, when it was least expected, was attacked with, as it were, a fresh paroxysm, becoming suddenly blue and cold, and dying in this, as it were, or really is, the cold stage of fever.

and where fever and dysentery are, I was informed, annually at the same season extremely common. The following is the best account I could collect from my patients of its insidious mode of attack. A sense of fulness at the præcordia, of languor and incapacity to exertion — mental or bodily, occasionally with giddiness or headache; the latter, however, was often attended with an obscure form of fever, and only felt at some particular hour of the day; a slimy coated, white, or furred tongue, and which appeared occasionally to be swollen, being indented along its edges by the teeth; or otherwise, an unusually clean, smooth, and red tongue; lips pallid, or of leaden hue; eyes often of a pearly appearance, and surrounded with a brown circle; the countenance sallow; appetite frequently but little impaired, though the digestion in general imperfect, evinced by flatulence and distension after a meal. Bowels at first constipated, succeeded, however, in general, by relaxation, and this when attended with inflammation, terminating not unfrequently in bloody muco-purulent evacuations, or, in other words, in dysentery.

The preceding symptoms, fluctuating with the weather and contingent circumstances, may continue two, three, or more weeks; the individual feeling that he is unwell, but not attaching any importance to his condition, till the depressing influence of the atmosphere, preceding or accompanying wet weather, or an attack of indigestion, succeeding to the use of some improper article of diet — as potatoes, cabbage, sallad, or the like, or drinking too freely of some cold fluid, or fatigue, or exposure to the sun, or cold — develops the attack of cholera, coming on by purging, or vomiting, succeeded by cramps in the legs, lividity of countenance, cold skin, and feeble pulse: — a condition from which, if the patient recovers, is almost invariably succeeded by fever, of an intermitting or remitting type, coming on daily or oftener, and generally unpreceded by any very marked cold stage, further than a sense of shudder-

ing, tremor, or quivering of the lip, and depression of the circulation. An attack of this kind, it must be obvious, is nothing more than one of fever, based upon torpor of function, and congestion of the liver and chylo-poietic organs: and attributable to the continued respiration of an impure atmosphere of a milder degree than ordinarily gives rise to Cholera, such as results from the imperfect ventilation of the town, and foul state of the drains: or in persons otherwise situated, from some swamp or filth in the neighbourhood of their abodes.

Would the patient but attend to the premonitory symptoms or early stage of affection, removal to a more pure air, conjoined with two grains of calomel taken every night, with an occasional aperient, would soon restore him to health. Or if removal be not possible, a small bleeding may be necessary, and should be adopted, if the fulness about the stomach be considerable, conjoined with two grains of calomel night and morning, and an occasional aperient, as a desert spoonful of Epsom salts in a tumbler of water, or an ounce of castor oil. These means should be continued till the evacuations are healthy, and then followed up with a wine-glass full of quinine and wine, as I have before advised, two, three, or four times a day, till health is established.

I must next observe upon diarrhœa; that should this have taken place, as well as in all cases of this affection occurring during the prevalence of cholera, I should advise and strongly recommend that it always be treated upon the same principles as cholera, regarding it in the light of a mild or mitigated affection of the same character. The patients should be kept warm in bed, and after the operation of an emetic, have administered to them, from two to four grains of calomel every three or four hours in combination with a quarter of a grain of opium, and warm diluents or wine-whey. But should matters have proceeded further, and inflammation of the

bowels, or dysentery have become developed, in addition to the foregoing, a moderate bleeding should be put into practice, and leeches afterwards applied daily to the anus or belly, as long as pain in the bowels, or straining be complained of: the calomel too being given in doses from three to six grains every four hours, and continued till tenderness of the gums or gentle salivation is produced; when, and not before, in such cases will the patient experience much benefit, but the relief will then be most complete; when an occasional dose of castor-oil will be all that is required till the salivation ceases, and the evacuations become natural, when further attack may be prevented, and health established by the quinine. In the chronic form, however, of these affections, in which the evacuations have been copious, and of a purulent, or, sanguineo-purulent appearance, after the pain and inflammatory symptoms have subsided, by leeching and local irritants; the calomel instead of being administered with a view to its producing ptyalism, has been given in doses of two or three grains night and morning, in combination with a quarter or half a grain of opium; and I have thought I have seen much benefit accrue from giving at the same time, a dram of charcoal-powder made into an electuary with honey, three or four times a day.

The treatment of the attack of Cholera on this taking place, should be conducted upon the principles we have already advised, though the calomel, it will not often be found necessary to administer in doses exceeding six grains every hour or two; and in those cases preceded by a continued diarrhœa, or dysenteric state of the bowels, I have thought it advisable, to combine each dose with a quarter or a sixth part of a grain of opium, and continue it till the gums become tender; conjoining at the same time, the occasional application of leeches, emollient clysters and sinapisms, in relief of the local inflammatory affection. And subsequently, on the evacuations becoming of a more natural appearance, the quinine has been

administered, suspended in water with a little mucilage, in doses of two or three grains every two hours, during the intermissions of fever; and which, when present, should be moderated, by sponging the patient with tepid water, a laxative clyster, cold drink, cool air, and so forth.

Another observation I have to make is, that a rainy or moist state of atmosphere, is that in which I believe the severest form of the disease most frequently prevails; and in which, I have also found, in the treatment of the milder forms of Cholera, remedies by far the least successful. A stove, or fire, or red hot bricks, or other means of drying the air of the apartment of the sick, I should strongly advise upon such occasions; as well as the more free use of stimulants internally, where no objection exists to their administration. And I have no question, but that much benefit would be derived by the respiration of the chlorine gas, which may be readily disengaged in the apartment of the sick, by placing a saucer containing a tea-spoonful of oxide of manganese well mixed with the same quantity of salt, with sulphuric acid and water (in equal proportions,) sufficient to cover them on a hot brick, or over a little fire in a chafing-dish. I have also to observe, that I have employed occasionally with advantage, where the lividity of surface has been considerable, the pulse extremely weak—as such, the absorbing power of the stomach and susceptibility to influence proportionately diminished, a solution of the oxymuriate of mercury, in the proportion of a scruple rendered soluble with a dram of muriate of ammonia in four ounces of water; using this as an embrocation, having an ounce or more well rubbed in at a time, into the thighs, arms, and arm-pits, and on the chest: previously applying hot flannels to these parts, and rubbing them afterwards with the same, to facilitate its absorption. The following case offers an illustration: Szymon Drzeweiki, a strong-built man of about 35 years of age. 26th July, admitted at 11 A. M. Skin uni-

versally cold, and extremities livid, pulse scarcely perceptible; tongue and breath cold, countenance death-like; evacuations have ceased. A scruple of calomel to be administered every two hours, and occasionally a small quantity of very weak warm spirit and water. Friction with the mercurial embrocation for half an hour. A clyster of warm water, with a dessert spoonful of salt every half hour; and two hours hence, apply thirty leeches to the præcordia. — 27th. Very little amendment. Repeat the calomel, the mercurial friction, and clysters as yesterday.—28th. Very much better in every respect. Repeat six grains of calomel every two hours, and a clyster four times a day.—29th. Pulse 84, moderately full and firm, skin of natural temperature, tongue cleansing from a thick fur, gums tender, countenance animated, evacuations of a bilious appearance, and urines freely. Repeat calomel, six grains, and at noon let him take an ounce of castor-oil.—30th. Convalescent. Sulphate of quinine two grains four times a day.—On the 2d, he was discharged cured.

The above case, in common with some others, appearing to me unnecessarily protracted, I subsequently thought it right to administer the calomel in the same doses of a scruple every hour; and in so doing, I entertain no question in my own mind, but that I saved some patients whom I otherwise should have lost. The indications for a remedy being understood, it is not the quantity, but the effect induced, which should govern us in its administration. And I may truly assert, that with the commonest precaution nothing is to be feared, at least I have never seen an instance of any mischief accruing, from the large doses of mercury I have thought it necessary to prescribe. Salivation does occasionally occur, but it may be always avoided by simply attending to the appearance of the evacuations, for it invariably first acts upon the biliary organs, and when this is observed, it should be given in much less quantity, and in conjunction for the most part, as I have advised,

with an aperient. It is further satisfactory to know, that when it has so acted, the patient has almost invariably been secured from the after consequences of cholera, fever, gastro-enteritis, and dysentery; which almost constantly succeed to the protracted cases of the disease from the congestions which ensue; and it may therefore become a question, whether we act rightly in stopping short of producing this effect in any such case. Cases do however sometimes present themselves which are beyond the efforts of all ordinary treatment, in which the patient may literally be said to be poisoned, the cause being of that virulent or concentrated character that the system is rendered so prostrate, that it is perfectly insusceptible to all ordinary influence, through the medium of either the stomach, or bowels, or skin. In such cases I would suggest the trial of the inhalation of mercurial vapour—as experiment has proved, that absorption goes on from the lungs more energetically than from any other surface of the body—in conjunction with saline clysters, leeches, friction, and the like; or, administering a scruple of calomel every hour, and half-an-hour after or between each dose a solution of the muriate of soda, made in the proportion of an ounce to a pint of water, and given in the quantity of two ounces to a dose. Conceiving that from the chemical qualities of the muriate of soda it would probably add to the effects of the calomel, independent of the direct benefit which might be expected from its use as a stimulant aperient, with which intentions I have often employed it in this disease with the very best effect.

In reference to the very important subject of blood-letting in cholera, I have here to introduce, with the view of warning others, the particulars of a case which I have lately had the treatment of, and in which the individual with pain I must acknowledge, at least I sincerely believe so, fell a sacrifice to my error of judgment and neglect. I am constrained to make this avowal, having but a short time before lost an individual



under nearly similar circumstances, that I should consider myself criminal were I to be silent upon the subject.

Mr. H ———, ætat. 23, of moderately robust appearance, came to me at 9 A. M. expressing that he feared he had got the cholera. He had a sombreness of countenance, and blackness around the eyes, which led me at once to fear that it was so, although he expressed himself to be under but little alarm. He stated, that his bowels having been constipated three days successively, he disliking to take medicine, had eaten largely for several days of the coarse brown bread of the town, (which is an exceedingly heavy, roughly ground, acidulous composition of rye.) This had the desired effect, in as much as, for two days past, his bowels had been relaxed, and that since day-light this morning they had been much so. He expressed, that he was free from pain, but had a sense of distension about the belly; that his stomach was sickish, and that he felt weak. As he now had an inclination to stool, I requested him to make use of a chamber-pot, when a quart of perfectly colourless fluid passed from him, without the slightest pain or uneasiness; presently after he felt sick and vomited about a pint of nearly colourless fluid, which he said he drank before he left home. His pulse at this time was large in volume, but soft. I said to him, We will take a small quantity of blood from you; looking him however in the face, I noticed the pupils of his eyes to be dilated, which I in general consider to contra-indicate blood-letting; I said, therefore, No, now I think of it, you were a good deal bled lately, (a month before he was the subject of fever, when he was bled, and had leeches several times applied.) He hastily replied, "Never mind that, I have got stout since." With this reply, I was thrown off my guard, and, I consider now, very imprudently bled him. This I did, however, while he continued in the recumbent posture, from rather a small orifice, to an extent certainly not exceeding ten ounces. I am particular in pointing out this, that others may

profit by my error, as although I bled him with my finger upon the pulse, and without its producing any very sensible depression, I consider his loss of life mainly attributable to this bleeding, under circumstances which will be afterwards noticed. After the bleeding I gave him a tumbler of hot salt water, which almost immediately acted as an emetic, and induced perspiration. A quarter of an hour after the emetic, twelve grains of calomel were administered with a table spoonful of brandy and two of hot water; presently afterwards he had a copious evacuation, and immediately after that, from the exhaustion attending getting out of bed, and the erect posture (he had till now been kept in the recumbent state), his pulse was enfeebled, and he vomited the calomel he had taken, with about a quarter of a pint of muculent fluid. A quarter of an hour after which, the calomel and brandy and water were repeated; his pulse after this was good, and I left him to visit a patient at a short distance, where, from unforeseen circumstances, I was detained more than two hours; when, on returning, I found him exceedingly altered for the worse, — his skin was cold, his pulse exceedingly feeble, and his countenance livid. It appeared that soon after I left him, he felt a desire to evacuate, when a bed-pan being put under him (as I had directed, and particularly enjoined him to make use of, and on no account to leave the recumbent posture), he said, he could not relieve himself in that way, and would get up. On throwing himself on the bed, after passing a copious evacuation, he almost immediately vomited: and the same followed every evacuation to which he got up, and had to the number of five or six during my absence. Shortly before my arrival, he complained of cramp in the inner part of the thighs, which soon went off upon compression; but afterwards returned, in the calves of his legs more particularly, and feet, till within a short period of his death. On my return, the calomel, with brandy and water was immediately re-

peated, and continued every hour, (substituting cold water latterly for the spirit, which he desired) till his death. As I kept him strictly in the recumbent posture, and occasionally when he felt sickness, or particularly oppressed, had a clyster administered, he had no return of vomiting. A grain of opium in solution was also administered, as he expressed an earnest desire to sleep; a large sinapism was also applied to the epigastrium, as well as to the calves of the legs; and hot flannels to the extremities; but alas! all without effect: his breathing was free to within a short period of his death, and his mind coherent up to the same period, when, it became flighty. He died at eight, P. M.

The post-mortem examination presented the usual consequences of the disease. Congestion of the stomach, small intestines, and liver, with engorgement of the spleen. The mucous membrane of the stomach was slightly inflamed. The contents of the intestines--a sero-mucous fluid, without any appearance of bile, although the gall-bladder contained its usual quantity, of a ropy dark-green appearance. The urinary bladder was completely contracted. The lungs were found every where adherent to the chest, by previous inflammation; and the heart, of very large volume,—its superficial veins congested, and its substance relaxed and flaccid; the blood within the left ventricle black, and semi-coagulated.

The brain was not examined.

REMARKS—The pulse being soft, although large in volume, prohibits the employment of blood-letting—a little reflection must render apparent,—a fact I wish particularly to draw attention to, as I am sure we are often led by the desire to relieve the congestions, which are so obviously present in this disease, and which appear to indicate bleeding, to practise it without sufficiently considering the state of the pulse, and the effects of this remedy; as I did in this case, much, I consider, to the detriment of my patient. A soft pulse indicates an imperfect

state of distension of the artery, (and is obviously attributable in these cases, to the congestions which are formed — withdrawing so much blood from general circulation) as well as debility or relaxation of its contractile power; and as the state of the vessels indicates that of the heart, from which they arise, it is clear, that although the artery may appear large in volume, yet if it be soft, to bleed instead of relieving or withdrawing from the congestions (originating in defect of power), must, of necessity, add thereunto; and may be thus explained:—The blood returning to the heart, not being in quantity sufficient, on contraction of the left ventricle to distend the aorta, little is carried to the brain, in as much, as a certain degree, if not full distension of the aorta, would appear essential to its ascent in the carotids, in opposition to its gravity (that is, in the erect position), when we consider, that the descent from the arch of the aorta, must so materially favour the blood's progression in that direction. And as a further consequence of this want of distension in the aorta, a comparatively small quantity of blood must also be circulated through the coronary vessels of the heart itself; and hence, the organic structure of the heart and brain not being duly excited, torpor of their function, and thus the debility and sickness which ensue. And thus, too, would the congestions be increased, as I have previously explained. And thus it was with our patient; while in the recumbent posture, which so materially favoured the blood's ascent, and excitement of the brain, he did well; and I have no doubt would have continued to have done so, in spite of the error which was committed in bleeding him, as he would in that case, I have no doubt whatever, have survived sufficiently long for the calomel to be received into the circulation, and for it to produce its usual good effects, which it is lamentable was not the case. On the contrary, the sickness of stomach, induced by defective excitement of the brain, and consequent rejection of the remedy, added to the increase of

the congestions from the debility of the heart, superinduced by leaving the recumbent posture, which he so frequently did during my absence, are quite sufficient to account for, and I most sincerely believe to have been, the immediate cause of his death; and calls upon me to guard others from falling into the like error, and to direct particular attention to the precautions I have given with respect to bleeding at all in this disease, which instead of being generally pursued, as is too much the case, I am of opinion, should seldom be practised, if the evacuations from the bowels be pretty copious, and particularly if the case be so far advanced, that they have become of a colourless, watery or serous appearance; as this evinces, not only arrestation of secretion, from debility of function, but the perfect formation of congestion, and by consequence, the withdrawal of so much blood from general circulation. I repeat, therefore, whenever it is thought necessary to practice blood-letting in relief of particular symptoms, do it with all the precautions I have advised with respect to quantity and position of the patient. Before concluding the subject, however, I must add, that the frequent use of saline clysters, which I cannot too strongly recommend, *will* often supersede the necessity of bleeding altogether, or be useful accessaries to it. The excitement of the bowels and serous exudation they give rise to, conducing, not only to the tranquillity of the stomach, and consequent retention of our remedies, but to the relief also of congestion, and thereby to the prevention of inflammation.

Qu. Would not bleeding from the lower extremities tend to the relief of abdominal engorgement, and prove a good substitute for leeches when they are scarce? I think it worth trial. Cupping of course may be substituted.

I have now to remark upon the subject of Quinine, which I have recommended being administered after the evacuations have become healthy, in prevention of fever ensuing. The operation of this remedy is universally admitted to be tonic :

is not this its effect constringent upon the tissues of the system? This appears to me its operation, and hence, after the secretions have become healthy, its indication to constrict and restore tone to the debilitated fibres and vessels relaxed by previous distension. In the accomplishment of which, we restrain any unnecessary secretion, and thus support as well as maintain the actions of the heart and brain, and thereby prevent the congestion and fever to which the latter gives rise. Hence the success of this remedy in intermittent fever. To administer it, however, to the greatest advantage, my experience warrants me in saying, that it should be commenced upon so soon as the fever is moderated—not waiting, as is the common practice, till it is wholly subdued; provided the secretions from the bowels are pretty healthy, and then, in conjunction very generally with wine, in quantity or strength proportionate to the effect of supporting and maintaining the circulation to the point of health as nearly as may be. In so doing, we prevent, I repeat, congestion taking place, and in effecting which, we prevent its consequences—inflammation and fever; and hence is it, I can speak from experience, a most useful remedy, not only in intermittent, but in the typhoidal forms of fever in general: in which it has been too much the habit of late, to decry its use, founded upon the dogmas of Broussais and Clutterbuck, whose treatment of fevers exclusively bear reference to the effects, without any consideration of the cause, which is much more often a debilitating one, as in this disease, requiring this mode of treatment, than practitioners in general appear aware of.

On the post-mortem appearances, I must also add a remark, viz. that at Posen, Berlin, and the same was occasionally noticed at Warsaw, elevated patches, as of lymphy deposit, interposed between the membranes, was discovered in the small intestines, and occasionally ramollissement of the mucous coat, or small ulcerations; but as such effects are

commonly found in the bodies of those who die of fevers and dysentery, and form no part of the choleric condition, I merely mention them, to prove they have not altogether escaped observation.

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### ADDENDUM.

Having lately heard that the muriate of soda, or common table salt, had proved an exceedingly valuable remedy in cholera, I beg leave to annex the following reports, made by me to the Medical Council of Warsaw upon the subject. The employment of this remedy, I believe I may venture to assert, without fear of contradiction, originated with myself; having, founding my recommendation upon a consideration of the indications of treating this disease—analogical reasoning, and some trial of its effects\*, suggested its use in November of last year, not only to the Russian Government through the Imperial Ambassador, but likewise to the Government of India, and the Director General of the Army Medical department of this country, by letter which I addressed to each of these authorities respectively. The calomel, however, from a comparative trial, I thought more generally successful, and have therefore, since I made these reports seldom employed it, further than as an emetic, and by clyster, as a stimulant aperient, for which purposes I can strongly recommend it. As a popular remedy, however, I believe it unrivalled, as fulfilling the indications of the early treatment of this affection more completely than any other with which I am acquainted.

\* The hint, I must, however, add, was taken from a report made by Mr. Wilson to the Madras Medical Board, of its having been successfully employed by the natives of India.

## To the Conseil de Medicine of Warsaw.

Gentlemen :

Having had the treatment of eight cases of Cholera admitted into hospital during yesterday and the day before, I feel it my duty to submit the result to the Conseil de Medicine, with the intention of bringing to their notice—seeing the disease is committing such extensive ravages in the neighbourhood, the success of a remedy, which, from its simplicity and many and unusual advantages, it would be desirable to give, with the least possible delay, as extensive a trial to, as possible. The article alluded to, is the muriate of soda or common culinary salt, which in the three first cases was but partially tried, being administered but on admission as an emetic; the treatment subsequently pursued in these cases having been upon general principles. Such, however, has not been the case with the remaining five patients. Their treatment having been, with the exception of blood-letting, which was resorted to in relief of particular symptoms, which will be afterwards noticed, exclusively confined to this remedy: and four of the five were strongly marked and well defined cases of the disease; the one patient, a woman, was in a complete state of collapse, the extremities cold and livid, as well as the interior of the mouth, and pulse scarcely to be felt. The general plan pursued, was to administer immediately on admission, a large table-spoonful of the salt dissolved in a tumbler-ful of pretty hot water, which operated almost immediately as an emetic. After the operation of this, the patient was rubbed with hot flannels. An hour after the emetic, two table-spoonsful, or an ounce of a cold solution of salt, made of about the same strength as the emetic solution, (that is, in the proportion of one and half ounce to half a pint of water)



was administered, and the patient allowed after each dose, which was repeated every hour, as much cold water; and between each dose two or three spoonful of barley-water. This had the effect of keeping the bowels open, by which oppression was removed, and excitement became developed; and as the temperature of the skin, and pulse became developed, so were the intervals between each dose of the salt prolonged, and more of the barley-water allowed. To the patient admitted in the state of collapse, it was not thought prudent to administer the emetic, instead of which, the cold solution only was administered, and repeated every half hour.

The bleeding was practised under the following circumstances: in one, a patient far advanced in pregnancy, as she complained of much pain in the back and epigastrium. In another, a woman whose breathing was oppressed, her pulse was small but rather firm. In a third, a man whose pulse was oppressed, and who appeared very heavy to sleep.

I consider it my duty to add, that two other patients were received last evening into the hospital, both of which have died; but as these were in the most hopeless state of collapse, evinced by one having died three hours after admission, and the other during the night; although I thought it my duty to administer to each, I fully expected the termination which has ensued.

I have the honour to be, Gentlemen,

Your most obedient Servant,

C. SEARLE.

WARSAW,  
25th June, 1831.

To the Conseil de Medicine of Warsaw.

Gentlemen;

In reference to the report I had the honour to make, under date of the 25th inst. I am under the necessity of adding, that

one of the patients has since died of cerebral effusion—the individual alluded to in that report, who was bled, “a man whose pulse was oppressed, and who appeared very heavy to sleep.” It is right, however, that I should add, that this man had evidently been bled some days before admission; from which it is fair to infer, that he had been unwell, and possibly with some affection of the brain, prior to his becoming the subject of cholera. And in two other of the cases, it has been necessary to bleed the patients, from the excitement which has become developed subsequent to the attack of cholera. Since that report, several other patients have been admitted, and treated with the muriate of soda, with equal success. In saying so, I must not however conceal from the board, that others in the advanced stage of the affection have been received into hospital, to whom it has been administered, without benefit; that, it is a remedy, like all others, capable only of fulfilling certain indications; these are, I believe to be, stimulant and evacuant, and of indication therefore, more particularly in the early stage of the affection. And as its effects are freely and speedily to evacuate both stomach and bowels, it must often remove an oppressed and deranged state of these organs, and thereby a predisposing or exciting cause of the affection. I cannot, therefore, but consider it an exceedingly valuable remedy in this affection, in as much, that its simplicity and availability to all, and upon the instant of attack, gives it unusual claims to general adoption, and public exhibition. Before concluding this report, I must however observe, that cholera is a disease of the febrile class, and therefore having its distinct stages, it is in vain to seek or hope for a specific. The early stage of oppression, or that more particularly of cholera, I believe may be successfully treated with the muriate of soda, as fulfilling the indications of a stimulant and evacuant; but on the development of the second stage or that of excitement, which almost invariably follows, and which fre-

quently involves the inflammation of some particular organ, (in general either the stomach and small intestines, or the brain,) bleeding, calomel and purgatives become indispensable agents, with all the etceteras general experience has proved to be required upon such occasions.

I have the honour to be, Gentlemen,

Your most obedient Servant,

C. SEARLE.

WARSAW,

27th June, 1831.

quantity involves the inflammation of some particular organ, in  
general either the stomach and small intestine, or the brain,  
plethora, cholera and purgatives become indispensable agents,  
with all the various general responses has proved to be re-  
peated upon each occasion.

I have the honor to be, Gentlemen,  
Your most obedient Servant,

C. BERRY

WARRINGTON  
21st June 1801