powers of this medicine, when given in small doses, and frequently and perseveringly renewed, I can state that I have not met with them, nor have I met with any cases in the premonitory stage which, when treated by this method, have ever farther advanced.

To the facts then afforded by the foregoing series of cases I would now appeal, as evidence of the truth of the position which I have set up, that calomel given in small doses is a remedy for this disease. Upon the nature and force of this evidence it is not necessary for me farther to dwell. The cases which have been given were *all* of collapse, and some of them to a profound degree. They were all *first* cases, and, therefore, *unpicked*, and were *all* the *first* cases of *all* the individuals with whom I had personal communication, and whose cases, with one exception, I had seen. *All* the patients, with two or three exceptions, escaped the consecutive fever, and the constitutional effects from the medicine. They were *all* treated by the *same* remedy, and they *all* recovered.

To the evidence here given, I hoped to have been able to add the authorized report of a commission of six or more persons, half of them being medical, and which I solicited the members of the corporate body of this town to organize and superintend,—the duties of the persons forming such commission to consist in visiting and making minutes of the *precise* state of each case at the period of my visit, and to report the results of the treatment of it. Had my request been complied with, I doubt not the result would have been to establish in the public mind the same conviction of the value of this remedy, which has been so long established in my own, and which almost every hour during the present period tends but the more fully to confirm. As it is, I am willing to hope that the brief and imperfect notice which I have here again given of the remedial power of calomel, will not be without its effect; and by leading to its more general adoption, procure for the community that is visited by the disease, a very large diminution of its agonizing sufferings and losses from it.

I am, Sir, yours, &c.,

JOSEPH AYRE, M.D.

Hull, Sept. 6th, 1834.

* * The former communications of Dr. Ayre on this subject will be found in Vol. II., 1831-32, at page 43 (No. 450), page 105 (No. 452), page 271 (No. 457), page 458 (No. 463), and page 615 (No. 468); and in Vol. I., 1832-33, at page 18 (No. 474), and page 637 (No. 489).

CASES OF

MALIGNANT CHOLERA

SUCCESSFULLY TREATED WITH

EMETICS OF COMMON SALT.

By ISAIAH BURROWS, *Surgeon to the Devonport and Stonehouse Public Dispensary and Eye Infirmary, and late Surgeon to the Cholera Hospital, Stonehouse.*

THE perusal of a letter from Mr. Beaman on the treatment of malignant cholera with the chloride of soda, has afforded me infinite satisfaction, as corroborative of the views I have for a long period entertained respecting this highly-important and direful malady, and now establishing the opinion I have expressed to my immediate medical friends, that it was the only remedy the administration of which could really be justified.

The reasons which led me to employ it are the following:—During the period in which I held the office of surgeon to the Cholera Hospital at Stonehouse, in 1832, I experienced many conflicting feelings on witnessing the recovery of numerous cases of cholera without the use of any internal remedy, and others, again, in which the patients died, notwithstanding the use of every plan that had been submitted to the profession, and thus, after passing through this perilous duty in safety, my mind was a perfect chaos, and I could not resolve upon any plan of treatment with satisfaction or confidence. When, then, a few cases appeared in the autumn of last year, I was almost in despair, and being thus led to review the notes I had made of my treatment on its first visit, I found this important fact presenting itself,—that in *every case that recovered* I had employed *common salt*, avowedly, it is true, as an *emetic*. In many instances it did not act in this way, and when retained was much more beneficial to the patient. This circumstance suggested its employment in the three following cases:—

Case 1.—11th Oct. 1833. Mr. A—, ætat. 56, of intemperate habits, having experienced severe vomiting and purging, sent for his medical attendant, who found him extremely frightened and weak, and his voice reduced to a whisper. Emetics were administered, followed by large doses of calomel, in conjunction with other remedies, but without avail. He was also bled. The symptoms advanced with rapidity, and at 9 p. m. the pulse was not to

be felt at the wrist. I was then requested to attend, having found that very prompt treatment had been employed. I related the above circumstance, and we accordingly administered two tablespoonfuls of salt, dissolved in a pint of lukewarm water; this the patient greedily swallowed, and retained the whole for twenty minutes, when he vomited a little, and discharged about a teacupful. A change quite unexpected followed; there was a return of circulation to the wrists, his countenance brightened, the skin and tongue became warm, his voice more audible, and at the end of three-quarters of an hour, only one discharge had taken place, small in quantity and of a dark colour. Reaction was established to the entire satisfaction of his medical man, and a decided improvement was manifest to the friend, and to the patient himself. Calomel and diaphoretics were persevered in during the night. At our visit on the following morning, we found that frequent bilious discharges had taken place from the bowels, and he had passed a little urine. Mercurial action was by this time set up. He continued in a favourable state during the day, and took broth frequently. On visiting him in the evening my astonishment was great on finding that he had suddenly relapsed into as bad a condition as on my first visit, and he died comatose that night.

Case 2.—The same evening on which this patient, whose case I have given above, died, I was requested by a marine, since deceased, to visit his wife, living in George Street, named Trethewy, æt. 22, attended by the assistant-surgeon, under whose care she had been the whole day. He had administered to her effervescing draughts and calomel, and as instantly were they rejected, and from the opinion he had given that she would die, the friends sent for me, regardless of his displeasure. I found her in the condition so often described, and as the malady could not be mistaken, the symptoms need not be related. Having but the day before seen the good effects from the salt and water, I dissolved two tablespoonfuls in a pint of lukewarm water, which I administered to her in two portions. The first dose was immediately rejected. She then drank the other without a moment's delay, and this was retained. Before, however, I gave her any, she refused to take it in consequence of the violent vomiting that was excited whenever she attempted to swallow, but to her husband's joy it afforded a relief quite unexpected. I remained with her one hour, and while there she had no return of the vomiting, and passed only one small evacuation; her countenance changed from the ghastly

hue, which is so characteristic of the disease, to its natural colour. The pulse beat distinctly at the wrist, and the whole surface of the body was warm. I then directed that a small quantity of tea should be given, as the thirst had rather increased than diminished. This sensation, however, was different. The request made for cold water is generally expressed for the purpose of allaying the sensations of heat and oppression at the precordia, but now it was needed merely to moisten the mouth and fauces. Having obtained for her fresh blankets, and applied external heat, she was considerably better. I replenished the jug with salt and water in the same proportions, and desired that a *wineglassful* should be given to her every hour. This was punctually attended to, and, I found, even wished for by the patient oftener, from the relief it afforded. At 6 a.m. the following morning she was visited by her medical attendant, and the delight he felt was expressed, in no measured terms, to the husband and friends. I saw her at 9 a.m., and found complete reaction, almost amounting to fever; bilious discharges and urine had been passed. Not till this visit was I aware that her medical man had not been informed of my attendance, although it was upon a contrary condition alone that I consented to see her; however, I must have the testimony of that gentleman himself, that the case was a most severe one, and that up to the last moment he saw her it had proceeded uncontrolled, notwithstanding his judicious measures. She experienced many fluctuations in consequence of the illness of her husband. She was afterwards bled and other remedies were employed to allay the feverish symptoms, and eventually she recovered.

This case was reported to the commandant of marines, and her husband was not permitted to enter the barracks, but remained with her, and acted as her nurse. Two days after, the poor fellow showed symptoms of the disease. His anxiety for his wife's safety was very great; he had attended her assiduously in a small close room, which, together with the fear of his medical officer's displeasure, altogether increased the symptoms. He was immediately admitted into the Royal Naval Hospital, where he died of malignant cholera.

Case 3.—On the 9th of November I was called upon to visit a young man named Horswill, æt. 19, dissipated in his habits and dirty in person, who had been at the fair in Plymouth on the Wednesday evening previous, and had drunk of different kinds of spirits. The following day he had several loose evacuations, which in the course of the night increased rapidly, at-

tended with violent cramps, and on the 11th he could not move without perfect exhaustion. Notwithstanding the urgency of the symptoms the friends did not send until 2 p.m., when the disease was completely developed, and it was apparent to them that he was suffering from cholera, having seen some of his own friends die of this disease. Here was another case fairly developed, and it gave me a full opportunity of trying the chloride of soda. I need not recapitulate the plan I pursued, as it was precisely similar to that employed in the last case, and attended with like results. At the end of a fortnight he was quite well and walking.

Not considering, however, that these cases alone would be sufficient to confirm its use, and none others coming under my notice, the disease not being general in the town, I have never given them publicity, more particularly as the salt was universally known as a remedy, or rather as an efficient emetic. With regard to the *modus operandi* of the salt, I cannot for a moment believe that the vomiting is its only effect; for if we examine the cases above detailed, it will be found that the solution *was retained* by the stomach, and the more frequently it was repeated, the more apparent and permanent was its *influence*. From Mr. Beaman's own statement it will be seen, that unless it be followed up, and the solution is quickly repeated, a relapse ensues, and thus far we agree, as may be seen by referring to the first case. I think, Sir, that the communication of Mr. B. is one of the most important that has been laid before the profession, and it affords me much pleasure to confirm his statement, and adding my testimony to a free use of this valuable remedy.

Fearing, however, to extend this letter to an undue length, I will merely state my view of the way in which it acts, and the reasons which induced me to prescribe it in the manner mentioned in the last two cases; and first, I did so from the simple and plain fact that common salt being mixed with black blood immediately changes it from black to red. Secondly, because in the analysis of the blood which is found in the veins of persons dying from cholera, an absence of those constituents appears which are necessary to health and to produce secretions; and, thirdly, because in the evacuations which come from the stomach and bowels, a very large proportion of the essential salts of the blood is found, and among them is chloride of soda in a large quantity: consequently, if this be true, I ask, will the effort of vomiting alone impart to the whole mass of blood such a change as that which is seen to take place after the use

of common salt? If vomiting alone has such an influence, we possess equally powerful emetics as this.

The principle of its action, then, I contend to be as follows: On the introduction of a solution of common salt into the stomach, its first and immediate effect is, that of an astringent. It then becomes absorbed, and immediate combination with the blood in the veins of the mesentery follows. This is now rendered fluid, passes on to the liver through the veins, assists in the formation of bile, which is now freely secreted, and passing into the stomach is either thrown off by that viscus, or going into the intestines is there discharged, after passing through the liver. If it be not expended there, it is then conveyed by the vena cava to the right side of the heart, combining with its contents, then passing through the heart and lungs, and thence affecting the circulation, and causing the alteration which is so visible after its employment, until its influence is lost in the general mass. Continue then to supply the system at regular intervals with this fluid, until the secretion of urine and the other functions are established, and the patient is rendered capable of receiving nourishment, which is soon felt, and you can with safety discontinue it.

Whether these ideas be correct or not, such are the effects following the use of this salt (if *any follow at all*), and I contend that it is not unreasonable to employ a remedy, which though it do induce an action, not altogether natural, yet if it be capable of giving to the blood a change nearly allied to the condition of health, gains for us an important advantage, and prepares the system for the reception of remedies to perfect the cure.

Thus, then, whether a trial be given to it in the way now proposed, I hesitate not to affirm, that it is the only remedy that has my confidence, or that I would allow to be employed, if unfortunately attacked with cholera myself. If, however, the facts which Mr. B. has brought forward, or the points which I have advanced, require further proof than the mere trial before any and every member of the profession, I confess my inability to produce conviction. Sophistry or argument alone I shall not have recourse to on the present occasion, but simply keep in view this grand axiom, that Medicine is a science of observation,—one that can only be perfected and raised beyond the suspicion of empiricism, by following the dictates of nature, and the evidence of our senses, discarding all theory unless borne out by reason, pathology, and facts.

Emma-place, Stonehouse,
Sept. 1, 1834.