BARRACANO (G.)
The Cholera morbus × × × × ×

OBSERVATIONS

ON

THE CHOLERA-MORBUS

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THE CHOLERA MORBUS

THE
CHOLERA MORBUS
TREATED BY A NEW METHOD,

WHICH PRODUCED THE HAPPIEST RESULTS DURING THE YEARS 1836 AND 1837,

WHEN THAT TERRIBLE SCOURGE EXERCISED ITS RAVAGES IN THE CITY OF NAPLES

BY GAETANO BARRACANO M. D.

Chief Medical attendant of two hospitals, and other Royal establishments.

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Washington, D.C.

NAPLES
1853.

TO THE CONGRESS OF SCIENTIFIC ITALIANS

NAPLES

SECTION OF MEDICINE. 21.st *September* 1845

Most honorable Professors,

Although the Cholera-Morbus has disappeared in Europe, its ravages are frequently revived in more distant climes. The wonderful success obtained in the cure thereof, and the future benefit to suffering mankind, in those remote regions, oblige me as a duty to lay before this worthy Congress, the result of my labours, in order that, should the work be approved of by the learned members after due examination, it may, under their patronage be forwarded to England or elsewhere, with a view to the introduction and promulgation of the system in the countries afflicted by the Cholera.

Gentlemen, on the emergency of the breaking out of that disease in 1836 and 37 at Naples,

I made the pharmacy of S. Chiara the center of my operations, and during the two visitations I supplied medicine to all the poorer classes attacked by that malady, at my own expense, and in that extensive and populous district, where the Cholera had made rapid strides, amongst hundreds of patients, I had but four deaths on both occasions, relative to whom something more might be added, should it be required.

The happy results of my treatment in the Metropolis induced his Excellency the Minister of the Interior, to appoint me to the station of Acerra where the disease was destroying some four fifths of the infected, in order to introduce my system in that neighbourhood, and familiarise the medical men with the treatment. Having explained to each practitioner my way of proceeding, I requested the two Parish surgeons to give me a statement of the cases under their immediate care, and the result of my attendance in that City was the reduction of the fatal cases to one fifth of those attacked. And these where principally patients whom I had found in a state of exhaustion, and dying in consequence of their previous treatment.

The above was drawn up by other medical

men, and signed by the authorities, leaving no doubt as to its authenticity. The comparative result with the previous mortality of the locality, together with that of Europe in general, mostly reckoned at two thirds of the Cholera cases, is all tending to prove the utility and superiority of my method.

May the merits of the work, after an attentive perusal, be appreciated by the learned members, as conducive to the relief of the unfortunate victims of this dreadful scourge, and haply, grateful humanity breathe forth a blessing to its benefactors, my only wish and consolation in the present undertaking.

Your most humble servant
GAETANO BARRACANO

DOCUMENTS.

ADMINISTRATION OF THE TOWNSHIP

OF

ACERRA

Naples, 24.th June 1837

Sir,

I have the honour to transmit to you inclosed a despatch, stating that his Excellency the Minister of the Interior has selected you to direct the medical assistance afforded in cases of Cholera-Morbus by the physicians of the commune placed under my administration.

The Mayor
Signed — ANDREW SANGUIGNO

To GAETANO BARRACANO *Esq.*
Professor of Medicine
at NAPLES.

STATE OFFICE

HOME DEPARTMENT

Copy.

Sir ,

I notice by your report of the 30.th inst: what concerns the progress of the Cholera-Morbus in the Commune of Acerra, and the arrangements you have made to that effect , as also the zeal with which the Mayor of the Commune sees them executed , who , I find , neglects nothing for the relief of the wretches seized with the dreadful disease. I inform you that the better to second such zeal , I have given directions to Signor GAETANO BARRACANO, Professor of Physic , who treats the Cholera patients of the Capital with success , to go immediately upon the spot , that he may communicate with the other professional Gentlemen of that Commune, in order that the patients be treated by the method which he has hitherto employed to great advantage.

The Minister Segretary of state for the
Home Department
Signed N. SANTANGELO.

To The Intendant of the Province
of TERRA DI LAVORO.

Conformable to the original
The under—Intendant
Signed SPINELLI.

The nominative and comparative statement, showing the results of the treatment of the patients attacked by Cholera-Morbus, who, by order of his Excellency the Minister of the Interior, were confided to the care of Doctor Gaetano Barracano, proves that only one fifth of the cases have been fatal.

Certified to be exact by the physicians attendant.

Signed J. B. Nuzzo. A. Marucella,
Verified by the Mayor
Signed Andrew Sanguigno.

Note. In order to abbreviate, we abstain from transcribing the three certificates of the parsons, and those of the hospitals, in which D. Barracano is the Chief physician, these documents having been published in the French and Italian editions.

INTRODUCTION

1. Occupied from early youth in the various hospitals and other establishments of Naples, I always endeavoured to profit by that constant attendance in acquiring by daily observations at the patients' pillow, a practical eye in the diagnosis of maladies, and the greatest possible simplicity in the treatment thereof. But to accomplish all this with the requisite degree of accuracy, I never lost sight of the doctrines of the great medical authors whose maxims have ever been my guide in practice, adopting as a rule the saying of the celebrated Hippocrates, *medicina est additio et subtractio*. But in order to add or take from, it is necessary to know the cause and locality of the disquilibrium in the solid and fluid elements of the organisation, and weigh the vital forces in action with the correlative morbid state resulting from them. And this is the great rock on which the most learned and able men have foundered. Further, it does not suffice to know the malady and pre-

scribe the medicines best adapted for the cure, it is equally requisite to be able to proportion these remedies to the requirements of the individual affected. I have seen patients get worse with medicament which when differently administered have brought them round rapidly.

2. The alarm spread throughout Europe on the first appearance of Cholera, arrested my attention and immediately on its gaining ground in this country, I read with greater interest the various authors who had treated that subject, and became well acquainted with its course, process, mode of attack, and predisposing causes. This knowledge enabled me to hit upon a mode of cure for the above disease, which I have never lost sight of, and have thus been able to recover patients hitherto considered incurable.

3. The application of divers systems and theories adopted and highly commended for the cure of the Cholera sometimes have not, after a fair trial, produced the desired effect, not even in one solitary case. Certain physicians have ordered medicines for each symptom, others change the prescriptions every hour of the day, thus complicating the treatment, and whilst many believe the disease to be contagious, others think differently, each one making his comments accordingly.

4. I must confess I was somewhat confused when I attempted to compare the various opinions I had previously read in the works of foreign authors with those of our native writers. However it was from the description of the post mortem examinations by both the parties, I first caught a ray of light , and thence originated the conception of a method of cure different to any I had hitherto seen practised.

5. When the Cholera broke out in Naples , my health was very indifferent , but anxious to become useful to suffering mankind I undertook the Parochial service of the Chiaja, district where I expected the disease would have been milder on account of its airy and delightful situation, and thus allow more time and convenience for making observations.

6. But I was deceived in my anticipations for having commenced operations on the day of my appointment , I found the disease had so encreased in that extensive parish that I had to work night and day without interruption. Shortly after I presented the Intendant with a statement of my patients , more than two thirds cured , and less than one third dead , and this occurred at a time when the malady was naturally more destructive and the infected had not that

necessary confidence in their medical attendants and consequently neglected their medicine and prescriptions, thus many, at an advanced stage of the disease, were lost through their own caprices. All the particulars of which were made known to the Intendant in the aforesaid document, describing each patient, and amongst the bad cases those who by some fatality or inadvertency had acted of their own accord and had died. This appointment enabled me to put into practice my new system of cure, and to ascertain its efficiency.

7. On my leaving this parochial circuit the mortality encreased to more than two thirds. I was obliged to devote my services entirely to the various establishments to which I vas attached, and during my attendance, I could more easily bring into play, in the center of the Capital, those effective means, whose favorable result kept me fully occupied, particularly in the decline of the disease.

8. On the second appearance of the Cholera in the following year, I was equally sought for, and my treatment was attended with the same success. And when at its maximum, I was occupied night and day, always taking the poor under my particular consideration. After the few

days practice and experiment at the Chiaja district, I invariably managed to reduce the deaths to less than one tenth. About this time I was honored by a request from the Minister of the Interior desiring a conference at Acerra where the malady was highly destructive. On the first of July I visited that city, and returned there every sixth day until the extinction of the disease. On my first and second visit, I got the syndic to call a meeting of all the medical men in the neighbourhood and communicated to them, according to instructions, my views relative to the Cholera, its nature, process, mode of cure, and means of prevention. I had also medicine administered in my own presence to several individuals attacked during the day, and consigned them with due regulations, to the two resident physicians, in order to have a comparative statement of the cases, and from their reports it appeared that out of fifty patients ten only died. This may perhaps be considered as less than the real amount, considering the great previous mortality, and the unwholesome air predominating during the summer in that City, from the surrounding marshy land.

9. Moreover, every time I went to Acerra, during the general visit of the patients, many

others presented themselves with Cholera symptoms and with incipient Cholerine, all of whom I prescribed for, desiring both the syndic and the medical men to take particular care of them, as otherwise if neglected, they might degenerate into real Cholera. I had the pleasure of ascertaining, with tolerable accuracy, that none of these cases got worse, but recovered, and that a fortnight after my first visit the disease had entirely succumbed, the last attacked, only, remaining under treatment.

10. In presenting these observations to the public, I beg for all the indulgence I no doubt stand in need of, at the same time feeling convinced that the discovery of new and useful facts in my treatment may lead in the hands of skillful practitioners to their further development and all for the good of mankind, which should ever be the object of all honest men.

CHAPTER I.

GENERAL IDEAS ON THE MALADY.

11. The nature of the miasma productive of certain maladies is not generally known, and therefore we endeavour, from the effects, to derive a knowlegde of the genus, character, and course of those diseases we unfortunately meet with, also of their various ways of acting.

12. The predominating action of asiatic Cholera possesses a vitality peculiar to itself, it lowers the organs of life, and commences by impeding more particularly the gastric functions, gradually creating an alteration in the blood a greater degree of ferment, which, having reached a certain point, so as to include the nervous system, gives rise to those phenomena which characterise the development of the malady.

13. It is my belief that the seat of the choleric principle lies in the blood, and that by a peculiar sympathy it then acts directly on the abdominal viscera and the cerebral spinal system.

14. This miasma acts on the animal economy depressing vitality, and with the violent motion

it produces in certain organs, prostrates, and reduces them to a state of asthenic inflammation.

15. The appearance, in this malady, of asthenic symptoms on one side, and of inflammatory on the other, has given rise to different theories and to various methods of cure, with regard to which the most learned professors are still at variance.

16. If the nature of Cholera were inflammatory the distemper would encrease in vitality from the first day, but on the contrary, the patients are depressed, the pulse is low, so much so as to entirely disappear as the disease gains ground; blood drawn from the vein is serous and full of carbon, in short every thing denotes the action to be of an extenuating nature. But whilst we are observing all this, we are struck with the appearance of inflammatory symptoms both in the abdominal viscera, and the cerebrum spinal process, and its action appears to be that of the narcotic-acrid poisons, depressing and inflammatory at the same time. The injection of the conjunctive, the phlogosis of the chest, the enlargement of the liver, and the turgid state of its vessels, the fulness of the mesenteric vessels, and the spots which may be observed, at the post mortem examination,

along the intestinal canal, are evident proofs of their previously irritated state; and it happens, as in Erysipelas, that the redness indicating inflammation disappears, leaving the parts affected of a darker colour. The same occurs with the spinal marrow, where the vessels are enlarged by fulness of blood, and this is no doubt the cause of the cramps and convulsive movements the patients are liable to, as may be observed in cases of inflammation of the spinal marrow.

17. If the malady were not in the blood, we should notice its development immediately after the infection, or at least in a constant given time, as takes place after vaccination, but on the contrary the process is always irregular, in some cases remaining in the system a length of time before breaking out, in others shewing itself immediately, and the latter occurs always to those individuals whose state of humours are favourable to its development. It will also be observed that persons liable to apoplexy, when attacked by the choleric contagion, which lowers the circulation and causes impediment and stagnation of the blood, are subject to more violent fits, frequently causing sudden death; others given to excesses and irregularities of diet, and

frequently subject to colics and cardialgia, when affected by cholera , are instantly and violently prostrated by the morbus , and in a few hours become its victims ; this was exemplified in the Custom-House officer, who was the first attacked, in the visitation of 1836 , and whose case was considered doubtful at the onset , on account of his having been subject to violent cholics and cardialgia. With these exceptions, the development of the malady in the majority of cases has been more or less gradual , according to the way of living , the place of residence , and other circumstances. All these observations afford sufficient grounds to enable us to decide that the acting principle or germ of the disease is concentrated in the blood and thence affects by a morbid reaction , and peculiar sympathy , the intestinal canal and nervous system , producing so many anormal and strange effects.

18. The process of violent vomiting , or evacuations, or both , once commenced , the intestinal canal , and the adjacent organs become weakened and inflamed, and the nervous system remains prostrated and shaken by the powerful shocks caused by the presence of that morbid agent.

CHAPTER II.

CONTAGION.

19. Medicine in general has derived some useful knowledge from the various theories which have prevailed at different times, and although many of them are contradictory and diametrically opposed to each other, yet from each of them some truths may be gathered. The same may be observed of the mode of propagation of the Cholera, some calling it contagious, others the reverse, many making it out epidemic, whilst a fourth party believes it to be spread by atmospheric influence, or conveyed by certain flies and insects.

20. A due observation of the track beaten by the Cholera, from Bengal and the intervening countries to our shores, will suffice to do away with all idea of its epidemic nature, because the idea of a general epidemy in so many distant regions cannot be entertained without the presupposition of gradual contagious propagation, as becomes most evident in a malady of that nature. The not being constantly contagious with all persons does not prevent it being so

with many individuals prepared to absorb the morbus, all persons not having a predisposition to be affected by the contagion, or having it in a different degree; nature displaying the same gradations in this case, as are evident in all her operations.

21. The Cholera is one of those contagious diseases possessing a mode of action peculiar to itself. Traversing the globe, it passes successively from one spot to another, according to the commerce and other circumstances favorable to its development. Hence you recognise the presence of an impelling force which from without penetrates into the interior of a city, sustained, more or less, by the nature of the soil, and habits of the population. Thus taking a general view of the disease, it will be clearly seen that the diffusibility cannot be considered as exclusively epidemic, but rather as a contagion spread by that means, in all parts; and if all are not attacked, it is because, notwithstanding the visitation, it requires a predisposition in the individual not only for Cholera, but any other malady, and it is the introduction of this scourge which makes it break out. It is by this individual predisposition that the effluvia is enabled from a certain distance to reach those who had

isolated themselves on the first approach of Cholera, in the hopes of being more secure, while on the contrary, others without the predisposition have escaped, although in immediate contact with thousands of the infected and of dead bodies.

22. Dividing the contagiousness in absolute and relative, it may be said that the plague, the small pox, and the venereal disease, are absolutely contagious, the remainder relatively, it being necessary that the blood should have a crasis of its own nature, *sui generis*, in order to be liable to contagion. In this last must be classed the Cholera which finding a fit state of the humours, the contagion like an electric spark envelops them and gives rise to the development of the malady.

23. With regard to the opinion that the morbus is conveyed by the air and the winds, we have many examples to the contrary. But is has been observed that the miasmatic principles of Cholera emanating from the infected, at a moderate distance is capable of communicating the malady. In fact it has been proved by the regis tered cases of various authors.

24. As to the effect of flies, I believe they may in certain cases be considered as positive

vehicles or means of communication. The virus coming from the infected near at hand, and the air not having had time, in the short space, to diminish or absorb the Choleric matter collected by the insects on their way through the infected locality.

CHAPTER III.

PREDISPOSING CAUSES.

25. Amongst the endemic causes, says Titler, which give rise to the Cholera in Bengal, may be numbered the bad quality of food consumed by the lower classes of natives, in certain years of scarcity and inferior produce, combined with the unwholesome air in those regions, where the continual inundations of the Ganges have left immense masses of stagnant waters, which are gradually absorbed by the hot rays of the Sun. These are no doubt the main causes of the origin of the Cholera. To these two potent sources may be added a third, a most changeable climate, the temperature varying from hot to cold, with frequent fogs (See Perrone ℘. 317).

26. From these premordial causes, it will be easily deduced that all that is likely to affect the gastric functions, such as any excess, or

bad quality of food, is likely to favour the development of the malady. Fermented liquors would also have a similar effect heating the blood and bile, any excess in the passions depressing the spirit, as fright; the use of cold drinks and ices; excessive fatigue; insolation; crowding together numbers of people or animals; sudden atmospheric changes; the immoderate indulgence in any thing beyond the natural want, and especially the abuse of sensual pleasures; also filth and misery. A bilions temperament generally predisposes. Some people imagine they can avoid the Cholera by adopting a mode of life, the contrary to what they have been used to, but esperience has shewn that, in many cases, this sudden change produces a still greater one in the economy of the human frame, and frequently predisposes for Cholera.

CHAPTER IV.

PROXIMATE CAUSE.

27. The proximate cause, in my opinion and as I have already mentioned in the general notice of the malady, consists of a miasmatic infection of the mass of the blood, which lowers

vitality], producing, by a sympathy peculiar to itself, a direct action on the abdominal viscera and the cerebral-spinal nerves.

CHAPTER V.

PROGNOSTICS.

28. The Cholera is generally less dangerous in individuals of a strong constitution, regular in their habits, neither timid or indigent, and whose vital powers, being more energetic, are capable of reaction. On the contrary the unhealthy, the irregular and the timid in whom vitality is more oppressed, easily succumb.

29. Nervous persons, subject to convulsions, are more difficult to cure. Damp weather, particularly when warm and cloudy, rather promotes the development and progress of the disease. On the breaking out of Cholera, the first cases are most likely to prove fatal.

30. In those countries where the Cholera has made repeated visits, the second has always been worse than the first and third.

ARTICLE I.

Prognostics of Choleric-Indisposition and Cholerine.

31. In Choleric-Indisposition is to be made application of the *principiis obsta* ; of itself it is but a slight derangement , easily cured with proper care , but when neglected, or badly treated , may lead to real Cholera , which will be the more serious , in proportion to the time the indisposition has lasted.

32. In Cholerine there is less to fear than in the preceding indisposition , because in this last the malady has already revealed the mildness of its nature , and the patients are much more manageable , whereas the former may be called the forerunner of real Cholera , and may break out most violently , Cholerine is the same malady , but of a milder nature. When the urine flows copiously, and the bilious evacuations are moderate , it is all that can be desired. But should the symptoms encrease , and serous evacuations ensue , with a rumbling in the lower bowels , singing in the ears , cyanosis in the eyes , and even suppression of urine , the serious nature of these symptoms would merely

prolong the crisis, and render the resolution more difficult.

ARTICLE II.

Prognostics of fulminating or acute Cholera.

33. Real Cholera, is of its own nature dangerous, particularly when preceded by diarrhoea and Choleric-Indisposition, the vital organs having been gradually exhausted, and no longer possessing the powers of reaction.

34. In the attacks of Cholera, the state of the eyes and voice, the degree of strength, will enable the observer to judge of the probable course of the malady, as more or less violent. If on the first appearance of the disease yow find the eyes wild and contracted, the voice altered, the strength gone, a very serious case may be anticipated, and much more so should ischuria ensue. During the algid state, the pulse is the grand criterion, and when from imperceptible it gradually becomes sensible, the first important advantage towards reaction has been gained, and more particularly if accompanied by an itching in the hypocondres, and hiccough with pain in the stomach, these being favorable

symptoms. On the contrary a highly excited respiration, cold breath, livid spots on the face, the eyes fixed and turned upwards, are mortal signs, especially if attended by cyanosis, with a rough skin.

35. When the reaction is favorable, bilious vomiting and evacuations, sound sleep and secretions of urine will be noticed.

36. In malignant reaction, I have always observed a violent injection of the eyes, sometimes accompanied by obstinate costinevess and prolonged coma, to be fatal symptoms.

37. Fulminating, or acute cases of Cholera, generally end fatally, and that within a few hours. Suspension of the evacuations, which occasionally become bloody, excessive agitation, coma and stupor, are the general concomitants. Among the above, bloody evacuations, wildness of manner and eyes fixed upwards are indicative of speedy death.

CHAPTER VI.

DEFINITION OF CHOLERA.

38. The Cholera is a general spasm of the body accompanied by vomiting, or purging, or

both, and generally of a serous nature, with lowering of the pulse, cyanosis, and inversion of the cerebral-spinal nerves.

CHAPTER VII.

CLASSIFICATION OF THE MALADY.

39. The observations made almost every where, have proved the excessive diffusivity of the Cholera from the moment it makes its appearance, which will account for the majority, generally and indistinctly being subject to its malevolent influence.

40. Epidemic maladies, on the contrary, generally prevalent, disappear on the breaking out of Cholera, or are accompanied by some choleric symptoms.

41. When individuals are affected by the influx of Cholera, the development of the malady does not always take place, being frequently neutralised, or destroyed by the vital forces, and a suitable diet; while at other times finding the body predisposed for contagion, the disease immediately bursts forth.

42. The period between the first impression, and the breaking out of the Cholera, remains

still undecided, the demonstrations not being sufficiently general or clear, to come to a conclusion. The excessive diffusivity of the choleric principle has been generally acknowledged, and it so occurs that those who have that crasis of altered humours corresponding with the development of Cholera, are immediately attacked, while others, who are less prepared, remain in the second degree, and so in succession. Therefore the so called choleric *delitescence*, or istantaneous reflux of the choleric humours, is indeterminate; I should be disposed to calculate it, at the average proportion of the longest time a country may be afflicted by the scourge; because all agree as to the diffusibility, and the general indisposition of which every one complains, on the first appearance of Cholera, therefore it may be conjectured that the last attacked have been under its influence from the very commencement, and that they have been gradually preparing for the final outbreak, according to their various ways of living, age, and place of residence.

43. The fact of the Russian Regiment, clearly proves this argument, which, on its return from the camp where it had been combating, spread the choleric contagion on all sides, while the

individuals of army itself, were entirely exempt.

44. The visitations of Cholera begin with but few cases, generally severe ones, which encrease in number from day to day. The stationary period is short, then begins that of the decline, during which the malady continnes to get milder.

45. The severe cases which occur on the first breaking out of Cholera are dependent on the chance of its meeting with certain individuals with the crasis of altered humours corresponding to the predisposition to Cholera, whose vital functions have not had time to become abituated to the malady, the attack is therefore more severe, and frequently proves fatal.

46. The successive encrease of the malady arises from the diffusive nature of the contagion, which acting on all, and causing an alteration in the animal economy according to the divers dispositions, breaks out with different degrees of intensity, and as the predisposed are very numerous so the malady continues to encrease until it reaches its climax. When on the decline those will be attacked, who were neither disposed or partially disposed, but who, influenced by the Choleric visitation which alters the functions of life, have gradually acquired an

affinity, and are seized by the disease; and as the weak constitutions in this class, are the most numerous, so, on the decline, there are a greater number of these patients than at the commencement, which gradually decreases in due proportion, until the entire extinction of the morbus.

47. In Cholera there are three periods, that is the attack, the algid state, and the reaction, followed by convalescence.

48. In order to have an exact knowledge of the different grades of the malady, it may be divided into, Premonitory symptoms, Choleric indisposition, Cholerine with fever or without fever, real Cholera and fulminating or acute cases.

ARTICLE I.

Premonitory symptoms and Choleric Indisposition.

49. The malady, previous to making its appearance, is generally preceded by certain prognostic signs, called *Prodrômes*, during which the digestion being the first to suffer, is accompanied by an oppression in the head, giddiness, melancholy, sudden starts during sleep, with occasional cramp and faintness.

50. In Choleric-Indisposition, the above mentioned symptoms become more decided, the cramps are more frequent and painful, with restlessness, sighing, fainting, hypocondria, lowering of the temperature, an occasional desire to vomit with darkness of the skin, and the bowels either closed, or more open than usual, with occasional pain.

ARTICLE II.

Cholerine.

51. Cholerine is a mild form of regular Cholera unattended by the algid stage, the attack and reaction only being noticed.

52. It may be divided in febrile and non febrile.

§. 1. *Cholerine with fever.*

53. Cholera is not attended with fever, but sometimes in reaction, fever must then be considered as the principal malady, accompanied by slight symptoms of Cholera; consequently febrile Cholerine is a fever with the appearance of Cholera.

54. In the 7. paragraph of the 2. Chapter: *Classification of the malady*, I have called to

notice that during the visitation of Cholera, all other diseases disappear, or break forth accompanied by choleric symptoms. An observation made by nearly all parties, and which clearly proves the aforesaid distinction to be correct. As two morbid actions may produce two different maladies, so united they will give the disease the more marked character of the prevailing morbus.

55. The development of this complaint is generally preceded by want of appetite, weakness at the extremities, thirst, costiveness, or bilious diarrhoea, the latter not so frequent, costiveness prevailing with lassitude. Cholerine follows these preliminary symptoms, with vomiting, abdominal pains, and bilious stools, cramps and convulsions, with a rapid pulse, which becomes more or less turgid, the respiration accelerated, corresponding with the encreased circulation, pain at the epigastrium. All these symptoms gradually subside and entirely disappear, and with some salutary sweating the malady terminates. The convalescence will correspond to the degree of violence of the disease, the constitution of the patient, and the nature of the treatment adopted.

§. 2. *Cholerine without fever.*

56. Persons of a strong constitution, aud even the weak who have adopted a more suitable mode of life, have less disposition for the disease and consequently a slighter attack ending in Cholerine without fever.

57. This is generally preceded by dyspepsia and lassitude, by tumefaction in the lower bowels and flatulence, palpitations, buzzing in the ears, stupefaction, restlessness, broken sleep, the sight dim, particularly that of the left eye, and sometimes double, the urine scarce and often suppressed, the pulse small, deep and slow, the face pale and dark, with a circle round the eyes, fainting fits, cholic with frequent gripings, diarrhoea, first serous, then bilious and foecal with tenesmus; cramps in the legs and fingers, tightness at the chest, accompanied by involuntary movements of the limbs which at intervals become cold.

58. Reaction commences by raising the pulse, which gradually enlarges, the body resumes its usual heat, bilious evacuations ensue without difficulty, the perspiration is sometimes abundant; all these indications are succeeded by a convalescence proportioned to the intensity of the malady.

ARTICLE III.

Cholera.

59. An attack of Cholera produces restlessness, agitation, weakness, and the patient is relieved at the commencement by vomiting, and purging of natural excrements; these two evacuations encrease prodigiously either simultaneously or alternatively, consisting of an inodorous fluid, viscous like whey, and sometimes resembling rice water when agitated; at first the temperature is maintained, as also the voice, which sometimes becomes discordant, the pulse is slow, threadlike and weak, ischuria ensues, the patient is bent double and has painful cramps, causing violent screaming.

60. During the algid stage, the pulse becomes imperceptible, or vanishes entirely, being solely concentrated in the movement of the heart, the beating of which is excessively slow; a coldness spreads from the nose, which becomes thin and sharp, throughout the whole body, rendering it more like marble. The face is sometimes of a natural colour, or pale and dark, at others bronzed or leadlike, and even blue and black, which extend to the extremities and the whole

body, constituting what is termed cyanosis; the hearing is obtuse with a rumbling in the ears; violent pains extend from the fingers and toes to the whole frame; the voice is hoarse, weak, and even inaudible; the breath is cold and agitated with a tightness at the heart; the tongue is dilated, white or blue, and red at the edges; the teeth are dried up; there is either a desire or an aversion for cold water, an oppressive pain at the epigastrium, vomiting, and white stools with flakes, either white, yellow or sanguine; then costiveness; ischuria; cold clammy sweats in the hands and face, with the chest tepid; the skin becomes wrinkled and sinks into the flesh, which is particularly evident in the palms of the hands and feet; the intellectual faculties remain intact, or but little affected, until the approach of death, mostly preceded by nocturnal ravings.

61. In the healthy reaction, the pulse is the first to show it, the cramps diminish, bilious evacuations and vomiting are renewed with itching at the epigastrium and hypocondres, the patient is anxious for cold lemonades, cianosis decreases, the urine flows, the colour revives, the tongue becomes moist, and the patient is convalescent.

62. But in the malignant reaction hiccough supervenes at intervals, and a black substance is thrown up, with similar and thready evacuations, the tongue is parched and red; cephalalgia ensues, the eyes are injected, the countenance emaciated, as also the whole frame; ischuria continues, drowsiness, coma, lethargy and death.

ARTICLE IV.

Fulminating Cholera, or acute cases.

63. This desease is characterised by its rapid passage to the algid state, during which brief period the patient frequently dies.

64. The malady often breaks out with such violence, and so unexpectedly, that the patient remains paralysed, and life is soon exhausted; but in other cases, the attack is mostly preceded by some slight symptoms, such as debility, weight in the head, yawning, restless agitation, followed by a rumbling in the bowels, vomiting and watery stools, which rapidly become white and flaky, with burning at the anus; at the same time cianosis ensues, first in the eyes, which become languid and sunken, and then spreads all over the body even to the nails, with

the exception of the chest ; the voice hoarse , speech inarticulate and confused , delirium , a coldness which begins in the limbs and extends to the whole frame , including the tongue and breath ; cramps and general contortions with cracking of the skin of the fingers ; the pulse imperceptible , and frequently entirely suppressed , the belly contracted, the diaphragm drawn into the chest , and ischuria. Towards the end, the symptoms either encrease , or are momentarily suspended, until the half open mouth and fixed eyes , mostly turned upwards , announce approaching dissolution.

65. Although reaction rarely takes place in these extreme cases , should it occur, the pulse becomes perceptible and by degrees acquires more elasticity , the purging and vomiting become more moderate and bilious , ischuria ceases, and the body revives , mostly accompanied by profuse perspiration.

66. Should it ever turn out malignant , the eyes become injected and red , the same with the face ; there is thirst , pains all over the abdomen , with vomiting and bilious evacuations, green or black ; and sometimes the bowels are obstinately closed ; fever , raving , coma and death.

CHAPTER VIII.

OBSERVATIONS ON THE METHOD OF CURE.

67. Every medical man well versed in the science and practice of medicine, always endeavours, in the treatment, to examine the causes which have produced the malady, and the organs and systems on which it has exercised its baneful influence; and following its course, to ascertain which of these last have the most suffered, in order to prescribe the most suitable and appropriate medicines.

68. In the first chapter: on *General Ideas*, §. 18, I have observed that the predominating action of Cholera begins by impeding all the abdominal functions. The liver, the circulation of which is naturally much slower, is the more affected, and so the remaining organs of the lower stomach not properly performing their functions, the hurtful humours, such as the urine and the bile, are not separated from the blood, and on the other side the remaining secretions which ought to reach the blood in a healthy condition to give it force, undergo a considerable alteration, consequently the stagnation of these baneful humours, which ought to

have been carried away, and the deterioration of those which should compensate the blood for its losses, give rise to the development of the Cholera, which reacts on those very organs whence it has derived its origin and support, suppressing in its course the bile and urine, the serious effects of the detention of which in the blood, are generally known, and in themselves sufficient to cause death.

69. From these premises it will be easy to understand that the first object in the cure of the Cholera should be to restore the abdominal functions, and promote healthy secretions in the organs of the lower stomach, so that the blood, not imbibing those noxious incentives, and getting rid of those which corrupt it, may resume that due medicine requisite for its healthy condition.

70. Urged by this view of the case, and calculating the exhaustion of the vital powers, as much by the depressing action of the morbid origin, as by its violent process, I determined on the following mode of treatment.

ARTICLE I.

General mode of cure.

71. It being acknowledged that the malady is principally seated in the blood, and that its deleterious nature acts like the narcotic acrid poisons, inflaming and stupifying the nervous system; so the medicines to cure choleric indisposition should be made to act so as to correct and clear the blood of those principles which, left to themselves, might give rise to a violent attack of Cholera. The abdominal functions being impeded, the secretions of the organs remain stagnant and vitiated, particularly those of the liver by which the heated and corrupted bile is diffused in the blood, being the principal predisposing cause; therefore the medicines for the cure of choleric indisposition must be of a corrective and alterative nature so as to free the blood of those vicious principles.

72. To correct and clear the blood of these morbid principles which constitute the crasis of the malady, it must be borne in mind that the diffusion of bile forms the principal part of it, as may be observed from the characteristic change in the complexion of the patient; so the ef-

forts of the medical attendant should be to purify the blood of these morbid principles by the emulgents best adapted for that purpose.

73. The direct way to separate diffused bile from the blood is by means of Diuresis; such as is practised in Jaundice most be resorted to in the present case, as the principal means of cure.

74. It being an established principle that diuresis must be promoted to effect a cure, it should be recollected that the action of the miasma on all the functions, and particularly the abdominal, is enflammatory, stupifying and obstructive, consequently the digestion is the first to suffer, therefore the nourishment should be light and easy of digestion.

75. In the choice of medicine to be adopted, according to the above views of the case, the excessive nervous agitation should not be lost sight of, which is prevalent in this malady, and that the medicine being somewhat more active than the corresponding vitality of the patient requires, may cause such an accumulation of symptoms as may lead to an acute stage of the disease. Therefore the means, to be useful, should be proportioned to the age and previous mode of life of the patient; so that the more aggra-

vated the symptoms, or likelihood of becoming so, the smaller the doses should be, and frequently repeated; with milder symptoms, larger doses at longer intervals.

76. According to these views, all medicines likely to overstimulate vitality, are injurious, or likely to be so; of this class may be reckoned the antimonial preparations, which are exceedingly dangerous, even in the milder stages of the disease.

77. According to the above exposition, the medical attendant should promote diuresis, sustain life by a ligt diet, and in the practical administration of medicines according to these principles, be careful that they be in proportion to the stage of the malady, and the strength of the patient.

78. Whilst promoting diuresis, the highly irritable state of the nerves of the stomach must be taken into consideration, as any over excitement might cause a concentration of the morbid action. Besides as the nature of Cholera is depressing and inflammatory the medicines to promote urine should be antiphlogistic stimulants. Saline diuretics are accordingly the most appropriate, and of these, what I have found to be the most effective in moderate doses, and

acting more directly on the bile, are the super-tartrate of potass and the sub-carbonate of potass; the first in repeated small doses is diuretic and refrigerant, the second is equally diuretic, and counteract the acidity in the urine.

79. These are the only diuretics I have made use of, and they have proved most efficacious in their effect, administrating them as follows.

ARTICLE II.

Treatment of the Prognostics, and of Choleric Indisposition.

80. When people complained of general uneasiness and difficulty of digestion, I immediately prescribed from an eigth to a quarter of an ounce of super-tartrate of potass to be taken every morning for several days; and as the general opinion appeared to be against vegetable broths made of cicoria and lettuce leaf, which would have been of great service in relieving the prevailing constipation, I substituted a grain or two of rhubarb in addition to the super-tartrate, with weak vermicelli soups, and boiled meat, no wine, or in small quantities, and a lemonade for supper, with something very light if particularly required.

81. Should a slight bilious diarrhoea ensue, without much inconvenience to the patient, I endeavoured to subdue it by mild remedies given at intervals; the powders composed of two or three drachms of super-tartrate, with a scruple to half a drachm of sub-carbonate of potass, divided into 4 or 6 papers one to be taken every two hours, and plain rice broth for food.

82. When the diarrhoea was accompanied by griping pains, the patient was then ordered a strict diet, and the above powders to be taken as before, and lemonade without ice.

83. If the diarrhoea was serous, the patient was immediately sent to bed, should he not have done so of his own accord; and my resolvent mixture was administered with opium, consisting of three drachms of super-tartrate, one drachm of sub-carbonate, two grains of aqueous extract of opium, and two ounces of gum arabic; two spoonfuls to be taken every hour, with a strict diet for two or three days, the patient being allowed to drink water at his own pleasure; the abdomen may be bathed with warm vinegar, morning and evening.

ARTICLE III.

Treatment of Febrile Cholerine.

84. When fever attended the Choleric symptoms the cases were generally mild. The patient was ordered the following mixture as an alterative; elder water twelve ounces, gum arabic two ounces, acetate of ammoniac from three to four drachms, syrup of poppies two ounces. Should any nervous symptom give the patient much annoyance at any time a table-spoon of some calming drink was given occasionally, with leeches at the epigastrium; and applications of warm vinegar three or four times a day.

ARTICLE IV.

Treatment of Afebrile Cholerine.

85. Cholerine unaccompanied by fever, presents more serious symptoms than the preceding malady, and more particularly the nervous indications, consequently the medicine must be administered in smaller doses and at shorter intervals, and the proportions must be different, that is, linden flower water twelve ounces, su-

per-tartrate three or four drachms, sub-carbonate two scruples or a drachm, gum arabic two drachms, syrup two ounces, with two grains of aqueous extract of opium, and two of extract of hen-bane; of which mixture the patient took a table-spoon every half hour; leeches were applied to the epigastrium, the anus, or those parts of the abdomen where the pain was most acute; this with hot vinegar applications five or six times a day, and lemonade for drink, completed the whole cure.

86. With due attention to this metod, I am happy to state that where the prescriptions had been attended to, no case had degenerated into real Cholera, or had menaced doing so.

ARTICLE V.

Of real Cholera.

87. In real Cholera, the symptoms being more strongly marked, the remedies must be prompt and well prepared.

88. The choleric poison, attacking the whole frame, depresses the animal organisation and entirely suspends, or partially, the secretory functions of the organs, particularly the abdominal,

and above all it paralyses the action of the kidneys and liver, and so the urine remains stagnant in the blood, causing immense injury to the animal economy; and the same with the bile, which obstructed and deteriorated in the liver, inflames the organ, and part of it is conveyed, in this caustic state, to the blood. Looking at this as the first indication in the treatment of Cholera, I immediately applied leeches to the epigastrium, in more or less numbers, according to the constitution of the patient, having always observed that the stopping of any inflammatory tendency in that organ is the most likely expedient towards the cure and recovery of the patient.

89. The resolution of Cholera being effected by means of a discharge of bile and urine, the attention of the medical attendant should be directed to the state of the organs destined for that purpose, in order that, being in a tolerable condition in the beginning of the malady, they may be able to perform their functions when the crisis arrives, and salve the patient. In fact, the appearance of some small particle of bile in the most severe stages of Cholera, in the moment of danger and uncertainty, is the most certain sign of an approaching reaction;

it is not therefore without reason that Hachim Bachi considered inflammation (as he called it) of the bile, as the principal cause of Cholera.

90. I have always observed that bleeding had a prejudicial effect, however urgent the case that required it. The act of withdrawing a considerable quantity of blood, causes so great a prostration of strength in a violent and rapid disease, where the circulation is naturally torpid, that it rather confirms the previous disposition, and prevents any effort at reaction. On the contrary the application of leeches, although frequently repeated, and in large numbers, gradually clears the blood, and gives an impulse to the fibres towards reaction. I have observed in certain patients, suffering under acute Cholera, that a single leech applied to the epigastrium, combined with other appliances, has sufficed to create hopes which have afterwards been realised. Not only is the blood gradually purified by leeches, but their bite is also a stimulant to the skin, and creates a revulsion, urging vitality to reaction.

91. Should the patient be troubled with pains in the umbilical regions, four or five leeches must be applied. Whatever quantity of blood may flow after the fall of the leeches, no fear

need be apprehended, as I have seen in particular cases large quantities of blood escape, and the patient recover, although cadaverous in appearance. Whilst the leeches are drawing, the bathing of the adjoining parts with hot vinegar must not be neglected, renewing it every half hour.

92. The inflammation of the liver through the stagnant, heated bile, having been prevented by the above means, the medicines for promoting the flow of urine, must be urged on internally at the same time, administering the following mixture: linden flower water twelve ounces, gum arabic two ounces, super-tartrate two or three drachms, sub-carbonate two scruples or a drachm, extract of hen-bane and aqueous extract of opium two grains of each, syrup two ounces; a table-spoon of which to be taken every half hour. Should the patient get worse, and the nervous symptoms become more serious, the opium and hen-bane must be withdrawn from the mixture and added to another composition which I called calming draught; that is, theriaca water two ounces, boracic acid half a drachm, aqueous extract of opium and extract of hen-bane two grains of each, syrup of gum arabic two ounces; and this solution was taken alternately with the

mixture (leaving out of it the opium and henbane) every half-hour, two spoonfuls of the mixture, and one of the calming draught. These medicines were to be taken night and day without interruption.

93. The hot vinegar applications were also renewed every half hour, night and day, and to make them more active I added an ounce of nitre to each pint of vinegar, which mixture I called *animated vinegar*.

94. At the beginning of the reaction the first mixture must be continued as usual, and one spoonful every two hours of the calming draught; and as the reaction acquires strength the first mixture may be administered at longer intervals, such as two spoonfuls every hour, instead of every half hour, and then one spoonful every hour, etc. And during the convalescence, the patient will confine himself to the first mixture, taking it every two hours in the early part of the day.

95. The patient was allowed to drink at discretion during the whole cure, plain water, sugar and water, and lemonade without ice. These drinks were very beneficial in cooling the blood, lubricating the abdominal viscera, and preventing that parched state of the intestinal

canal, produced by continual purging; and instead of adding to the looseness, they rather tended to promote the opening of the *Choledochus ductus* and the separation of the bile; the vomiting and purging became less painful also, from the moistning of the parts. Besides the sugar and lemonades were slightly nutritious, and that at a time when even asses milk would hardly remain on the stomach, unable to bear anything during the first few days.

96. During the latter part of the reaction the patient was allowed goat's and asses milk at intervals by spoonfuls according to the degree of activity of the stomach. In extreme cases of Cholera, I was in the habit of ordering milk, even in an advanced state of convalescence, the stomach remaining excessively weak, and unable to bear the heat of broths and soups which last were capable in some cases of producing incalculable injury.

97. Instances of which I witnessed in the persons of two patients who, after recovering from acute Cholera, desirous of acquiring strength more rapidly, unknown to me took, the one some broth, the other some rather gross food, upon which the purging and vomiting began afresh and they had a relapse more violent than

the first attack, every possible assistance was afforded them", which only served to prolong the life of the first until the twenty eighth day on which he died, the only strength of his constitution, enabled the second to survive.

98. As external means, from the first breaking out of the malady, I merely made use of frictions of camphorated spirits of wine, at the extremities, which I found of great use, particularly for quieting the cramps, and occasionally in cases of excessive depression, I applied it along the spine; this, with hot flannel to the feet frequently renewed, constituted all my external remedies.

99. Should the vomiting continue to annoy the patient, notwithstanding all the above endeavours to subdue the malady, some few drops of Hoffman's anodyne, repeated when required, will be an effective obstacle, and either moderate its impetuosity, or stop it entirely.

ARTICLE VI.

Treatment of fulminating or Acute Cholera.

100. In acute Cholera, notwithstanding the extreme violence, I did nothing more than add

to the activity of the medicines enjoining a stricter punctuality in their administration. Having observed that after violent vomiting and purging the intestinal canal frequently became paralysed, and the bowels consequently closed, I added a scruple or half a drachm of rhubarb to the resolvent mixture, and gave it to the patient with the same regulations, having frequently witnessed its great efficacy. And so particularly in the case of a patient seized with acute cholera: I found him, on my first visit, almost like a corpse, so much so that the people of the house had left off giving him medicine thinking it useless troubling him any further as there was no longer any hope. After repeated visits, I succeeded in making him take all his prescriptions; his body being almost lifeless, the animal functions were naturally dormant, and the bowels obstinately closed; however with the aforesaid remedies I managed to save him.

CHAPTER IX.

NOTICE ON THE VARIOUS MEANS ADOPTED GENERALLY, ALTHOUGH NOT INCLUDED IN MY PRACTICE.

101. Having already observed that the predisposition is what favours the development of the disease, I may add that unless the accumulated morbid matter is separated from the blood, all remedies not having that object in view are either useless or injurious.

102. In this malady the vital organs being violently attacked, they are unprepared to resist so sudden an evil, from their previous depression through the pernicious nature of the miasma; and should the means adopted for the cure be at all too powerful or ill selected, they will exhaust what remains of life and the patient is lost.

103. The use of blisters and frictions of tincture of Cantharides, as external means, I did not admit of in my practice for several reasons: first because their action being rapid and violent, the nervous disquilibrium was encreased, the strength exhausted, and instead of causing

a revulsion, the remaining powers were diverted, and prevented separating the humours from the blood, and their action consequently paralysed; moreover the action of Cholera being inflammatory and depressing, and that of Cantharides highly stimulating, the diathesis was consequently promoted, and that without affording any support to life; besides the slightest absorption of that substance would have confirmed the ischuria, the prevailing symptom in this malady; finally I have always found them prove injurious in their effects, when administered by others.

104. Baths would be prescribed for the diathesis, but their action being instantaneous and transient, they rather lower and reduce the system than otherwise. In slight cases they may be of some use, where the system having been less reduced, there is some strength left; but even under these circumstances I have not made use of them; nor have I noticed any good result from their adoption by others in acute cases. Therefore, seeing the probability of their proving detrimental in severe cases, I calculated the deceptive nature of the symptoms in the milder ones frequently leading, contrary to all expectations, to serious consequences; which last cir-

cumstance was verified in the case of a patient I had visited, accompanied by two other physicians, shortly after the breaking out of the malady; the patient having been consigned to the care of his private doctor, was allowed to take baths, ice, and other things, the consequence was he died at eleven o' clock at night, while on the same day his case had been characterised as light Cholerine.

105. Hot broths, and other warm drinks, I have always found injurious because they encrease the nervous excitement.

106. Although ice has been generally allowed, I have frequently found it do harm, as it materially helps to absorb the heat which the patient is particularly in need of in this malady for the sake of reaction, the patients appear to derive some relief, and are very anxious for it, but they very shortly fall back into their previous state; which circumstance I had an opportunity of observing particularly in the case of a woman seized with acute Cholera and exhibiting the most fatal symptoms, in short a hopeless case; having seen the patient at twelve o' clock in the day, I prescribed every thing that could be required in her desperate state, and that rather for the sake of not leaving her

without medicine than with any idea of producing any effect. Having to see a patient in the neighbourhood, I enquired at about six in the evening, if she was still living, and it appeared that she was rather better, so I repeated the visit and found that a considerable reaction had taken place; I desired the utmost attention and exactitude to be observed for every thing prescribed; at ten o' clock at night, I found her seated in bed, expressing in a hoarse voice how much better she had been all day, but particularly at that moment, having partaken of some ice, which I had positively forbidden, I saw the other patient, and on my return, in about twenty minutes found the poor creature was in the agonies of death, and in a few hours had ceased to live.

Ice can only be admissible in the milder cases.

107. Emetics would be indicated as favorable to the secretion of bile, as giving an additional impulse to all the organs, but in the treatment of a malady which creates a violent action in the intestinal canal, and the whole system, we must rather moderate than encrease it, otherwise these continued efforts might produce more irritation. In milder cases they may probably be beneficial.

108. All the aforesaid remedies having been adopted in general practice, and the patients recovering under the treatment, they naturally acquired a certain reputation.

109. Slight Cholera can always be cured, there being sufficient strength left to overcome it, as Carbonara notices in his treatment of Cholerine, page 209, according to which, eight patients suffering from that complaint, and all treated differently (the prescriptions being diametrically opposite) were all restored to health. In severe cases on the contrary we must discriminate and find out by experiment the most efficient means.

110. From all which may be clearly deduced that in severe and acute cases only, can the most effective treatment be ascertained from the greater number of cures accomplished thereby.

CHAPTER X.

REFLEXIONS ON DISINFECTION AND THE MEANS OF PURIFYING THE AIR.

111. The laws followed by nature in all things are constant, gradual and proportionate, and it appears that even in contagious diseases the ac-

tion corresponds with the general physical laws.

112. Absolute contagious diseases produce no diffusible effluvia, but are propagated by the means of contact only, with some few exceptional cases where the facts have not been well examined, as sometimes occurs with the venereal poison: all are infected who have connection with the impure, nevertheless, there are examples, through some strange coincidence, of persons escaping. Maladies positively contagious, are not only constantly infectious, but the infected objects retain their efficacy for a length of time, proving the component principles of the virus to be tenacious and but little liable to dispersion or change in the atmospheric air; and if man must necessarily dread them, he can at any rate shun the danger by avoiding the contact. The venereal virus affords examples, attached to linen, of becoming infectious, when moistened, after a long period of inaction; the same occurs with the small pox virus, the plague offers numberless examples of its revival from the opening of bales of wool and hides, infected a twelve months previous, proving the tenacious nature of the contagion.

113. The Cholera, which is diffused through the subtileness of its effluvia, becoming infec-

tious, even without contact, as authenticated in so many cases, is not absolutely contagious, but relatively so, and requires a predisposition in order to develope itself; therefore the effluvia being more subtle are easily dispersed in the open air, and in the course of the malady become exhausted and decomposed. In the immense population of large cities, where the disease has been raging, the disinfection has not taken place, either from its not being considered contagious, or, if attempted, from the impossibility of subjecting all parties to rules and regulations easily evaded through carelessness, idleness, malice or excessive ignorance; nevertheless the disease became extinct, and if in some countries it has occasionally returned, it must be considered rather as a fresh infection from some adjoining country.

114. In our Metropolis, during the second visitation (if not rather recrudescence) of Cholera, which lasted a long time, the government had exhausted all its measures of disinfection, yet every thing was not done, or could not be done for the above reasons, and yet the disease has not reappeared.

115. From the above exposition I mean to deduce that facts prove it to be useless attempting

to disinfect a whole country of the choleric miasma, as it dies away of its own accord as the disease declines.

116. However should it be thought prudent to destroy the effluvia left by the dead bodies, and the filth and corruption arising from the crowding of so many persons, then it will be better to remove the inmates of the buildings for at least twelve hours, and in the mean time purify all the rooms by means of chlorine gas.

117. When the Cholera rages, attempts are frequently made to purify the air, and by various means to destroy the miasma, some using fumigations of tar, others of sulphur. These fumigations of themselves are not injurious, on the contrary they are of the greatest service in destroying all kinds of infections, but they become so on account of our climate, where the nerves are so sensitive as to be unable to bear the effect of certain scents; and being so far offensive they can be easily conceived capable of producing all kinds of evil, and are therefore to be avoided. The same with Chlorine gas, which, although invaluable for neutralising contagious miasma, is yet to be used with precaution, as it affects the respiration, and consequently the vital economy, and might promote

a predisposition to contract the malady; moreover all these unpleasant expedients have a moral influence, confining the thoughts to mournful snbjects.

118. The only really useful measure, when the disease prevails in the winter, is to establish well supplied fires at certain distances throughout the town. Their action revives the spirits, and quiets the mind, rendering the general temperature at that season, more congenial to man; and the body being thus comforted, the disposition becomes more lively, and at the same time, a portion of the damp is absorbed, in and out of doors, which so much contributes to the breaking out of the malady.

CHAPTER XI.

HYGIENIC MEANS, AND PRESERVATIVES.

119. Every one of course would naturally wish to avoid so violent and dangerous a malady, but in order to succeed they most not only observe all these individual precautions, but also the administrative measures ordered by government.

120. With regard to intelligent individuals in affluent circumstances, they have merely to practice the most conducive means which medical

science can prescribe, either to avoid the disease, or to cure it, the government having to make known generally all that can tend to the accomplishment of the desired object.

121. As a predisposition is necessary for the development of the malady, so every possible care must be taken to avoid that tendency.

122. It being acknowledged that the principal action of Cholera tends to lower vitality, and impede the abdominal functions, so all that supports the vital organs, without causing irritation, or oppressing the digestion, helps to keep away the disease, therefore sobriety, continence, tranquillity of mind, and appropriate air, are the most effective means of avoiding the contagion.

123. Sobriety consists in the moderate use of food and exercice. Many persons, hearing that certain things are injurious, suddenly leave them off, and change their customary way of living adopting instead some highly praised system of the day, forgetting that the economy of life is by that means completely disorganised, consequently contributing to the susceptibility for contagion; *Habit*, says the learned Doctor Alibert, *is second nature*. Sobriety should consist in every one living in moderation, and following their

usual custom, as well in food, as in general habits, merely diminishing what may amount to excess; also avoiding the coarser kinds of food or partaking of them more sparingly than usual.

Thus, individuals in the habit of dining copiously will enjoy the same food, but in less qnantities; others, addicted to strong wines, will choose a lighter quality and be more moderate. Those who have led a laborious life, will regulate their exercice in proportion, and the same with all the habits of life. Otherwise the vital and organic systems, deprived of their usual stimulants, sink into a state of debility, thus disturbing the animal economy without subduing the Cholera, consequently making things worse.

124. Light food is generally chosen, being easy of digestion, and less oppressive to the stomach. Salt meat of all kinds must be avoided as well as aromatic substances, their action being merely momentary, they rather tend to heat the stomach and the blood without assisting the digestion. Any thing in the shape of supper must be extremely light, however inveterate may have been the habit.

125. Not to satisfy our desires to the full

extent is a main point, particularly that for the sex, then being numerous cases of the malady breaking out immediately after immoderate indulgence.

126. Quietness of mind encreases the energies of life, and those who allow themselves to be overcome by fear are their own destroyers; *spiritus tristis exicat ossa;* one may be a fatalist without neglecting all those reasonable precautions, at the same time trusting in the supreme Being who has foreseen and provided for all.

127. With regard to the choice of air, all cold and damp places must necessarily be avoided as most likely to promote a susceptibility for the malady, unless counteracted by artificial means.

128. Should a change of residence be desirable, let it be for an agreable situation on high and well ventilated ground, and with a free stomach, as these sudden changes are apt in the transition to irritate the system and to give a certain impulse to the already predisposed organisation, which has been exemplified in numerous cases. In order to avoid the evil effects of these rapid changes of scene, I have generally prepared the individuals by administering from one to two drachms of super-tartrate of po-

tass, every morning for a week, mixed with from half to a whole scruple of sub-carbonate. The medicine to be taken previous to changing the residence and continued the prescribed time on their arrival: With these precautions, no case of Cholera, to my knowledge has ensued. I have said from one to two drachms of super-tartrate, that the dose may be in proportion to the divers constitutions; as it is not intended to act as an alterative, but merely as an excitant, diuretic and laxative.

129. With regard to those who had to remain in the infected districts, I desired them to avoid all purgatives and emetics, and merely prescribed the above powders, which were renewed according to circumstances. Where the bowels were constipated I generally added from ten to fifteens grains of rhubarb to the super-tartrate, which addition I have always found of great service both in winter and summer, relieving that torpid state of the stomach which prevails in this malady, and thus the bowels are made to act, and the stomach restored.

130. Occasional warm baths, once or twice a week, I have always found beneficial, even in the winter. I myself have taken them during both the visitations and have occasionally pre-

scribed them for foreigners, although the medical Faculty in general are rather cautious in ordering them. All I can say is that under this treatment no one was attacked by Cholera.

131. With regard to substances to be carried about the person, as preservatives, I had none to recommend, believing them to be either useless or injurious, but as almost every one wished to have something of the kind, I recommended camphor, nutmeg, Hoffman's anodyne, and strong vinegars.

132. Relative to their dwelling houses, I strongly urged extreme cleanliness and frequent change of linen.

133. All these things may be easily practised by individuals in easy circumstances, but the most serious cause of the propagation of the Cholera, of the difficulty of cure, and of its prolongation, is the miserable and crowded state of the lower orders, and for that numerous class have the only governments been indued to issue certain opportune enactings, to remedy existing evils, moderate the violence of the morbus and possibly shorten its duration.

CHAPTER XII.

SANITARY MEASURES TO BE OBSERVED ON THE FIRST APPEARANCE OF CHOLERA.

134. In all Countries, on the breaking out of Asiatic Cholera, every effort has been made to prevent its extending, but generally to no purpose. The reason of which, I believe, that being only relatively contagious as before stated, a predisposition of the humours, and probably of the lymphatic vessels is requisite for its development. As the contagion may affect persons who are not predisposed, without their being subsequently subject to the disease, so they may also communicate it to all persons with whom they come in contact, until meeting with a case, where the humours have acquired an affinity, it finally breaks out, and although the individual may be isolated from the rest of the community, the course of the contagion cannot be arrested, this not being the first case of infection, but merely the first in whom it has had its full development, as the instance of the Russian regiment fully proves. The effluvia of the

morbus are also of so subtle a nature as to resemble the expansive powers of electricity, and are perhaps not more easily arrested in their course , as has been shewn in the generality of cases.

135. It frequently occurs that Asiatic Cholera , on its first appearance in a place where it was previously unknown, has been mistaken for Sporadic Cholera, even by the Medical Faculty, and treated as such or any other ordinary malady , consequently the patients have been attended to indiscriminately; but this mode of treatment greatly promotes the diffusion of the contagion, and when the error has become evident, it is too late to remedy it , as the effluvia rapidly spread in all directions , communicating the disease from place to place ; an attempt is then made to separate the patients, and to establish sanitary barriers , to prevent its further propagation , but these means , combined with various other preventatives , do not always suffice to stop the progress of the malady, and frequently produce no good whatever.

136. It has also been observed that when the contagion has surmounted all the obstacles opposed by means of sanitary barriers and quarantines , that the adjoining country has been

overun more rapidly and with greater violence in proportion to the efforts made to compress it; which circumstance having been noticed by the authorities and the people themselves, a relaxation in the severity of the regulations has ensued, leaving them both in a state of confusion and uncertainty, and, it may be said, at the mercy of the disease become still more dreadful and destructive.

137. In similar circumstances therefore, although rigorous measures may appear ineffectual in arresting the malady, no effort must be spared to save an afflicted and almost desperate population, even when persuaded of our inability to check it, for the people have still some faint hope, and every thing must be done to realise it. The authorities of the district already attacked therefore double their efforts to subdue the malady and prevent its penetrating into the adjoining countries which although menaced have as yet remained exempt. This has been certified to have taken place at Lucca, when surrounded by an infected neighbourhood, and where it was still a doubt whether it was Asiatic or sporadic Cholera. The measures taken by the authorities, seconded by the inhabitants, succeeded in preserving the City from a severe at-

tack, and that to the satisfaction of all parties. We have also seen Naples able to avoid the contagion, whilst the disease was raging in other parts of Italy; Rome did the same when Naples was first attacked; Modena, when it desolated Genoa, and the Tuscan and Roman States; and Sicily, on the first visitation at Naples.

138. It is true that subsequently almost every country was decimated by the scourge, but not generally until the usual precautions had been partially neglected. Sicily affords an instance of the necessity of enforcing the regulations, for as soon as the Authorities had begun to relax in their observance of the sanitary measures, the island became a dreadful victim both to the disease and to the consequent disturbances created by the classes, which, there as elsewhere, are ever ready to take advantage of public calamities.

139. The instance of the Russian regiment which conveyed and diffused the contagion, is a confirmation of the above statement. Had these troops not been allowed to pass, or had been detained for a time, the malady would probably have died away, and its propagation been prevented. At all events the said sanitary regulations become necessary, seeing the uncertainty

as to the mode of propagation in this disease, and also the necessity, on the part of the authorities of avoiding the resentment of a whole population for the evident neglect of those measures most calculated to arrest its course.

140. There are certain sanitary regulations practised in all ages, which no government or people can neglect without the most awful responsability, such as quarantines, lazzarettos and other measures hitherto adopted by European States against the plague and other contagious diseases.

141. To reconcile the ideas and practice of former times with those advocated at the present day by most of the countries recently visited by Cholera, would be a worthy subject of enquiry for all men of talent, medical, literary and political, and that with a view to the subsequent publication of their ideas for the benefit of the public.

142. The Governor of Odessa, Count Woronzow, gave us an excellent example on the occasion. No sooner informed of the contagious malady having penetrated into the City, as was previously threatened, notwithstanding all the usual precautions adopted on the approach of similar disasters, than he established sanitary

barriers round the first victims, and similar measures with regard to the second attacked, and so on, the crowding of people in churches, public squares, and theatres was prohibited, the City was well supplied with hospitals proper attendance, and every requisite; private houses were subject to the same system. These measures combined with some few others for the general health and cleanliness, the Police Inspection, and Civil Giurisdiction, produced the desired effect of confining the disease to the town and of gradually subduing it previous to its final extinction.

143. It would be highly advisable that the effects of the measures practised by this Governor be duly considered, in order that some conclusions be drawn, likely to prove serviceable in the event of a fresh visitation in Italy, the Levant, or elsewhere, of the Cholera or the Plague.

144. It appears to me that the pretensions of some parties to abolish all sanitary laws and quarantines for maladies which experience has proved to be propagated by means of contagion, would be highly reprehensible, and probably be destructive of the public health throughout Europe; therefore I consider it necessary to treat

contagious diseases upon the old established principles, sanctioned by experience, as preservative and conservative of the health of nations.

145. According to the above observations, as soon as the malady makes its appearance in a town, the circumscribing barriers of health to be established, must be in three distinct lines; the first will surround the house of the patient with all its inmates; the second the street, and the third the whole district. On the doubt whether the effluvia of Cholera be infectious as conveyed by the atmosphere, the communications from one barrier to the other, by the persons appointed for the purpose, will be executed with all due regard to the regulations, and if possible the entrance should be made on the contrary side to the wind, so as to prevent the effluvia exhaled by the patients being conveyed to the individuals destined for the above communications.

146. Sometimes these preliminary precautions have scarcely been effected, when the disease suddenly spreads beyond the boundaries, and then every hope of stemming its course must be abandoned, and all efforts directed towards correcting those elements which mostly tend to its development and prolongation.

147. Consequently a clearing of the more populated districts, the removal of the inhabitants from unhealthy neighbourhoods, regulations for the benefit of those trades mostly tending to the propagation of the disease; the home trade and internal communications to be perfectly free, the bearing and conduct of the authorities to be bold and fearless so as to inspire confidence in the populace, and convince them that apprehension contributes immensely towards a susceptibility for the malady, and that, on the contrary, strength of mind, with a certain moderation in the general use of all things, are the most efficacious means of preservation.

These rules and regulations are therefore to be followed attentively, as of the utmost importance.

CHAPTER XIII.

OBSERVATIONS ON THE SANITARY MEASURES TO BE ADOPTED RELATIVE TO COUNTRIES ALREADY UNDER THE INFLUENCE OF CHOLERA.

148. Although Asiatic Cholera requires, according to the above views, a predisposition, in order to develop itself, it is nevertheless highly

contagious, the meer effluvia being capable of conveying infection; hence the necessity of avoiding all connection with the Countries thus afflicted, and should reasons of state or commerce prevent its accomplishment, why then both individuals and merchandise must undergo a strict quarantine, whether they come by sea or land.

149. The arrivals by sea are the most dangerous, experience having shewn that vessels at anchor, are very apt to favor the breaking out of the disease, although during the passage it may have remained dormant, and merely reappear at the first station. This may be caused by the continual supply of pure air during the voyage joined to the undulating motion of the ship, which keeping the fibres in constant activity prevents any stagnation of the humours, and the corresponding liability to the disease; these importations must therefore be subject to a severe quarantine; the vessel will be detained in some isolated spot, far away from any inhabited neighbourhood. The crew and passengers to be made to change their entire cloathing, and to be supplied with fresh by the sanitary officers; the cast off to be steeped in vats of water and chlorate; all the linen and raiment on board to be dealt with in the same way. Should these garments

be likely to suffer from their immersion in the above, vinegar will be found a good substitute, or camphorated spirits of wine, the whole to be finally washed in fresh water with a slight alkali. The ship will undergo fumigation, and the cargo, after this first operation be exposed to a current of air for the space of forty days; the passengers and vessel will remain isolated for the same period.

150. With regard to the arrivals by land, the length of the quarantine must be regulated by the date of departure from the place infected; the same regulations to be observed relative to the goods and individuals.

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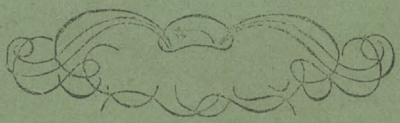
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