

DONALDSON (Jas)

Remarks on some account  
of the Cholera Epidemic of 1861  
+++ East Indies +



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**TREATMENT OF ASIATIC CHOLERA.**

AS PRACTISED IN THE EPIDEMIC OF 1861,  
AT VIZAGAPATAM, EAST INDIES.

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\* *Remarks on some Account of the Cholera Epidemic of 1861, as it appeared at Vizagapatam, Madras Presidency, East Indies, and upon the treatment which proved successful.* By JAMES DONALDSON, M.D., Surgeon, Madras Army.

A TERRIBLE outbreak of this great scourge spread over Hindostan in the summer of 1861. Not many parts of our Indian Empire were entirely free from its ravages; there were few of our large military stations where our troops did not suffer in a greater or less degree. One regiment which I formerly knew well, Her Majesty's 51st Light Infantry, stationed in the Bengal Presidency, was more than decimated, lost a number of officers, and a large proportion of the women and children connected with the corps.

I happened to be senior executive medical officer at Vizagapatam when the epidemic broke out there. The charge had been till lately a garrison surgeoncy; but when Sir C. Trevelyan came with his shears, clipping off extra allowances here and supposed unnecessary appointments there, the garrison surgeoncy was abolished, and the charge handed over to the senior executive medical officer. This officer being appointed to act as Deputy Inspector of Hospitals in absence of our chief, I, as senior at the adjacent station of Vizianagram, was sent for, and remained in medical charge of the garrison at Vizagapatam and Waltair from March till July. This charge included the European and Native garrison hospitals in the fort, along with the superintendence of the medical stores for the Northern Division of the Presidency; the charge of the 38th Regiment Native Infantry, and the Staff attached to the General of Division at Waltair, distant, respectively, two and four miles from the fort. The Europeans in the fort were mostly pensioners, and had light garrison duty. The only other Europeans in the station were two companies of the 105th Regiment, and a small number of Foot Artillery who were located about four miles off, in Waltair, near the "Staff Lines."

The disease first appeared in a fishing village situated near the dwellings of the European pensioners, on the sea-beach within the fort, a dirty, ill-conditioned, native village, and soon lamentation

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\* NOTE.—Re-printed from the "Edinburgh Medical Journal," for December 1863.

and wailing were heard arising from every house. These poor natives did not avail themselves of the European skill or medicine generously placed by Government at their disposal, and they died like "rotten sheep." The plague then spread to the residents of the fort, the prisoners in the jail, and shopkeepers in the bazaars; thence to the "lines" of the 38th Regiment, and camp-followers adjacent; and, finally, to the highly-favoured and well-situated barracks of the European effectives. These last were, fortunately, only slightly attacked; four men were seized, of whom three died, and then, providentially, the plague ceased amongst them as suddenly as it came. There was great mortality in the civil jail, as may be supposed; patients there were under circumstances of body and mind the most adverse to a hopeful issue. Of these two classes of patients I was not in charge, and of the history of the epidemic as it affected them I do not profess to give any account. The 38th Regiment did not suffer much; there were not many admissions into the hospital, and I had no deaths to record. It was chiefly the epidemic as it appeared in the fort of Vizagapatam that I had to do with, and here describe.

My first acquaintance with this dread disorder was in the civil jail; the civil surgeon, being called to a distance, asked me to look to his patients for a day or two, which I did. I did not in any way interfere with the treatment laid down, and merely observed effects as far as I could. Never before having seen anything but isolated cases of the disease, I was free from all preconceived notions on the subject of treatment. I had read of all imaginable kinds of cures, of all sorts of remedies displacing previous hopeful prescriptions, only to be in their turn displaced again by others,—and, still, no one remedy that could in any wise be trusted in the hour of danger. I had seen that the pouring in of salts into the stomach, to supply the supposed want of salines in the blood, had failed, simply from the inability of the system to make use of them, even allowing that their absorption would have contributed to the desired successful result. I had heard the vaunted "cold affusion" of some decried by sanguine experimenters, and the hot bath of others pronounced as little better than useless by so competent an authority as Morehead. I had been confidently assured by fellow army-surgeons, "that the old favourite calomel-and-opium method killed at least as many as it cured, and hopelessly complicated the convalescence of those who stupidly failed either to be killed or cured in the process." I knew, also, that the rough-and-ready

method, viz., "opium, *ad libitum*, brandy to intoxication, and chloroform to the nose," was not, to say the least, "always" successful. I had a tolerably good idea of what the *pack* of the hydropathists would do in the collapsed stage of Asiatic cholera. Finally, however much I might envy the happy experience, the wonderful statistics, and the delightful confidence of the homœopathists, I felt bound to do something more, as an army-surgeon, than administer the billionth of a grain of ipecacuanha, or the decillionth of a fourth dilution of nux.

Stranded, therefore, as it were, from a sea of doubts and uncertainties, feeling no confidence in any routine method of treatment, and earnestly desirous to do all that man could do to combat the plague, relieve suffering, and save life, I anxiously considered, with the pestilence knocking at the door, if anything could be devised to rob it of its terrors, and give myself and my patients some confidence in the result of treatment *in hospital*, and some inducement to apply there, and to apply *early*. I saw men come into the jail, not long ill, become collapsed and rapidly sink; a few hours sufficed to convert the apparently healthy convict into a lifeless corpse; some were little better than a "corpse" before it was possible to convey the stricken from the place where the gang were working. There was a death-stroke as if from a quick insidious poison—sudden prostration; every faculty, every function paralyzed; the circulation suddenly arrested; the nervous system as suddenly rendered torpid; the absorbents almost powerless; the whole powers of life at the lowest ebb. What, I thought, can be the use of throwing in drachms of calomel; how is it to be turned to account by a palsied stomach; how is it to act in the two or three remaining hours in which the body is not actually quite dead? It cannot be useful, even as a sharp stirring poison, to excite the languid circulation to action, or the equally torpid nerves and absorbents to resume their duty. Where can be the benefit of large doses of laudanum? Can it act any better in revivifying the dying frame? Must it not only deaden the already fast failing powers of nature, stupify the patient, and confuse and perplex the surgeon? How dangerous in a vast majority of cases must cold affusion be, where the circulation is already stopped in great measure, and the whole internal organization in a high state of congestion. What is the use of any internal remedy that requires, in large measure, to be absorbed and taken into the circulation when this is all but suspended?

Thus reflecting, and bent on doing all I could to rescue some of my patients from what appeared almost certain death, I came to the conclusion, that the only plan which held out a hopeful prospect, was one which should, *first*, arrest, as far as possible, the morbid process; *second*, restore as far as possible from the sudden shock; and, *third*, supply strength as far as possible to the enfeebled stomach, to take up medicine and nourishment. Cases I knew there were where all this was hopeless; cases where nothing would go down, or nothing would stay down; but I believed I had seen others where a well-directed and well-sustained stimulus would have checked the fast advancing weakness, recovered from the severe, but not necessarily permanent shock, and supported the flagging powers of nature through the terrible ordeal to be passed till the system had time to rally and take in again the pabulum necessary to enable it to fight with, and successfully overcome the morbid agency of the destroyer. I made ready, therefore, the strongest diffusible stimuli, and determined to use them as soon as I had the opportunity, and as perseveringly as the nature of each case would permit. The result was beyond my expectation; and it was with the view of recording what I believe to be an unusually successful encounter with an unusually virulent form of this fatal and inscrutable disorder, trusting that many of my brethren may thus find themselves strengthened against future visitations of the scourge, that I have ventured to commit my experience to the pages of the *Edinburgh Medical Journal*.

In discussing the following cases of cholera treated in the garrison hospital, I would have it plainly understood, that only *genuine unmistakable cases* are alluded to. I was so fortunate as to be assisted by Mr. Quinn, one of the most intelligent and active members of our subordinate medical service, who was on the spot night and day, who registered all the cases, and carefully separated all those that were doubtful, or attacked only with premonitory symptoms, from the sudden, quickly prostrating, and malignant cases of the true spasmodic seizure. In addition to these, numbers of patients with premonitory symptoms, threatening attacks of diarrhoea, etc., were promptly treated in the same way, and rapidly recovered. Of eighteen cases of true malignant cholera, treated in the garrison hospital during my tenure of the charge, in June and beginning of July, six only died, and the remainder recovered without any subsequent bad symptom, and with no tardy convalescence, but, on the contrary, with a speedy return to the usual state

of health. Of several apparently hopeless cases in the 38th Regiment, not one died; and, amongst a number of native followers who came promptly for treatment, none suffered more than a temporary and unusually short illness; the danger once passed, and the "shock" recovered from, recovery was rapid. I would append a few cases here as the most effective and satisfactory method of portraying the nature of the malady, and the treatment employed; premising that they are copied from notes taken on the spot and at the time, chiefly by Mr. Quinn, my apothecary, at the bedside of each patient, and condensed as much as is consistent with the desire to convey a correct idea of the state and treatment of each individual case.

CASE I.—Mrs. D., æt. 33, a woman of very irregular and intemperate habits. Admitted at 2 P. M., 11th June 1861, into European garrison hospital, with urgent attack of cholera, attended with severe cramps in the lower extremities, and rapidly slipping into that state known as the "collapsed stage." Seized this morning; pulse very feeble, almost imperceptible; skin cold and clammy, with cold perspiration; skin of face and hands shrunk and cadaverous-looking; stools very frequent, vomiting likewise; the matter ejected by purging and vomiting has the usual appearance of the ejecta at this stage of the disease, being like an ill-mixed or ill-digested mass of broken rice and water of a dirty white colour, with no appearance of bile, and no admixture of fecal matter. There is urgent thirst. Little or no urine passed since attack came on; the secretion seems entirely suspended; bladder empty. The exhaustion of system is very great. R. Æther chloric, spirit. ammoniæ aromat. āā ℥ss.; Mist. camph. ℥j. This draught to be taken every twenty minutes. To allay thirst, a little brandy and water occasionally, and sulphuric-acid drink, if desired. Externally, turpentine frictions; sinapisms to epigastrium and calves of legs; hot bottles or bags of sand to feet, etc.

5½ P.M.—Patient decidedly roused and strengthened by the stimulant treatment employed. Vomiting and purging less frequent, and less copious. Cramps much relieved. The pulse less feeble; the face and extremities less shrunk; and altogether there is decided improvement in the general state. Ejecta still of the same character, however, and no urine passed. To add sol. mur. morphiæ to each draught for two or three doses.

12th.—Vomiting and purging still continue; no urine voided. Circulation much stronger, and general improvement advancing. No appearance of bile in stools. Cramps have ceased. R. Mist. cretæ, ℥ij.; Tinct. catechu, ℥ij.; Æther chloric, ℥ss.; Acetat. potass., gr. xvij.; Liquor ammon. acetat., ℥ij.—M. ℥ss. after each motion,—a drop of creosote to be added to the first dose, and repeated if necessary.

Vesp.—Pulse rising; bowels still relaxed, and irritability of stomach continues. A small quantity of urine passed. To get a warm bath, and the following pill every three hours,—R. Hydrarg. chlorid. gr. ij.; ext. opii, gr. ¼; ext. belladonnæ, gr. ⅓.—M.

13th.—Improved considerably. To omit opium from pill, and add ext. taraxaci, gr. iv.

*Vesp.*—Same as last report. Stools tinged with bile; there is still irritability of stomach, nausea, and tendency to vomiting. R Mist. cretæ, ℥vi.; æther chloric ℥ij.; camphor, gr. xij.; sol. mur. morph., ℥ij.; acid hydrocyanic dilut. min. xij.—M. One ounce after each loose motion or fit of vomiting. Omit other medicines.

14th.—Better. Passed a good night. Bowels moved twice. Continue draught ordered last evening.

15th.—Continues to improve. Had no stool last night. There is still some irritability of stomach. R Acid nitro-muriatic dilut. min. xv.; aq. pur. ℥ij.;—as drink, or thrice daily. R Ext. taraxaci, gr. v.; pil. hydrarg., gr. v.; ext. belladonnæ, gr. ¼.—M. The pill twice daily.

16th.—Doing well. Bowels moved once since last report (15th). Stool more natural in appearance. Complains of great feeling of weakness. Continue medicines; the brandy and water occasionally, as seems advisable.

17th.—Doing well. Slept well. No remains of vomiting or purging. To omit the medicines, and take R Quinæ disulph., gr. ij.; acid. sulphuric dilut. min. xv.; infus. chiretæ,<sup>1</sup> ℥iss.—M. Thrice daily.

18th.—Progressing favourably.

20th.—Convalescent.

23rd.—Discharged cured.

*Remarks.*—This was the first case of cholera which happened among the European veterans or their families, and it was rather a perplexing one. The woman, widow of one of the pensioners, was of notoriously intemperate habits, her health and strength much broken, and in her apparently dying state any remedy seemed little likely to prolong life. When the state of collapse was recovered from, great irritability of stomach and bowels remained, and the functions of the liver as well as of the kidneys seemed for the time at a stand-still. Under these circumstances, not having had as yet almost any experience of the stimulant treatment, and the danger from sinking being past, I had recourse, merely as a trial, to the old favourite Indian remedy, calomel and opium, using, at the same time, however, an astringent mixture, whose efficacy in looseness and irritability of the bowels I had ample experience of. The vomiting and purging continued longer than in any other case I have had. How far this was owing to the previous habits of the patient it is difficult to say; but I believe, from much subsequent experience, that the case would have done as well or better without the mercury.

CASE II.—Boy Thompson, æt. 8. Admitted at 1 P. M., on the 13th June, in the extreme collapsed stage of cholera. Pulseless; skin cold and damp; eyes sunk; great restlessness; urine suppressed. Ill five hours previous to admission. Had some native quack medicine before coming to hospital. R Æther chloric, min. x.

<sup>1</sup> Chiretta, or chiraeta; an excellent bitter tonic of indigenous growth and extraction.

spirit. ammon. aromat., min. xv.; mist. camph.  $\bar{z}$ ss.—M. Every twenty minutes. Brandy and water as it can be taken; turpentine frictions, etc., etc.

*Vesp.* 6 P. M.—Vomited and purged several times; evacuations like rice-water in appearance; pulse just perceptible; great restlessness; lower half of body warm, upper half cold.  $\bar{R}$  Liquor potass. arsenitis, min.ij. immediately, and repeat every twenty minutes; watching effects. Sinapisms to loins and spine.

6½ P. M.—Took only two doses of the arsenical solution, or at most three; was seized with cramps at 6-45 P. M., and expired in a few minutes.

*Remarks.*—This was an extreme and hopeless case on admission. Time, so all-important in this terrible disease, had been wasted by the friends outside, and probably much harm done by some unknown medicine (believed to have been a *worm killer*) being administered to the child, and by five hours being allowed to elapse before he was brought to the hospital for treatment. Sulphuric æther was used instead of chloric, as a proper supply of the latter had not been obtained. The medicine could scarcely be got down, and little, if any, perceptible effect was produced. Life seemed paralyzed almost as when the electric flash suddenly palsies every living fibre; and the nervous system was too completely deadened to answer to any stimulus from within or from without. The state of the surface, as noted at 6 P. M., was curious, "the lower half warm, the upper half quite cold."

CASE III.—Boy Reynar, æt. 5. Admitted at 1-45 P. M., on the 14th June, with the usual symptoms of cholera. Vomited and purged six times outside. Ill from 6 A. M. Skin cold; pulse very small and quick; no urine voided since morning. Great restlessness and thirst. No cramps.  $\bar{R}$  Mist. cret. cum. æth. chlor., etc. Weak brandy and water for drink. External treatment as usual.

2 P. M.—Had a motion of the usual character. Complains much of thirst. Continue medicine.

2-30 P. M.—Cramps in stomach. Pulse small and quick.

2-45.—One stool. Repeat mixture after every evacuation.

3-45 P. M.—Voided urine for first time since seizure. To have a little weak brandy and water.

4-20 P. M.—Improving greatly; one scanty motion; continue mixture; give warm bath.

15th, 5¼ A. M.—Has had only one evacuation during the night. Skin natural; pulse good. To have a little wine and water instead of brandy.

16th.—Was very well yesterday all day and last night; the boy's father imprudently gave him early this morning a quantity of coffee, badly made probably with unwholesome milk, which brought on a quick relapse; was soon after this vomited and purged several times, and is now (6½ A. M.) very weak. Pulse feeble again; skin cold. To repeat mixture, with aromatic spirit of ammonia and tincture of catechu.

17th.—Did very well yesterday; only one feculent motion last night. Is very

drowsy this morning ; and is with difficulty roused. Conjunctive turgid. Omit medicine.

5 P. M.—Has passed a large quantity of urine containing white sediment. Stupor continues, and threatening of congestion of the brain. To have sinapisms to nape of neck ; derivatives to extremities, etc.

18th.—Passed rather a restless night ; had one feculent stool. Is becoming more lively. To take disulphate of quinine, gr.ij., in sulphuric-acid drink thrice daily. From this state he gradually improved, and was discharged cured on the 23rd June.

CASE IV.—Boy Murphy, æt. 4. Admitted 6 A. M. 21st June, with the usual symptoms of cholera: purging, vomiting, etc. No cramps. Very restless. Pulse barely perceptible ; skin cold and damp. To take the mixture with chloric æther and aromatic spirits of ammonia after each evacuation, or every twenty minutes. Brandy and water occasionally for drink.

Vesp. 5 o'clock.—This case has done well ; the disease, though still present has decreased, under influence of the medicine and stimulants administered ; and the danger is considered as nearly passed. Has been purged several times, and has vomited several times. Stools of the usual character, no appearance of bile. Pulse small and feeble. No urine yet voided. Patient more lively, and is ready to answer, if addressed. Continue medicine.

22nd.—Four motions during the night (passed in bed) of a *dark brown colour*. Doing well. Continue medicines.

23rd.—Vomiting altogether ceased. There is still diarrhœa. Continue medicine, and add tinct. catechu min. xv. to each dose.

24th.—Had a better night than previously ; diarrhœa checked.

25th.—No stool till twelve o'clock yesterday. Passed several during night of dark brown colour. To continue medicine, and give anodyne enema.

12 Noon.—No stool since the enema. Omit medicine. To have a little wine and water.

26th.—After another enema last night ; passed eight round worms. ℞ Olei ricini, ʒj. ; terebenth ʒss. ; aquæ cinnamomi, ʒss.—M. To be taken immediately.

Vesp.—Had five stools after the above medicine was taken : passed twelve more round worms. From this time he gradually, but quickly improved, and was discharged cured on the 29th June.

Remarks.—The chief features noticeable in this case are,—first, the gradual improvement under the stimulant treatment employed, so that the pulse from being “barely perceptible” in the morning, is small and feeble in the evening ; and the motions, on morning of 22nd, from being of the usual choleraic character, were “dark-brown, and feculent.” Second, that the case had been complicated with worms in the intestines, which, doubtless, in such an unusual disturbance

of the digestive system, caused considerable irritation, and in the extreme agitation of the bowels were thrown off. A good hint thus supplied was at once taken, vermicides were administered, and the whole nest of the parasites destroyed, to the great comfort and well-being of the little patient.

CASE V.—Mrs. Finnehy, æt. 20. Admitted on the 22nd June, at 6-45 P. M., with all the usual symptoms of cholera: eyes sunk, skin cold, great thirst, restlessness, etc. Took some medicine before admission (a good medicine for diarrhœa in India, named "Omum,") without benefit. Ordered the chalk mixture, with chloric æther, aromatic spirit of ammonia, tinct. catechu, hydrocyanic acid, and sol. muriat. morph. The external applications, as in all the bad cases; and a little brandy and water as drink.

23rd, 5½ A. M.—Cramps ceased within two hours after first administration of the medicine. Two stools of the true cholera character; vomited twice. Patient is much better on the whole, but very weak. Continue medicine, and brandy and water.

24th.—Has had only one stool since yesterday afternoon; the evacuation has now appearance of bile. Has vomited twice.

2 P. M.—One stool since morning, of nearly natural appearance. To omit the stimulant medicine, and (there being evidence of biliary and intestinal irritation) to take following pill every three hours:—R Pil. hydrargyri, gr.ij.; ext. taraxaci, gr.ij.; ext. belladonnæ, gr.¼.—M.

25th.—No motion. Vomited once. Is much better in every respect, but is alarmed in consequence of another "cholera patient" being admitted into same ward, and requests that she may be allowed to go to her own house. This patient vomited a large round worm on the morning of the 26th, and had no further ailment.

*Remarks.*—It is worthy of remark how often the attacks of illness in this epidemic were associated with the presence of worms, and their discharge from the bowels or by the mouth. Where these parasites are so common as they are in almost every Indian station, it would be premature to try to connect their existence with the predisposition which seems to exist in certain classes and persons to cholera, and this would require extensive observation; but it may easily be imagined that their presence adds very considerably to that extreme irritative sensitiveness so common in the course of the disease, and keeps up the tendency to sickness and diarrhœa after the first severe symptoms are checked; and their expulsion at such times is doubtless due to the violent intestinal movements in some cases, and the copious evacuations in others. Certain it is that vermicides act quickly and effectually in expelling the pests under these circumstances, when their presence is discovered or suspected, and a proper remedy administered.

CASE VI.—Jane Quinn, æt. 9. Admitted 24th June, at 10-15 A. M., with all the worst symptoms of cholera. Pulse imperceptible. *No cramps.* Skin cold.

Vomiting on admission. To take the mixture after each evacuation ; brandy and water occasionally ; external applications as usual.

10-35.—A very copious evacuation, rice-water in appearance. Continue medicine.

10-55.—Very restless ; no perceptible pulse.

11-15 A. M.—Another very copious evacuation of same character. Skin cold and damp. Continue medicine and brandy.

2 P. M.—No better ; is sinking. Electro-galvanism was now applied, and continued for about an hour with effect of prolonging life. Expired before 3 P. M.

*Remarks.*—This was one of the quickly fatal cases, running its course uninfluenced by treatment. An awfully sudden instance of the terrible power of this kind of terrors. A fine healthy-looking girl is playing about at seven o'clock after her early breakfast ; is seized as in a moment ; after a short time is carried to hospital, gets rapidly worse in spite of all that can be done, is dead before her dinner time, and is buried before sunset ! Lost to her parents and companions, and out of sight in less than one short day, as if she had never existed ! As in many of the fatal cases there were "no cramps" after her admission to hospital. These may have existed at the outset of the disease, but in many of the worst cases in this epidemic, when the patient seemed struck down as by some sudden blow, there were no cramps, no pain or suffering of any kind, an apparently complete insensibility to all impressions, external and internal ; the body still living, but every faculty, every function, to all intents and purposes, defunct. Galvanism was tried by myself, carefully and perseveringly, with the hope that if the nervous system could be so stimulated as to enable the stomach to receive impressions, strong stimulants might rouse, and treatment still avail. To a certain degree it was successful, the little patient was roused, seemed conscious, the pulse was quickened, inspiration increased and strengthened ; but only for a short space, perhaps for half an hour. The collapse re-asserted its supremacy over the artificial force thus temporarily supplied, and life ebbed so fast that it would have been but cruelty to continue the application.

CASE VII.—Mrs. M'Grath, æt. 32. Admitted 25th June, at 5 A. M., complaining of having been purged frequently for some hours past. No vomiting. No cramps. No urine voided for some hours. Pulse small ; skin warm. Thirst great. Eyes sunk. To take the chloric æther and ammonia mixtures after each loose motion. Brandy and water for drink. Hip-bath (warm).

6 A. M.—Three motions since admission, the first consisting of "slime" only, the last two bilious and watery. Voice low. Continue medicine.

8-40 A. M.—One watery motion tinged with bile. Continue medicine.

10 A. M.—A motion of the true choleraic character. No urine has been passed. Pulse very small. Voice very feeble.

11-30.—No evacuation since last report. Patient very low. Pulse barely perceptible. No urine. To continue medicine.

Noon.—Vomited for the first time. To add six drops of acid hydrocyanic diluted to next dose of mixture.

1-15.—One large motion. Has passed a small quantity of urine for first time since seizure. To add tinct. catechu, ʒij., to each dose of medicine.

26th, 5 A. M.—Three motions during night. Slept pretty well. No vomiting since the hydrocyanic acid was taken. Improving.

27th.—Only one motion during the night. To continue medicine.

28th.—Much improved. One motion only since last report, *colourless*. Omit mixture. To take,—R Ext. taraxaci, gr. iv. ; Ext. gentian, gr. ij.—M., thrice daily, with nitro-muriatic acid drink.

*Vesp.*—Says she cannot sleep. R Sol. mur. morph., ʒj.

29th.—Better. No bad symptom. Continue pill.

*Vesp.*—Repet. sol. mur. morph.

30th.—Improving in all respects.

1st July.—Says she feels quite well, and is allowed to go home.

*Remarks.*—This case differs only from some of the others in having been brought to hospital in better time. The disease was not fairly developed, and was therefore more fairly combated than most of the bad cases, both of those that died and of those that recovered. Another hour in applying for treatment might have made all the difference ; for it was evidently one that would have proved a bad case, in a nervous, weakly woman. It will be seen how well the hydrocyanic acid acted in checking the vomiting when that symptom did show itself. It should be mentioned that many of these patients, especially the women, were allowed to leave the hospital, at their own request, before they would have been discharged in the regular course, and before they were strong, or at all recruited as they ought to have been. Busy in their own houses, with children to look after, they fretted to be back to them, and it was thought better to let them go with some advice and medicine in case of need. None of them suffered from this indulgence.

CASE VIII.—Boy Carey, æt. 2. Admitted on 27th June, at 11-30 A. M., with cholera. Ill some hours, and was purged and vomited three times outside. Has all the usual symptoms. To take the mixture in proportionate quantity, and to have a little wine and water occasionally.

*Vesp.*—Vomited and purged several times during day. Evacuations watery and becoming coloured. Pulse of greater volume. Child not so restless. There is still great thirst. Omit wine. Continue medicine.

28th.—Has passed seven stools of natural colour. Child is in every respect better. To continue mixture.

29th.—Improving. Passed six stools coloured by the catechu. Passed two round worms. Continue medicine.

30th.—No evacuations since last report. Child is very weak. To have wine and good nourishment.

*Vesp.*—Very weak ; sleeps for the most part. Has had one stool. Omit chalk mixture and catechu. To take the chloric æther and aromatic spirit of ammonia only.

6-15 P.M.—Very low. Pulse small and thready. Child is in a state of stupor. To continue medicine ; sinapisms to calves of legs, etc.

8 P.M.—One watery stool. Passed another worm. Continue medicine.

1st July.—In much the same state. To continue medicine, and wine and water.

2nd.—Had four motions last night, and passed three worms. Improving. After this, the child had a turpentine enema, and took a mixture containing liquor ammonia, and oil of turpentine. Passed a number more of round worms, and thereafter gradually improved, and was soon discharged quite well.

CASE IX —Sergeant Drew, æt. 42, (in India eighteen years). Habits intemperate. Admitted 24th June, at 12-30 A. M., in the collapsed stage of cholera. Is a man of broken-down constitution and syphilitic taint. Ill for some hours outside, and was frequently vomited and purged. Pulse imperceptible at wrist. Skin cold and damp. Eyes sunk. Voice husky. Is very restless. Cramps in abdomen and lower extremities. Thirst very great. Fingers and toes quite shrunk and blue. The treatment prescribed to be perseveringly employed, internally and externally.

1-30 A. M.—Vomited twice, and was purged once within the first hour. Continue treatment.

2 A. M.—Retained the third dose of the medicine. No cramps from this hour, and patient is comfortable and quiet.

6 A. M.—Has had no more purging or vomiting, but continues in the same low state. No pulse. Skin quite cold, notwithstanding all the warm and stimulating applications. Gradually sank, and died at 9-40 forenoon.

*Remarks.*—This case shows the rapid course (nine hours) of cholera in an intemperate, enervated man. The characteristic symptoms were checked successfully, the disease apparently gone ; but the strength was gone also,—there was no restorative power, no reaction from the fatal “shock” and the patient rapidly sank from pure exhaustion.

I had intended to enter here an interesting case, *in extenso*, showing the struggle for life in a delicate woman, pregnant with a three months' fœtus ; but it occupies so many pages, and it would be so difficult to abbreviate it, that I have omitted it, afraid of making this paper unreadably long. She was treated on the same principles as above exemplified, carefully watched, and the medicine altered as the symptoms varied. The following is an extract from the remarks which I appended to the history of her illness :—“A curious and complicated case, and excited much interest. The sudden attack of cholera, which so nearly proved fatal, and kept the patient for so long a time at the very door of death, evidently destroyed the life of the fœtus at the outset ; yet there was not strength to abort, and the danger to the mother was thus proportionately increased. When a certain measure of strength returned, and abortion took place, the patient did well, and was in a fair way of recovery to perfect health at the date of my return to Vizianagram (7th July)—a surprise to all who saw her.”

CASE X.—Boy Sullivan, æt. 7. Admitted 4th July, at 8-40 A. M., with all the ordinary symptoms of cholera, but *no cramps*. Was taken ill at 6 A. M. Pulseless. Skin cold. Death pictured in the countenance. Was purged and vomited frequently before admission. Treatment as above described.

9 A. M.—Vomited and purged once—"the usual cholera stool." Is very restless. Great thirst.

10-20.—Very low. To take liquor ammonia, min. ij., every twenty minutes instead of mixture.

11-15.—One scanty motion passed in bed. No pulse perceptible at wrist. Eyes sunk. No urine passed. Continue liquor ammonia.

Noon.—No more vomiting or purging. Sinking.

1 P. M.—No change.

1-35.—Expired.

*Remarks.*—Finding that the treatment generally successful failed in this case (whether owing to being too long delayed or not), the remedy so useful in the almost comatose state often following "snake bite" was tried, in the faint hope that here too it might prove efficacious, but in vain; the liquor ammonia, said to be so potent in overcoming the evil effects in the one case, had no power over the more subtle poison of this most deadly malady.

CASE XI.—Mrs. Bowen, æt. 33. Admitted on 3rd July, at 8 P. M., with usual characteristic symptoms of cholera. Eyes sunk. Treatment as above.

4th, A. M.—Purged and vomited several times during the night. Feels very weak. Pulse small. Skin still cold. Continue medicine, and brandy and water.

*Vesp.*—Much improved; two motions only during day, with appearance of bile returning. Continue idem.

5th.—Had several bilious stools last night. No return of vomiting. Feels well. Tinct. of catechu to be added to medicine.

*Vesp.*—Passed two stools. Voided urine for first time since admission. Is doing very well.

6th.—Feels well enough to go to her own house; and, wishing to get home, is discharged accordingly.

CASE XII.—Boy Wheelan, æt. 5. Admitted 5th July, 8-40 A. M., with cholera: the usual characteristic symptoms present. Was seized at 6 A. M., and was purged and vomited several times before admission. Pulse is small and feeble. Skin cold and damp. Great restlessness and thirst. Eyes sunk, etc. To take the mixture, with æther and ammonia; and the external treatment to be carefully carried out.

Noon.—Vomited once and purged once since last report; in other respects the same. No urine. To continue treatment, and employ hip-bath, and sinapism to loins. Wine and water instead of brandy.

*Vesp.*—One motion, watery; passed a round worm. Pulse still small, but there is returning heat of surface; and other signs of improvement are evident. A little urine passed. Continue medicines.

6th.—Doing well, but weak. Vomiting ceased. Has had one motion, and passed another worm. To add tinct. catechu to mixture, and omit the hydrocyanic acid, and sol. mur. morph.

*Vesp.*—Doing well. Passed four more worms. To have some turpentine and castor-oil to-morrow morning.

7th.—Continues to improve.

This short report is only entered to show that the presence of worms, though considered important, was not regarded while the weightier symptoms lasted. On these being overcome, the vermicide was administered, and the child, being relieved of the parasites, made a good recovery.

CASE XIII.—Mr. H. J., æt. 33, was seized at 2 A. M. on the 25th June, with cholera. Visited at 7-45 A. M. Report is,—“Has been purged several times. No cramps nor vomiting. Pulse small and thready. Skin cold and damp. Eyes sunk. Extremities shrunk. Evacuations watery. Has a great thirst, etc.” To take the mixture with chloric æther, ammonia, and catechu. Brandy and water, p. r. n. External applications as usual.

11 A. M.—Vomited several times. Pulse barely perceptible. No urine passed. To continue medicine, adding two minims of the hydrocyanic acid.

4 P. M.—Purged four times,—the stools characteristic of cholera. Has vomited also several times. Is rather better; there is some reaction, and skin is warm. To continue the mixture, increasing the hydrocyanic acid to five minims. To have a hip-bath, as warm as he likes it.

26th.—Has vomited three times since last report. No evacuation from bowels. Urine passed for first time this morning. To omit mixture with chalk and catechu, and substitute small doses of brandy and ammonia occasionally.”

27th.—Doing well, but voided no urine since yesterday. Sinapism to loins; repeat hip-bath.

*Vesp.*—Passed large quantity of urine; feels well. Continue last ordered medicine.

28th.—Passed a good night. No return of vomiting or purging. Ordered wine and nourishing diet. From this date the patient gradually gained flesh and strength; and he is now (6th July) quite well.

The above short summary is given as illustrative of simple uncomplicated cholera occurring in a healthy strong man, in good circumstances (residing in the fort); and of the treatment above detailed getting fair play, being commenced before the stage of collapse arrived, and before the dangerous “vomit” had set in. The result of the treatment under these circumstances was all that could be desired.

Any one who has perused this paper so far, and looked at the above cases, must have made himself acquainted with the general plan of treatment adopted, and will have noticed the results. These cannot be said to have arisen from accident, or from carelessly collated instances. It has been said that, if left wholly to themselves, one half of cholera cases in an ordinary epidemic will recover, or be cured by nature's unaided powers. This, I presume, has been stated because the homœopathists boast that they cure one half of their patients. But, allowing such statement to be correct, this would not account for so large a proportion as twelve out of eighteen chosen bad cases recovering! I repeat that these were selected cases of the *true, decided, fully-developed* disease, such only being recorded as "*Cholera.*" They were treated in the public garrison hospital of Vizagapatam, which was regularly visited (at this time almost daily) by the Deputy-Inspector of Hospitals of the division.

To what, then, was the recovery of so large a proportion owing? Was it to calomel? I answer decidedly, No. Calomel was only given in one case, and then only after the urgent symptoms had been subdued. This powerful medicine is here, I believe, of little value; worse than useless in the first and dangerous stages, as doing no good, and preventing the administration of better remedies; and, to say the least, of very questionable utility in the later or convalescent stages. I subscribe to Dr. Morehead's opinion, that calomel is not necessary to the re-establishment of the function of the liver. We know, indeed, that men whose opinions are deserving of all respect have done their best to convince us that calomel has no direct action on the liver at all, and that the green stools which follow its journey through the bowels are owing to a chemical compound formed in its passage, and not at all to the presence of bile, pure or otherwise. But, allowing that calomel—an excellent alterative when judiciously and timeously administered—does excite the action of the liver, in common with that of other organs, when its influence has fairly begun to be exerted on the system at large, such an effect is not in this instance worth obtaining at the risk entailed; for, the "shock" overcome, and the natural powers somewhat restored, the functions of the liver and kidneys resume their usual office with little or no help. In one of two ways we may suppose that these functions are suspended. *First*, The organs are palsied, like all the other active parts of the body, and their functions are, *pro tempore*, in abeyance; their functions are not arrested more

than those of other organs, but they are more conspicuous, as it were, by their absence,—the others not being so immediately necessary to life and health. *Second*, These organs are in very many cases highly congested, and, as we well know, physiologically and pathologically, cannot under such circumstances perform aright the functions natural to them. In either case, then, when the state of paralysis is overcome, or the congestion relieved, the function is restored, and, with returning health and strength, resumes its normal state and quantity. I was already fully inclined to believe, with Dr. Morehead, that calomel was, at the least, “unnecessary;” and my experience in this epidemic fully confirms the belief: the functions referred to were fully restored in all the cases I afterwards treated, without any aid from calomel.

Was it then opium which produced the desired effect? No. Opium was also carefully avoided, and only given in the form of solution of muriate of morphia, when the alvine dejections were unusually great, or when there was unusual restlessness and inability to sleep, after the collapsed stage was fairly passed. It could not be the hydrocyanic acid, which was only added when vomiting was more than usually severe. There remained but “chloric æther,” “aromatic spirit of ammonia,” and “tincture of catechu,” commingled in the vehicle found most agreeable and convenient for their speedy and successful administration. The catechu could only act as a good astringent, and was only used as such. To the other two belonged the virtue, as I believe, of restraining this deadly malady. Well-prepared chloric æther is a potent diffusible stimulant, with an action almost instantaneous. In certain forms of diarrhœa its effect, when swallowed, is almost magical,—creating a grateful, strengthening glow in the inner man, arresting colicky pains, and diffusing a feeling of comfort not to be understood but by those who have felt its beneficial effects. Any one may, however, test this by his own personal experience. The aromatic spirit of ammonia is more generally known and appreciated, and on its virtues I need not dilate. Their combination I believe to be most powerful and most beneficial in the complaint I have been treating of. The plan adopted, and fully understood and acted upon by Mr. Quinn in my absence,<sup>1</sup> was as follows:—A bottle

<sup>1</sup> It should here be mentioned that I was obliged to live in Waltair, nearly four English miles from the fort, so that it was sometimes a couple of hours or more before I could drive down to see a patient seized after my morning visit, or before

stood ready, containing these two ingredients, in a suitable proportion of chalk mixture ; and, on admission of each patient seized with cholera, or complaining of the premonitory symptoms, a dose was administered pending discovery of the exact nature of each case. If vomiting proved the prevailing feature, the hydrocyanic acid was added, till that was subdued. Were purging the most urgent symptom, solution of muriate of morphia was combined in such dose, and as often, as seemed desirable. The tincture of catechu was superadded in every case where purging at all prevailed. The vomiting or purging checked, as the case might be (and this generally happened after a very few doses of the mixture), the first bottle was returned to, and the "chloric æther" and "aromatic spirit of ammonia" were the weapons with which the disease was chiefly combated. I need only mention the other remedies tried in this epidemic. I remembered seeing arsenic highly praised, and I tried it, but without success. I cannot say, however, that I gave it an extended or fair trial. Successful otherwise, I was not inclined to make what might have proved *rash* experiments. I may say the same of "veratria," which also proved powerless in my hands. Electricity did wonders in resuscitating patients apparently defunct, but did not restore sufficiently to help recovery. The brandy given in small doses occasionally, with a moderate admixture of water, appeared to me a most useful adjunct, and was grateful as a drink to most of the patients. Some would not take it ; with others it disagreed. In such instances the "Imperial drink" was relished, and generally remained on the stomach, except where vomiting was more than usually violent. Sulphuric acid drink, too (℞ Acid. sulph. dilut. min. x ; Aq. pur. ℥j. ad ℥ij. ; Sacchari, q. s. —M.), sometimes relieved the burning thirst, was generally liked and retained, and may be mentioned as being even trusted to as a "remedy" in India by some. Quinine is excellent as a tonic in con-

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my visit in the afternoon. It was essential, therefore, to the well-being of those attacked by cholera in my absence, that some one should be on the spot who thoroughly understood, and could be trusted fairly to carry out my plan ; and I was most fortunate in having as my assistant Mr. Quinn, one of the most intelligent and active members of our subordinate medical service, whom I could thoroughly trust to carry out my directions, and who did excellent service during this epidemic. I was thus fortunate, and so managed to perform the duties required, by almost unremitting work *from 4 A. M. till 8 P. M.* But it was an ill-saved economy, abolishing the garrison surgeoncy, and throwing such overwhelming work on one man's shoulders. No one could do it long in a cholera season.

valescence, and greatly aids the recovery of the strength after the exhausting process sustained by the constitution.<sup>1</sup>

I have not alluded to "external means," nor, indeed, need I do so here. I am not professing to write a treatise on cholera; on all that has been done or may be done, in the way of treatment, any more than I am describing its nature, or explaining its causes,—the sinapisms over the stomach and spine, the turpentine stupes, the sand-bags and hot bottles, the dry and moist frictions, etc., etc., are all useful in their place; we took advantage of them all; but they are not to be trusted to the exclusion, or careless administration, of appropriate *internal* treatment; they are useful adjuncts, I think, nothing more.

On leaving Vizagapatam, I was resident for a short time at Bimlipatam, sixteen miles farther up the Coromandal coast (or north of Waltair). There, I had many more cases of cholera to treat. We were surrounded by the native village and bazaar; and numbers had perished within a stone's throw of the friend's house in which we were located. I pursued the same plan of treatment at Bimlipatam, and with even greater success. Of all the cases noted, including my

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<sup>1</sup> After this epidemic had passed over, I saw recommended a plan of treatment by a medical-brother in Bengal (I have unfortunately forgotten his name), which is well worth remembering. This gentleman believes, if I understood him aright, that in the first "shock" and general prostration, the blood is all but stagnated, and the heart quite unequal to drive it on; and he recommends that the lancet should be used at this juncture, and a small quantity of the dark "grumous" blood drawn from the vein opened. The blood may not flow, and then, I think, he looks on the case as hopeless; if it flow freely, he does not take much, but just enough to relieve the circulation, the heart is able to act again, and the patient relieved. This sounds well in theory (I do not know how it succeeded in actual practice), and I should be well inclined to try it in suitable cases. I believe that removing this difficulty in nature's way would be a powerful help to the stimulant method; but it would probably only be beneficial in cases of *general venous congestion*, as likely to occur in full-blooded, young and strong Europeans. I do not think,—and did not think at the time I noticed this plan recommended,—that any of my cases would have benefited by blood-letting. There was no general venous congestion in any of them. Congestion of many or all of the internal organs there evidently was; and, could a certain amount of blood have been withdrawn from the organ or organs most congested, the result, I believe, in certain of the cases would have been favourable to their after-progress; but *general* bleeding would, I am confident, have utterly failed,—and, even if possible, would have had no good effect on the ultimate issue.

own and that of my wife and child, all were cured but one ; that one was a native female whom I did not see. Some of the higher caste natives will not allow their women to be seen by Europeans, even in cases of illness ; and whether this woman was past hope when the remedy reached her, or whether it was not properly or regularly given, I could not find out. One cannot trust to the statements of the natives of India on this point, and this fatal case did not militate in my mind against the general successful issue amongst the natives ; and, I may add, that the stimulant plan acted more powerfully, and more successfully, even, than with the Europeans whose cases I have described ; probably, for the reason, that they live more plainly, and are more easily and quickly affected by such powerful agents. From Bimlipatam we returned to my station and regiment (the 46th) at Vizianagram. The epidemic there was comparatively mild, and there had not been, by any means, such a per-centage of sickness as at the neighbouring stations. I had four well-marked cases admitted into my hospital after my return ; these all did well. A number of other cases were treated amongst the camp-followers, native servants, etc., and all successfully. I had no fatal case after my return to Vizianagram.

In conclusion, I would beg of my professional brethren to remark, that I am not advocating any "nostrum" or line of treatment as "infallible" in curing this terrible scourge of our kind, especially of our European armies in our Indian possessions ; far from it. I would speak with all diffidence on a subject, and in reference to a disease which has puzzled the brains and baffled the arts of the wisest and best in our truth-searching profession. I write merely to call attention to a plan of treatment which I thought and hoped would, under God, prove successful ; which did prove successful in a wonderful, I think I may say an *unusual*, degree, and which I feel firmly persuaded will prove successful again, if tested fairly, fully, and, in each case, *without delay*. If I should be so fortunate as to persuade any of my medical brethren to give a fair, unprejudiced trial to the plan here advocated, and have the satisfaction to learn hereafter that they have done so with results equal, or even approximating, to those here recorded, I shall feel myself well rewarded for compelling myself into the publication of an article undertaken with considerable unwillingness, and amid many difficulties.

MORARJANE, August, 1863.





