Ayre (Jos)

To

M. M. Magendie, Serres, Andral, Velpeau,

Cl. Bernard,

Members of the Section of Medicine and Surgery

of the French Academy of Sciences.

Gentlemen,

I have now the honor to submit to your consideration and judgment the method I pursue in the treatment of Asiatic Cholera; and in doing so I must express the satisfaction I have felt at knowing the conditions annexed to the bequest of the late philanthropic testator Monsieur Bréant, namely, that the prize shall be accorded to him who shall have discovered, according to the terms of your programme, "a medicine of incontestable efficacy, which shall cure the Asiatic Cholera in an immense majority of cases, as certainly as Quinine for instance cures the Intermittant Fever."* From the facts and observations now to be given, and from the testimony of numerous correspondents accompanying this discourse, it will be seen, that it is in accordance with these conditions of a specific, that I have employed the medicine presently to be stated, the success of which I have now the honor to report to you.

Before however, entering upon the subject of the treatment, I must premise, that the Asiatic Cholera is divided into three stages, namely, the premonitory diarrhœa, the stage of collapse, and lastly the consecutive fever, and that it is to the two first of these that my treatment applies, and chiefly to the second, or that of collapse, as shewn in the fully developed disease, and characterised by rice coloured fluid dejections from the stomach and bowels, a livid colour, and death-like coldness of the skin, the eyes and cheeks sunken, the voice husky, the secretion of the kidneys suspended, the tongue and breath cold, the pulse often imperceptible at the wrist, great thirst, severe cramps, and a general prostration and

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* "Une médicatione incontestable qui guérisse le choléra asiatique, dems l'immense merjorité des cas, d'ime maniére anssi súre que le quinquina par exemple, guérit la fiévre intermittente."

torpor of the system. The symptoms which precede these I have just named are termed premonitory, and are chiefly those of diarrhœa and require treatment modified in kind and degree from that demanded for the fully developed disease, while the third stage which succeeds the second one is that of fever, and for which a totally different treatment is required; so that when a patient survives the collapse, and has not been relieved from it by a remedy, a feverish state ensues and symptoms of inflamation appear. The premonitory diarrhœa is, therefore, what it expresses, premonitory of an approaching collapse, while the consecutive fever is the result of a neglected or mistreated collapse, which is the true disease, and to which applies the curative treatment I am now about to describe. It is therefore to the treatment of the collapse that all my observations will be directed, and in reference to which I would here observe, that the treatment I employed so late as 1854, and in all the previous outbreaks, which I have witnessed of this disease, is the same identically which I pursued in 1831. It was indeed, the treatment I had resolved to employ in the first case which I should have consigned to my care, and on its occurrence in the town of Sunderland, I visited that place, and by the indulgence of the late Dr. Clanny a case was given me to treat; it was in full collapse, and with the pulse imperceptible at the wrist. This woman was convalescent in forty-eight hours, and, as Dr. Clanny assured me, was the only case which he had seen recover that had fully advanced into collapse. The disorder at Sunderland, where it first appeared in England, was at this time subsiding, and I saw no second case; and as it was just appearing at the neighbouring town of Newcastle, I went thither, although my engagements at home prevented me doing little more at my visit than report the treatment I pursued at Sunderland. In 1832, the disease appeared in Hull, and the first case occurred in a crowded quarter of the town. The patient was attended by the late Dr. Chalmers, and was treated strictly on the plan I had employed at Sunderland, and of which I had informed him. In a few hours after the commencement of the treatment he invited me to accompany him to visit the patient. I found him in the fully developed collapse, with all its most characteristic symptoms, and strictly pursuing the treatment directed for him. I visited him a second time, and found that every care had been given to him by his attendants, and at the end of the day his recovery was secured. On the third day he was able to walk out of doors. Some time after witnessing the success of the treatment in this second case, I was requested to visit a third one by Mr. Sharpe, of whom I shall hereafter have occasion to speak. This patient a young married woman, of intemperate habits, and residing in a dirty and crowded neighbourhood, was in a profound collapse. We visited her together twice, and left Mr. Cooper, assistant to Mr. Sharpe, to remain through the night by her side, and to give her the medicine. At our visit in the morning, we found that the medicine had been taken with great

regularity, and that a considerable abatement of the symptoms had taken place, and the pulse was again perceptible at the wrist after many hours of extinction. From this time the symptoms continued to yield, and on the third day she became fully convalescent, and was walking out a few days afterwards. From this time Mr. Sharpe and his assistant adopted this treatment whose success they had witnessed, and continued to pursue the same uninterruptedly, and to afford me, as far as their engagements permitted, the benefit of visiting with, and occasionally for me, the more than two hundred patients which came under my care during the five months in which the epidemic remained.

Such, then, is the history of the three first cases which I saw of the disease, and in which a perfect trial was given to my treatment. The remedy I have now to speak of, as forming that treatment, was the same in all. It was given alone, or so much so as not to compromise its effect, or to lead to any wrong judgment concerning it; this remedy thus exclusively given, and virtually relied on as the sole remedial agent, was the chloride of mercury, or calomel, given in very small doses and at very brief intervals, namely, one or two grains made up with bread crumbs into very minute pills, and given in a spoonful of water every five or ten minutes, and with no other limit to their exhibition than that prescribed by the duration of the collapse. I adopted this treatment from a notion that the Asiatic disease bore a relation to the Cholera of Europe, as ordinarily met with, and in which I found the calomel succesful, and that a derangement in the functions of the Liver was primarily the morbid condition to be relieved; but whatever might be my views regarding the nature of the disease, or the indication for its cure, I early discovered the important fact, that however long the calomel might be continued, no absorption of the medicine took place so long as the collapse endured; and that it was perfectly safe to persevere with the calomel in small doses until the symptoms of collapse had substantially abated of their intensity, the frequency of their exhibition being lessened as the progress towards convalescence advanced. The three cases which I have cited, in which no consecutive fever ensued, and where in each case a large quantity of calomel was given, present but an example of what occurred in more than two hundred patients which came under my care during the first epidemic, in which I pursued precisely the same treatment in all its details, and with the same success, when no obvious error in conducting the treatment had intervened to prevent it. And here I must invite attention to two points of preeminent importance, the first being, that no sensible operation, or inconvenience of any kind are produced by the calomel when given in the small dose however long the exhibition of it is required; secondly, that when by this treatment the collapse is subdued, no consecutive fever occurs, but the patient becomes at once convalescent, and able to walk out in three or four days from the date of his attack, and after having

been apparently in a moribund state, livid, cold, and pulseless. As soon as further trials of the Calomel in other severe cases of collapse had proved its remedial power, I sent a communication to the *Lancet* Journal, and at the same time to the Central Cholera Board, with the request to the latter to send down a medical officer of the Board, to witness the practice and its results. Failing in this application, and subsequently in one to the municipal body of the town, and being earnestly desirous that my treatment should be known, and its success authenticated, I secured the friendly services of three medical gentlemen to join me in my visits, and take a note of the particular condition of each patient, with the whole course of the treatment, and give their testimony to its results.

Acting upon the notice which I gave in the *Lancet* Journal, of my treatment, and its success, many medical gentlemen adopted it, and reported its success, and as it will be seen in the correspondence, they were glad to note that in a large majority of their cases, as I announced to have happened in mine, under the treatment by calomel, no consecutive fever followed the collapse, and rarely any ptyalism from the use of the medicine. Important, however, as was the result, and widely as the knowledge of it was circulated, but little effect was produced at first to induce my professional brethren to verify these truths by a trial of the treatment; for various theories concerning the nature of the disease were entertained, and such indications of cure were founded on them, as forbade in their opinion the employment of calomel. But the greatest neglect of the treatment was occasioned by those, who finding all other means fail to subdue the collapse, were induced to make a trial of the treatment; but who, in the belief that the calomel would be absorbed, and that to be remedial it must be so, gave it so timidly, and distrustfully, and consequently in a dose so small, and at such wide intervals, as to lead to a failure with certainty. Multiplied examples of the kind are dispersed through the pages of the *Lancet* Journal; and in many instances the practice is represented to have been mine.

At Tooting, where the disease committed such ravages at its first outbreak in England in 1849, the treatment employed was professedly adopted from me, yet only half a grain of calomel was given every half hour; and so late as 1854, there occur reports from two medical gentlemen, one having charge of a dispensary in London, and the other of a cholera hospital in Edinburgh, in which it is stated, that the treatment of Dr. Ayre was adopted; and while one of those under a false impression gave twenty grains every ten minutes for two hours, when the patient died, by the other only a twentieth part of the quantity or one grain, was given every hour. To the errors thus committed in regard to the dose, and the times of its repetition, may be added those which arose from a distrust of a favourable issue produced by the slow appearance of improvement in a given case, and therefore an abandonment of the

treatment in the course of its trial. The reports published of the treatment thus conducted led many to neglect the remedy, happily, however, for its credit, a considerable number of the profession, both of Great Britain and America at length gave me their confidence, and have faithfully fulfilled the conditions necessary to success, and have voluntarily come forward with details of their practice and of the success which attended it, having verified in their own experience what I so early and so confidently promised them, namely, the perfect security from ptyalism, whatever might be the quantity of the calomel given in the stage of collapse, and the passing of the patient into a state of convalescence on the disappearance of the collapse, and the restoration to health without the intervention of fever. Such are the important results of the calomel treatment, which so many with myself have verified when carefully carried out, and which to obviate all misconception on the subject, I may here repeat, and which is known and designated as my treatment. It consists during the stage of collapse in giving *one or two grains of calomel every five or ten minutes,* with one or two drops of laudanum with the first three or four doses of the drug, *and perseveringly continuing the same dose at the same intervals of time until the symptoms of collapse, become virtually subdued.* This plan I have uninterruptedly pursued from the first to the last patient I ever attended in this disease, amounting to a very large number. My reason for giving the calomel in a small dose was that large ones were rejected from the stomach, and I repeated the dose frequently because it *was* small, that the action of the calomel might be constantly maintained in a disease whose duration is to its fatal termination, to be counted by minutes. I gave the minute dose of the opiate to enable the stomach to retain it, not now believed by me to be needed. I abstained scrupulously from the use of any auxiliary treatment. This I did in my early cases that I might not compromise the conclusion to which I desired to arrive as to the remedial power of calomel, and I have uniformly avoided them since, because I found that calomel given in the small dose and frequently repeated was an effectual remedy. I have, besides, avoided stimulants, whether medicinal or alcoholic because I found them not to be necessary, and believed they would act injuriously, when, from the long duration of the collapse, and the delay in commencing the treatment, consecutive fever might be feared: and, lastly, I fixed no other limit to the quantity of calomel which I gave, than that which the duration of the collapse required; having become early convinced, that pending its continuance, no absorption of the calomel takes place into the system; that while it is so given no ptyalism or other inconvenience is induced, *and that no extremity to which a patient may be reduced, will justify our witholding or suspending the use of it.* It might be, and, indeed, it has been objected, that a medicine available in one case of collapse, might fail in another, but experience has shewn, that the difference severally is only in intensity, and the same pathological

condition exists in all, and therefore warranting the belief, which experience has abundantly confirmed, that the same treatment, which avails for one, should, *ceteris paribus* avail for all. The entire success which attended the three first cases, in which the calomel was employed, gave me the warrant for expecting the like success would follow the future trials of it. The simplicity of the treatment, as formed essentially of one medicine afforded security against error, in the judgment to be formed concerning the cause of relief. The absence of any sensible operation of the calomel beyond that of lessening the dejections, an early result from it, has given something of an empirical character to the treatment; and by some it has been denounced as such; but the fact that it cures, is with me the valid reason for its employment. Surrounded, however, as is the subject of its pathology in mystery, I have not been unobservant of the facts which long observation has presented to me, and which has led me to conjecture as to the mode in which the calomel may act in subduing the disease.

The non absorption of the calomel into the circulation must cause its action to be limited to the lining membrane of the bowels and stomach, and it is in the bowels that the disorder begins, and where it appears to have its seat. In all cases of collapse where calomel in small doses is given, and only under that medicine, the first discharges from the bowels, when convalescence takes place are changed to a dark, and sometimes perfectly black colour, resembling the black wash of pharmaceutical surgery, as produced by the admixture of calomel with lime water. The calomel when exhibited in the collapse of the cholera would appear to be reduced to the state of an oxyde when meeting with an alkali in the bowels; and with a view of ascertaining the effect upon the disease by giving lime water with the calomel, a trial has been made of it in two cases of mild collapse, and in several cases of Choleraic diarrhœa, and with the most satisfactory results. Exhibited with this addition, the action of the calomel appears to be exerted earlier on the disease, and more speedily to bring on convalescence. Further experience, however, must be afforded by continued trials before any definite conclusion can be arrived at. Be this however as it may, there remains the fact that calomel in small doses, without any other adjunct is adequate to cure, and however humiliating it may be to our philosophy to confess that nothing more is known of the operation of the calomel than that it cures, yet our knowledge concerning it is not less than that which we have of the action of quinine in the case of intermittant fever. Analogy indeed, justifies us in the conclusion, that as there is a specific for the cure of intermittants, and for some other diseases, so also may there be one for the collapse of Cholera, and however reluctant I have felt to put forward such a claim for calomel, and much less to contend for it, yet on more than one occasion, I have declared, and many others with me, that in the cure of the collapse, with no

sensible operation to render its action intelligible, it exhibits all the marks of a specific, and as such is entitled to be relied on.

Aud now, gentlemen, having brought under your notice the facts and observations relating to the remedial value of calomel, in the treatment of the collapse of Cholera, it remains for me, in the next place to authenticate by evidence the truth of what I have affirmed, relating to my own individual success in the treatment; and I must recall to your recollection, that in the earnest desire to have my treatment witnessed, and its success known and reported, and failing in my application to two public bodies, I engaged three of my professional brethren having the most leisure to visit and report of my patients. To the testimony accorded by these gentlemen, Dr. Henesy, and Messrs. Jenkins and Marston, whose testimony is annexed, is to be added that of Mr. Sharpe, all of whom saw my practice and have severally attested the success of it.* Indeed this gentleman, who was so largely engaged with the disease in his private practice, and so strictly adhered to the conditions of the treatment, has reported his testimony in a letter, also subjoined, in which he especially dwells on the facility with which the treatment is conducted, and that striking and peculiar feature of it, in restoring the patient to convalescence without the intervention of fever.

Of the patients in the developed state of collapse whom I attended in 1832, and whom generally one or more of those gentlemen saw with me, I have now to speak. Their number, as it stood in the inspectors books was 219, but of these 13 were either already dead, or beyond the power of swallowing anything, before I could attend to the call to visit them. The number, therefore, whom I prescribed for was 206, and of these there were 175 who recovered, and 31 who died, or 85 recoveries in every 100 attacked. This number, large as it was, would have been greater, had not the fear at that time about infection made it difficult to procure nurses, and too many of whom neglected their duty. As illustrating the character of the cases, and the treatment of them, I have given the details of ten, (No. 1) having selected them of every age, from the patient of one year to the advanced age of 92. To these cases are added in a tabular form fifty others (No. 2) which were especially seen by one or more of the gentlemen named. Of these 50

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* 1st. "We have witnessed the recovery of many patients from a state of extreme collapse, and even when they had been several hours in that state before the medical treatment began. 2nd. No cases which we have visited and prescribed for, or which we have seen with you, have fallen into collapse when treated in the premonitory stage. 3rd. From our united experience we feel the most unbounded confidence in the use of calomel, as the preventative of collapse, and that it is also the most effectual remedy when the stage has come on."
In confirmation of the opinions here expressed, Mr. Sharpe adds, "Having seen a great deal of the cholera during its prevalence in 1832, and having attended a large number of patients, both with Dr. Ayre and alone, and having pursued the practice adopted by him, I feel no difficulty in asserting that my experience of the efficacy of the treatment is in entire accordance with the opinion above expressed by the Messrs. Jenkins, Henesy, and Marston.

patients, 11 were in a pulseless state when the treatment began; the average quantity of the calomel taken was 128 grains in one or two grain doses; the average duration of the collapse before entire convalescence was established was four days. The entire recovery of only four of these patients was delayed beyond the sixth day, and only one to the tenth. At the side of the table are the names of the gentlemen who saw these fifty patients with me.

Such then, gentlemen, are the facts, and the testimony to verify them, which I have now brought under your notice. They relate only to my own individual experience of the treatment, and my report of its results, and I have, therefore, now to bring before you independent and disinterested evidence on the same subject, communicated in letters to the *Lancet* Journal from medical gentlemen of Great Britain and America. Of these the first in order (No. 3) is one from a medical gentleman of Blackburn (Mr. Morley), in Lancashire, who informs us that in 1834 he had charge of a large dispensary at which he superintended the treatment of 33 cases of this disease, and of them only three were saved. "These three," to quote his own words, "I have no hesitation in saying were saved by Dr. Ayre's plan of treatment, which unfortunately I had not become earlier acquainted with." Subsequently Mr. Morley informs us that a fourth case came under his care; and he describes it as characterised as an example of the severe form of the disease, with a pulse perfectly extinct. The same treatment was employed and the patient was able to leave the town at the end of a week.

In a second letter of a later date, this gentleman relates that he had been called into consultation on a case of great severity, where he had to encounter reluctance on the part of his colleague to the employment of the calomel treatment, and which he only fully overcame by a confident assurance, not unworthy of the occasion, that under its use he would guarantee the recovery of the patient. These gentlemen remained near the bed administering the medicine during the next five consecutive hours, and the recovery of the patient was the result (No. 4).

The next of these letters is from Dr. Kelso (No. 5) of White Oak Springs, Wisconsin, in the United States of America. From this gentleman we learn, to use his own words,—"That in twenty cases of average severity, occurring in his own practice, this drug (calomel) proved a mine of almost unfailing success, and that similar success followed the practice of many of his professional brethren, of Ioway, Illinois, and Wisconsin," and he adds that he takes great pleasure in recording the fact, that more than three fourths of these states, and indeed, of the union have followed with very general success the system pursued by Dr. Ayre."

The letter we next come to is also from America, and dated from Montreal by Dr. Gibb, (No. 6) who also relates, that before proceeding from England to that country, he had read with attention various papers by Dr. Ayre on the treatment of Cholera by calomel, and on the disease breaking out in Montreal, "out of ten cases, to

repeat his own words," which I had tried, the plan suggested by Dr. Ayre, has proved so far successful that I have not lost a single one. In the same letter Dr. Gibb gives an extract from the British American Medical Journal, in which Dr. Von Effland of Quebec, (No 7.) relates that out of fifty cases he had only lost five, and his treatment of all was the same as that employed by Dr. Ayre. Dr. Gibb alludes also to the success of Dr. Hall as given in that Journal, and gives an extract from Dr. Hall's paper, in which he states, that the calomel treatment had proved equally successful in the hands of other medical gentlemen of this city (Montreal), as it had done in his.

After this letter from Dr. Gibb, there follow two other letters from British America, one from Dr. Craigie of Hamilton, West Canada (No. 8), and the other from Dr. Jukes, of St. Catherine's (No. 9). By the former we are told, that from the difficulty of procuring suitable attendants to carry out the treatment fairly, he had lost three cases out of eleven, but expresses the most unbounded confidence in the treatment employed in the stage of collapse, while the latter, without giving any details of cases, informs us that he had very doubtful success with every treatment until he resorted to calomel, when his entire confidence was secured in its remedial power. Returning to England, we hear from Dr. Bullar (No. 10), of Southampton, the successful results of his treatment with calomel, and at the close of his letter, he declares that his observations relate to the malignant cholera of a very fatal type, all occurring in the same infected locality, and treated in the houses where they were attacked, in the state of decided and commencing collapse. They were such, to repeat his own words, "as I should have regarded as very hopeless until I tried Dr. Ayre's treatment, to which, I may add, I had an *a priori* repugnance, and only resorted to it, as the *anceps remedium melius quam nullum.*"

The details of two cases of the usual severity are given by Dr. Pritchett, of Wandsworth-road, London (No 11), which were saved, remarking, as his opinion, "that in this treatment we have at command a safe and simple remedy almost specific, which if generally adopted, would deprive the disease of nearly all its fell terrors."

From the valuable communications of Mr. Jones, also of Wandsworth-road (No. 12), we learn that between the 6th of July, and the 8th of October, 1849, he had 985 cases under his care, and that of these 107 were in a state of intense collapse, in which there were 5 deaths,—687 cases of rice water purging, no deaths,—200 trifling diarrhœa,—no deaths. In the first two cases of intense collapse salines were given, both died. "I continued, he adds, to order calomel in all the succeeding cases, and with the results as stated." By Mr. Spong, of Feversham, Kent (No. 13), the details of a striking case are given, in which the treatment by calomel was successfully employed, and upon which he observes, "that to those who are as yet undetermined as to the treatment of this fatal

malady, I can confidently recommend it, and will boldly affirm, that when tried at the bar of experience, it will not be found wanting."

The particulars in detail are given by Dr. Pickop, of Blackburn (No. 14), of his treatment of a patient in a collapse of extreme severity, in which one hundred and forty grains of calomel were given in the usual small dose, with entire convalescence on the fifth day. In the other cases, he proceeds to observe, he gave single grain doses every five minutes, and in each case the symptoms were arrested "as if by a charm." On another occasion (No. 15), we learn that he had, to adopt his own words, "two other unmistakeable cases, which were treated as the others, and with the same success, one of them was so severe, that the patient was for some time speechless, pulseless, and gasping."

In a letter also to the *Lancet*, from Mr. Allen of London (No. 16), we learn, that on his appointment as district Cholera-surgeon, to the dispensary, Soho, he had 30 cases to treat; with the two first patients he employed sulphuric acid, they both died. That he then resorted to the small dose system of calomel in 28 cases. of these he lost 10, but of these ten, 6 were lost from causes obvious and unavoidable, and rendering success unattainable. He then adds, to give his own words, "I can say with truth, as the result of my own experience, that I consider cholera in its stage of collapse treated with two grain doses of calomel at short intervals, and vigorously carried out, a very manageable, and by no means a fatal disease."

By Dr. Payne of London (No. 17), is afforded a very striking example of the power of calomel in this disease, and at the same time the danger of a relapse by too early suspending its exhibition, or by giving it at wide intervals before the symptoms of the disease have fully abated, and of the facility with which the progress to recovery is resumed, on the resumption of the medicine. Dr. Payne then proceeds to add, that he had steadily pursued the treatment, and had lost but one patient through the whole epidemic, although he had very many cases under his care in all stages of the complaint.

The report we next come to is from two medical gentlemen, Knowles Wilson, and Wright, of Sheffield (No. 18); it is dated 1833, and sent to the *Lancet*. The number of their cases was 103, of which 54 were in the fully developed stage of collapse, 20 with collapse impending, and 21 with diarrhœa. The deaths were 23, but of these they enumerate various causes, apart from the treatment, which precluded 13 of the number from any chance of recovery. They close their remarks with repeating, "that the treatment of cholera by calomel will ultimately be the one most generally resorted to."

In a letter to the *Lancet* it is stated by Dr. Carter now of Brighton, and late of New Shoreham (No. 19), that he had been

called altogether to 58 cases of collapse, or which would have been such but for the calomel treatment. Of these he states, to quote his words, "I had lost three before I began with the calomel treatment, and have had only two deaths since I adopted it," adding "that he doubted whether any one could adduce more convincing proofs than himself of the wonderful effects of the calomel treatment."

During the years 1832, 1849, and 1853, Mr. Merry of Hemel Hempstead (No. 20), relates that he had a great many cases of the Asiatic cholera to treat, and had the opportunity of trying every plan suggested, and he states, to cite his own words, "from my own observation of facts, I feel satisfied that the only chance of success in the true Asiatic cholera is by the calomel treatment. By the exhibition of this drug in a small dose every ten minutes, I have had the satisfaction to see in many cases which appeared perfectly hopeless, such an improvement as I should have thought impossible."

Dr. Shearman of Rotherham (No. 21), gives the details of the only three cases in which he employed the calomel "They were all in extreme collapse, and they all recovered under the calomel treatment."

To the account here cited we may now give the one afforded by Dr. Taylor of Maghull, near Liverpool (No. 22), in which is related the extraordinary but not unprecedented fact that a woman had taken in two grain doses, eleven hundred and sixty grains of calomel, and a youth only sixteen years of age, nine hundred grains without any signs of salivation. Both these patients recovered perfectly. And here I would remark, that children under the calomel sometimes come round in a few hours, and where a long perseverance in the treatment is required, they bear the medicine, and even in as large a dose as adults. Out of 159 cases reported by that gentleman, there were 126 recoveries and 21 deaths, about 85 per cent. This includes all ages, and from the slight to the extreme collapse.

"I had made up my mind, writes Dr. Stanley, of Whitehaven (No. 23), in his letter to the *Lancet*, to give the mercurial plan a trial, I selected three cases in the hospital, admitted in the stage of collapse, with the pulse gone, and with the other characteristic symptoms. The same treatment was pursued with all. A grain and a half of calomel every fifteen minutes. The first patient was discharged well in four days, after having taken two hundred and nineteen grains of calomel without any signs of ptyalism, or any unpleasant symptoms produced; the other two patients were treated in the same way, and with the same results."

In a report sent in to the Board of Health in 1832, from the cholera hospital Nutford-place, under the care of Dr. Holroyd (No. 24), it is averred that the disease had yielded to the treatment recommended by Dr. Ayre, and it is further stated, that the house-

surgeon, nurse, and porter became successively attacked by the disease, and were all restored by the same treatment.

In a return made by the parish hospital of St. Pancras (No. 25), it is related that in seven cases the saline treatment was tried, but not in one did it produce recovery, calomel and opium however, afterwards restoring the patients in some instances. One of the patients took three hundred grains of calomel without any ptyalism.

The gentleman whose testimony I must next cite is that of Mr. Hay (No. 26), who was engaged in the treatment of the disease in all the several epidemics in Hull, and witnessed much of my practice in it. This gentleman informs us in two communications on the subject, that the calomel has been with him most successful, and that he has a record of many cases, in which perfect recovery took place from a pulseless state of collapse; and he hardly ever knew collapse to be followed by consecutive fever under the calomel treatment. In the brief outbreak of the disease in Hull in 1854, Mr. Hay relates, that he had the first two cases to treat, which he invited me to witness. Both were in deep collapse, and were both walking out, one on the fourth, and the other on the sixth day from the date of their first attack, one took ninety, and the other one hundred and forty grains. To this communication from Mr. Hay, I subjoin a letter from Mr. Sharpe (No. 27), with whom I attended so early, and so often in the year 1832, and whose experience in the use and success of the treatment was the same as my own, sharing with me fully in the confidence which he reposes in it.

By Dr. Wraith of Blackburn (No. 28), we are informed, that in 1849, he had first tried a treatment in which calomel was not employed, and it failed, when he had recourse to the calomel, and out of eight or nine cases of collapse seven were recovered. In 1854 he had only three cases, all of them were in extreme collapse, and one of them pulseless. They all recovered in a few days, and had no consecutive fever. To this gentleman's letter is appended a declaration signed by four medical gentlemen of Blackburn and its neighbourhood, in which it is affirmed, that they have no confidence in any plan of treatment which they have tried excepting in that of small doses of calomel, and that by this plan they had succeeded in curing the worst forms of cholera.

By Mr. Gathergood of St. John's, Norfolk (No. 29), we have presented in a tabular form the treatment pursued in 63 cases, and of which 24 were of premonitary diarrhœa, 21 of incipient collapse, and 18 of the fully developed disease. Of these 55 recovered, and 8 were fatal, though of the patients who died, one had been drunk for several days before his attack, and another was of dissipated habits. Both went into consecutive fever. The average quantity of calomel taken in collapse in two grain doses was about ninety grains.

Mr. Manby of East Rudham, also of Norfolk (No. 30), reports that in 1832, calomel was their sheet anchor. In the treatment of 109 patients in a more or less developed collapse, the deaths were 13. In the epidemic of 1849, the treatment and result, were about the same.

In a letter from Mr. Taylor of Leigh-street, London (No. 31), I am thanked for what he is pleased to call my teaching him in 1833, the treatment of cholera. In one recovered case he gave the calomel to the extent of seven hundred and thirty-four grains without inducing salivation.

By another gentleman Dr. Thomas of Sheffield (No. 32), we are told that the treatment by calomel had been very successful in the 22 cases which had come under his care. To one patient he gave two hundred and seventy-six grains of calomel, and to another three hundred and seventy-six grains in two grain doses, both these patients recovered.

From Mr. J. Taylor (No. 33), we learn, that such was his success in the treatment by calomel, that it occasioned some astonishment in the neighbourhood as he considered two of the patients whom he saved to have been in *articulo mortis* at the time of the first visit.

Dr. Serle (No. 34) late of the East India Company avers, that from the experience he has had in the treatment, if any single medicine is entitled to be regarded as a specific in the cure of a disease, that appelation is due to calomel. In a long communication from Dr. Niddrie (No. 35), we are informed of the various means he employed with the patients whom he first attended, and their entire failure, until he had recourse to the calomel treatment which he followed with the most exact attention to the conditions necessary to render it successful. By Dr. Oke (Nos. 36, 37), of Southampton, and Mr. Nankivel, while attesting their success with calomel, we are informed of the particular care they respectively employed to secure the due administration of the medicine. By the former gentleman a careful selection and supervision of the nurses were attended to, and by the latter the young medical assistants were enjoined themselves to administer the medicine.

And now, gentlemen, having engaged your attention so long in citing individually the evidence of various medical gentlemen, I must here content myself with referring you to the testimony as given in various communications comprised in the following pages. I might here cite the evidence from documents supplied to me by Drs. Sutherland, Maitland and Marshall, and Messrs. O'Shea, Norris, Cox, Hardcastle, Mundy and Glenton (Nos. 38 to 46 inclusive). From all these gentlemen the evidence for the calomel will be found to be in general accordance with that already given, and by some of them even yet more emphatically expressed. Leaving therefore these to be consulted, I shall now

adduce the proof of the high value of the calomel treatment when rightly employed, and the want of success when otherwise; and perhaps of all the testimony which has been afforded me upon the efficacy of calomel in this malady, when it is administered according to the required conditions, and of its inutility when they are neglected, there is none more striking than that which has been sent me, and taken from a report made from the Western Dispensary under the care of Dr. Mc Intyre (No. 47), who gave me permission to publish it. The treatment of the 12 cases was believed to be on the system of small doses of calomel, but he draws our attention to the fact that there were only 7 patients with whom this treatment was rightly pursued; and that these recovered, whilst to the 5 others the calomel was administered at such wide intervals, and in such small doses, and to so small an amount, that the remedy had not the power which was looked for from it, and these 5 died. None of the patients who were cured were attacked with consecutive fever, and one of them took two hundred and ten grains, whilst the greatest quantity taken by those who died was only forty-eight grains, whilst others took only thirty grains in eighteen hours. In the fatal cases various stimulants were employed, whilst the other patients were treated and cured by calomel alone, rightly administered.

I will now close the subject of testimony, and in conclusion, I beg to direct your attention to the report rendered by seventeen medical gentlemen (No. 48), on the treatment and its successful results, with the calomel, on 504 patients, who were more or less in the developed stage of collapse, there were 422 recoveries, and 85 deaths, or 84 recovered in every 100 attacked. Throughout all the observations made respectively by those gentlemen on the cases, there are exculpatory reasons given why some of them proved fatal, as if each instance of failure few as there were, were exceptional to the rule, which was one of success, and as if bound by an obligation to explain to themselves, not how they merely recovered so many, but why they had not recovered all.

And now, gentlemen,having trespassed so long upon your attention, I shall conclude with a brief summary recapitulation of the leading principles of the treatment by calomel, and the facts which I have cited in support of them.

We begin by repeating :—

1st. That the collapse of the Asiatic cholera is unique in its character, and uniform in its symptoms, the several cases of it differing from each other only in their degree of intensity; that the premonitary diarrhœa is usually, but not essentially preceding it; and that the consecutive fever is a result of the disease, and not the disease itself, and is obviated by the calomel when administered in the stage of collapse, and with attention to the conditions demanded for success.

2nd. That these conditions may be emphatically affirmed to consist in the giving of two grains of calomel every ten or every five minutes according to the urgency of the symptoms, and in not hazarding any diminution of the dose, or of the frequency of its repetition until the form of the disease has become materially subdued; and further, that excepting an allowance of cold water *ad libitum*, all auxiliary treatment must be withheld, and especially that of stimulants, as tending to compromise the action of the calomel, and to favour the occurrence of fever.

3rd. That during the progress of its developement, and pending the continuance of the stage of collapse, the power of the absorbents is suspended,—a truth unhappily too long discredited,—and thus the calomel produces no mercurial effect upon the system, but has its action probably wholly limited to the lining surface of the stomach and bowels.

4th. That the calomel when taken in a large dose becomes an irritant, and is either at once rejected from the stomach, or increases the fluid dejections from the bowels, but when given in a small dose it is readily retained, and its earliest effect is to lessen the number of fluid dejections, and gradually to bring the patient from a state apparently moribund, to one of entire convalescence, and without the intervention of fever.

5th. That the treatment by calomel avails for every age, and little difference is required in the dose, or in the times of its repetition, whether for infants or adults, since the calomel by not being absorbed inflicts no injury on the system, and is strictly local in its action, and therefore, the calomel is required to be, and may be safely continued so long as the symptoms of collapse remain.

6th. That under the calomel treatment, and under no other, the alvine dejections become changed from the rice colour to that of more or less blackness, and is the precursor or accompaniment of convalescence; and resembles so much the black wash as extemporaneously made by mixing calomel with lime water, as to suggest the conjecture that this blackness of the first discharges is attributable to the calomel being reduced to the oxyd state in its passage through the bowels, and that it thus becomes so remedial.

7th and lastly, that in the reports sent by various correspondents of Great Britain and America, there is a coincidence of agreement in their experience fully confirmatory of mine relating to the treatment and results, in all the material points. By them all are noticed more or less, particularly the large quantity of calomel sometimes required—the entire impunity attending its use—and the necessity of its being perseveringly taken, with the sudden transition from disease to convalescence without the intervention of fever; and that also, there is such a certainty of recovery from the calomel treatment when rightly conducted, that despite the causes which act so much among the poor to prevent it, there is an average

recovery of eighty four or eighty five in every hundred falling into collapse, and as the treatment consists in the use of one remedy, we are warranted to affirm that this remedy is in the fullest sense of the term a specific.

I have the honor to subscribe myself,

Gentlemen,

Your obedt. Servant,

JOSEPH AYRE,

HULL, JUNE 15th, 1856.