

## **Statistics of cholera / by Edward Balfour.**

### **Contributors**

Balfour, Edward, 1813-1889.  
Royal College of Surgeons of England

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London NW1 2BE UK  
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PRACTICAL REMARKS  
ON THE  
TREATMENT  
OF  
MALIGNANT CHOLERA

DERIVED FROM THE AUTHOR'S EXPERIENCE

IN THE

EPIDEMICS OF 1832, 1834, AND 1837;

WITH

AN APPENDIX.

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BY

CHARLES YELVERTON HAINES, M. D. &c. &c.

MEDICAL ATTENDANT TO THE BLACK ROCK DISPENSARY.


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CORK :

GEORGE RIDINGS, 34, PATRICK STREET.

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1838.



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TO THE  
MEMBERS OF THE BOARD OF HEALTH

FOR THE  
CITY OF CORK, IN THE YEAR 1832,

AND  
TO THE SUBSCRIBERS  
TO THE BLACK ROCK DISPENSARY,

IN ACKNOWLEDGMENT OF THE CONFIDENCE REPOSED IN HIM, AND  
OF THE KIND ATTENTION WHICH HE UNIFORMLY EXPERIENCED  
WHILE IN THE DISCHARGE OF HIS OFFICIAL DUTIES  
UNDER THEIR AUTHORITY,

THE FOLLOWING PAGES  
ARE MOST RESPECTFULLY DEDICATED

BY  
THE AUTHOR.

For the  
Royal College of Surgeons  
in London

from the  
Author -

TREATMENT  
OF  
MALIGNANT CHOLERA.

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MY intention in the following pages being to consider the TREATMENT of CHOLERA, with a view to its simplification, and greater steadiness of character,—I shall not unnecessarily enter on its history, or description, which have been already amply detailed by numerous writers; neither shall I attempt to discuss the various questions to which it has given rise; such as its mode of propagation, contagious properties, true position in nosological arrangement, and many others; although I may be induced incidentally to offer a passing observation connected with some of those questions.

It may be as well to mention, here, the opportunities which fell to my lot of witnessing this disease. I was at the first outbreak of the epidemic, in 1832, officially placed in one of the most infected parishes (St. Peter's) of this City, as Inspector, in which capacity in the course of two months several hundred cases came under my observation



hesitatingly, feeling that it was necessary still further to test the various plans on a number of cases; and to endeavour to arrive at views and a general practice more in obedience—than much that still prevailed—to the natural processes of reparation carried on in our system: and that Cholera is capable, in its very worst form, of being effectually met by, and is amenable to the truest and simplest principles of medicine, is now my decided, and I think well grounded, opinion.

It is right that I should here be distinctly understood, as to the form or stage of the disease, to which my remarks throughout these pages particularly apply. It is not my intention to dwell on doubtful or merely threatening cases, as, though they are in themselves of importance, their management does not require much comment; and should they take on the appearances of the marked disease so as to be recognised early, the measures about to be recommended as applicable to the worst form will be equally so to them. My remarks have reference to the most decided cases of *Cholera with Collapse*, by which term I mean not merely the sunken appearance of the countenance with great prostration; but also the total suspension of pulsation in the extremities, the pallid or purple colour of the skin, coldness of the tongue and general surface; accompanied with the peculiar weak whining voice, and often the upturned and exposed white of the eye. This was the form in which I met, almost invariably, every case to which I was called in the epidemic of 1834, as also in many of those of the present season. Previous to, and especially while the epidemic of 1834 lasted, I attended numerous cases of common Cholera and Diarrhœa, some of the latter having discharges perfectly white and exactly resembling chalk and water; many of those would no doubt, but for timely

precautions, have glided into the worst form with collapse, occurring, as numbers of them did, in the very houses and families that Cholera was at the time prevailing in. I have never taken those into my estimate of Cholera cases, though probably many of them should be so accounted, and after all might be considered as having only differed in degree of severity and danger. Such cases were usually amenable to ordinary treatment as calomel and opium; a little rhubarb-wine and laudanum made into a warm draught with a few drops of savolatile, essence of peppermint and syrup of ginger, or the chalk mixture with astringents; but in some where the fluid discharges though of bilious character were very abundant and threatening, I found it necessary to adopt, to a certain extent, the same line of treatment which I used in the malignant disease.

Early in the epidemic of 1834, indeed in the fourth and fifth cases which occurred in the Black Rock district, I was induced from some observations then made, to abstain entirely from giving opium by the mouth; a circumstance to which I attribute much of my after success, and have ever since confined myself solely to its use in the form of enema.

My first expedient on visiting a case of Cholera with serous evacuations, or even should they have temporarily ceased, as is occasionally the case in an advanced period of collapse, is to have an enema composed of four or six ounces of prepared starch with one drachm of laudanum if the patient is an adult, administered as soon as possible, desiring that every effort should be made to have it retained, should it however be soon passed off it must be immediately repeated; one enema is sometimes sufficient, but generally speaking it is necessary to have recourse to their administration two or three times, or oftener if there

should be recurring diarrhoea. This remedy usually greatly lessens the serous discharges, very often entirely arrests the involuntary motions from the bowels, and helps to allay the pain and cramps.

The next and very important consideration is, what are we to give to revive the system from collapse and bring about reaction? And here it was that I think the greatest mistakes were committed, on the first visitation of this disease; seeing the patients so rapidly sunk into extreme collapse with corpselike coldness of the entire body, and so frequently ending, in a few hours, in death; the most powerful stimulants were prescribed, such as brandy, whiskey, wine, turpentine, ammonia, phosphorus, &c. without sufficient discrimination as to the quantity which the patient was capable of bearing, or the effects which should fairly be expected from such active proceedings; which instead of producing the desired results, often only rapidly consumed the little spark of vitality which still remained. Added to these internal means of bringing about reaction was the injurious general application of heat, whether moist or dry, by hot tins, stupes, air and steam baths, &c. while conjoined with the foregoing, were the powerful local irritants, such as turpentine frictions, pungent sinapisms, and acrid blisters. Reflection on the natural powers of the system in bringing about reaction, and reasoning from the partially analogous case (as relates to some of the external characters of the disease) of the condition of frostbitten parts, and the means used for the restoration of the latter, should have pointed out a more cautious but steady administration of milder stimulants together with a very moderate application of external heat.

Circumstances which at an early period came to my knowledge, together with observation and reflection on the

foregoing matters, induced me very soon to discard much of the stimulating plan of treatment, and in the epidemic of 1834 I never once recurred to the use of brandy or the other strong spirituous liquors;\* while I confined the application of heat to a hot tin or brick to the feet and legs, allowed moderate friction with the hands to the cramped parts, being careful at same time to cause as little disturbance as possible to the patient, and applied a middle sized ordinary blister to the pit of the stomach.

As an internal stimulant I have found the compound Spirit of Ammonia by far the best; it is a mild but sufficiently powerful diffusible stimulant, while it is entirely void of the very objectionable narcotic properties of the spirituous remedies: I am in the habit of prescribing it in the proportion of about one ounce to twelve ounces of water, medicated to prevent its being mistaken for other drinks with one drachm of compound spirit of lavender, giving this mixture at first in doses of half a wine-glass-ful every quarter of an hour and afterwards at longer intervals, its use being of course diminished as re-action becomes established. I have generally found that from six drachms to two or three ounces of this remedy were sufficient in the first twenty-four hours. In addition to this I have usually allowed within the same period of time from two to four ounces of wine or a little more, combined in the ratio of a dessert spoonful to two or three table spoonfuls of arrow root and given every two or three hours. Chicken broth should be prepared as soon as

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\* I am aware however that whiskey was often given before I was called in, and, *pro tanto*, it always induced me to give a more unfavourable opinion as to the result; whiskey was also given unknown to me in many cases while under my treatment, sometimes I discovered this at the time, but often could not ascertain the fact for some days. I have almost invariably found that mischief followed this private exhibition of spirits.

possible and given occasionally in small proportion; the entire quantity of broth which can be made from one or two good fowl may be given in the course of the first day. At same time the free use of diluent drinks, as water, whey, weak tea, almond milk, ammoniated soda water, &c. should be advised; in some cases when greatly desired I have allowed a little fresh beer or porter which was found refreshing and did no harm.

Calomel has been given by me in small doses, generally beginning for the first, with two grains combined with two of aromatic powder, and afterwards repeating it in the proportion of one grain every four or six hours. When first I gave up the use of opium by the mouth, I gave the calomel in about double this quantity, but seeing no immediate good effect from it and fearing its action on the bowels I soon reduced it to the small doses above mentioned. The beneficial operation to be expected from this mode of giving calomel is its promotion of the biliary and other secretions. I do not find it apt to purge in this proportion, when the enema is properly attended to, and in administering it in collapse do not give it with any special view to its assisting the patient out of that stage, or from supposing it to possess any specific attribute against this disease, but solely with the object above mentioned.

I believe the removal of the Collapse to be effected by the restraining effects of the enema, the mild stimulants, light nutriment, avoidance of all over excitement or disturbance, and abundance of diluents which appear to me to supply to the absorbents a medium for again quickly restoring the immense quantity of serum which has already been lost from the whole quantity of blood, and without a due supply of which we can scarcely expect that a free circulation will be re-established. I am even of opinion

that when the astringent enemata produce their desired effect, absorption of a quantity of serum already thrown out into the intestines takes place, and that this is in itself a powerful adjuvant to the other means herein recommended.

The vomiting which occurs in this disease I usually allowed to take its course, not adopting any particular remedy to check it; the enema however exerts a considerable influence in diminishing its frequency, I believe that it is sometimes a desirable symptom and one which we need not be over anxious to have entirely cease until the patient's convalescence is pretty certain: under the plan of giving drinks freely, and the ammonia, as described, I generally find that some vomiting continues all through the attack, at longer or shorter intervals, and I would urge the frequent use of large draughts of water, even though they should be occasionally rejected. I recollect one case in particular where I was much assisted in overcoming the strong prejudice which prevails among the poor against the use of water, by the patient himself, a boy of fifteen years of age who was in complete collapse; when I was urging his friends to let him have it in plenty, he would say "there now, won't you give it to me," and on being offered only half a cup full he would, though actually dying with thirst, indignantly push it from him and heave himself away in the bed; on those occasions I have filled a pint basin which he seized with avidity and drank the entire of at once, much of which he would shortly after throw up; thus we went on from time to time, but carefully interposing the other remedies, as chicken broth, arrow root with wine, or the ammonia mixture, which not filling his stomach so rapidly saved him from a too frequent recurrence of the vomiting. His bowels were

of course kept perfectly restrained all this time by the enema. This boy recovered without a single unfavourable after consequence. Of nothing am I better convinced than the necessity of giving an abundance of diluent drinks, and can state that only on one or two occasions since I adopted the general mode of treatment here advocated have I found it necessary to limit the vomiting, on those occasions the run on the bowels being restrained by the enema, I found life apparently flickering away under a teasing vomiting which recurred almost incessantly, while drinks were sought and given freely; on having checked for a short time however their too free administration this very incessant vomiting subsided, and recurring afterwards only at distant intervals, symptoms of improvement soon became visible. I do not think while the enema is retained and plenty of diluents taken, that fresh quantities of serum often continue to be secreted from the mucous surfaces, but an occasional vomiting relieves the stomach when overloaded with drinks and nutriment, and has a further action probably in promoting the secretion or expulsion of bile, the appearance of which in the vomited matters is often among the first symptoms of improvement from the stage of collapse.

The treatment which I followed with respect to children was precisely the same as that for adults, merely proportioning the remedies to the different ages of my patients, and the results were certainly on the whole most satisfactory, as I believe few or no children will be found to sink under this disease if the treatment here recommended is steadily and judiciously followed out. I have usually given half a drachm of laudanum in the first injection to a child of four or five years of age, and when necessary to repeat it have given nearly the same proportion, and never found any bad effects on their system from this quantity.

In the course of some hours—the length of time however being very variable—under this course of treatment a general feeling of genial warmth will begin to diffuse itself over the entire surface, the pulse will begin to be faintly distinguishable in some of the extremities, often at the bend of the arm some time before it is capable of being felt at the wrist, the circulation gradually rises and now it will be necessary to proceed very cautiously with the stimulants, gradually lessening their quantity and the frequency of their repetition, and on decided reaction setting in withdrawing the wine altogether for some time. I have seen the worst effects produced in two or three cases by an extra quantity of wine, to what I allowed being, privately given at this period of the disease, inducing shortly after head symptoms with bad, indeed fatal, consecutive fever, where shortly before every thing promised a rapid and safe convalescence.

If the stimulants have been cautiously given during the cold stage and as gradually but steadily withdrawn on the appearance of reaction, a speedy convalescence with little or no fever may in general be looked for, and this very frequent happy termination to a great many of the worst cases of collapse makes me doubt very much the propriety of that arrangement which would locate this disease in nosological systems as an essential fever.

But while this favourable result took place in such a great number of bad cases, others which were likely to have gone on as prosperously were lost,—as was in several clearly traced,—in consequence of ignorant mismanagement, (either before or after my prescribing,) on the part of friends and attendants or by the busy and mischievous intermeddling of neighbours and visitors ; to vexatious and disheartening circumstances of this kind a country practice



in the cabins of the poor with the cases scattered over a large area at considerable distances is unavoidably exposed.

Together with the commencement of reaction, or in a few hours after, a straining or vomiting of some bilious matter often comes on and is a very favourable appearance, should it prove frequent or acrid, draughts of almond milk, ammoniated soda water, or alkaline soda powders will be found most agreeable. In the course of ten, twelve, or more hours, the urinary secretion makes its appearance. Up to this period and even later the patient is not always free from the chance of another run on the bowels which if neglected will speedily bring on an equally decided collapse, and any aperient medicine even the mildest given too soon may have the same effect; but even those second attacks of which I have witnessed some very marked, and which I could scarcely trace to any assignable cause except once or twice to aperient medicine or a slight irregularity in diet, and in one or two either to their not receiving the necessary attention from their nurses, in consequence of others being taken ill in the same family, or to a sudden depressing mental impression,—which last is the most unfavourable cause of relapse,—were in many instances as amenable to the same treatment as hitherto pursued, and again I have had the satisfaction of seeing them do well. In some patients at the period of convalescence the bowels will continue confined from two to five days, and I have often acted on such by merely directing a slight change of diet to a little gruel instead of arrow root, or if necessary by a little rhubarb and blue pill, aided by a common enema or a small dose of castor oil. In others dark green clayey motions were passed on the second or third day, gradually changing to a natural appearance; or fluid bilious motions take place sometimes becoming so

abundant as to require much caution, perhaps a little rhubarb-wine with a few drops of laudanum, or the enema of starch and laudanum. For a couple of days after reaction, if moderate, has commenced, the ammonia mixture may be given three or four times a day, but particularly in the last mentioned cases where there are rather too abundant fluid bilious evacuations. Chicken broth, beef tea, and arrow root, with or without wine, will of course be given, according to circumstances.

In a very few cases, disease in the abdomen of an inflammatory or subacute character came under my observation, and two or three proved fatal with symptoms of dysentery, or disorganizing disease of the mucous membrane attended with dark grumous discharges from the stomach and bowels; in these cases however I could not feel satisfied that nothing but my prescriptions had been followed or that ordinary attention had been given; in some indeed I know there had been much neglect and mismanagement. A bad case of those grumous discharges, after Cholera, came under my charge in an almost moribund state, in 1832, and finally did well.

Twice, where there had been no consecutive fever or such amount of reaction as deserved that name, Delirium Tremens of unequivocal character developed itself on the third and fifth days of convalescence, in persons who had been disposed to tipple previously; one of these recovered; the other stole on insidiously in a man of whose previous habits I was led to have quite a different impression, which prevented as early a recognition of the circumstance, and from whom I was just at the time unfortunately withdrawing the moderate quantity of wine which I had been giving, my suspicions however were awakened at my morning visit when I made a slight return to a more

generous allowance ; on seeing him in the evening his case was most decidedly marked, and I immediately commenced the usual treatment adopted in that complaint, it however proved too late, as he sunk in the course of the same night.

I shall now state my views with respect to many of the remedies which have been in use at various times ;—first with regard to opium, I think that it was under some circumstances often injurious in its immediate action on the stomach by lessening its sensibility and arresting the vomiting for too long a time, it may also have assisted in locking up the various already suppressed secretions ; while, independent of these objections, I believe it to have been frequently very mischievous not only in the cold stage by its narcotic operation on the sensorium, but also when reaction did take place by helping to excite the consecutive fever, which then too frequently occurred, and proved of such dangerous character. That few or none of those objections lie to its use in the form of enema alone, in the proportion mentioned, will I expect be admitted when put to the test of experience without any combination of narcotics by the mouth ; while in this form it constantly effects all the good which can be looked for, namely, arresting the serous discharges, which it formerly was often prevented from doing by the too free use of calomel.

To brandy and other spirituous liquors the objections are equally strong ; they appear to produce a directly injurious effect in every stage of the disease, except given in very small quantity and well diluted. In the stage of collapse where the patient with a cold surface complains of burning heat within, comparing it sometimes to what he would expect from swallowing melted lead, I cannot but conceive their effects in anything of a concentrated

form as most pernicious, irritating an internal surface already in a state of peculiar derangement, and from much observation, I suspect, tending rather to keep up the serous discharges from the bowels; besides producing these effects they act as too powerful stimulants on the general nervous system, exhausting rapidly instead of supporting the already nearly extinguished vital spark; and further, even where the powers of life prove sufficient to rally from the stage of collapse under their administration, they cause then, by the struggle which they have created in the system, a greater reaction than under other circumstances would occur, and which generally proceeds into that serious consecutive fever, attended with subacute inflammatory action in the meninges of the brain, ending so often in coma and death.

Turpentine does not appear to me so open to the strong objections which I have made to the preceding remedies, I believe it to be occasionally a useful stimulant, and that it probably acts beneficially, when not given in too large quantity, by its peculiar effects on the mucous surfaces; some of my earliest successful cases partly owed their favourable results to this medicine, but I have not continued its use since 1832, with one or two exceptions, and then, combined with the other means in which I have been led to place much more confidence.

I have myself tried, and seen others do so, in the epidemic of 1832, the administration of calomel in large doses, but not having obtained any satisfactory results, I then gave up that practice; gradually reducing the quantity which I used, until I brought it to the small proportion herein advised, and which I merely consider as a mild adjuvant in promoting secretion.

Some of the other internal medicines which have been

tried, may have been useful by their slightly stimulating or other properties, but still more perhaps, by having so far interfered with, or prevented, the use of injurious remedies, and from being generally combined with a freer use of diluents; among such means I would class camphor julep, the mild saline combinations, &c.

The internal administration of acetate of lead rests on high authority; I have never myself seen it used internally in this complaint,\* its recommendation not having been published until after the epidemic of 1834 had ceased with me; and in the present epidemic I was more anxious to test, in the earlier cases, my own former very successful line of procedure, and have done so with great satisfaction; the acetate however deserves a fair trial, and should cases again occur in my practice I will take an opportunity of testing its merits, in doing which, care must be taken to give due admission to the benefits resulting from the other means, with which its use may be conjoined. The rationale of its action would lead me to expect benefit from it, and I shall be led to try it with some confidence as recommended by Doctors Graves and Cranfield, having their authority for the safety which attended its employment.

In passing to the other means which have been adopted I shall first notice bleeding, a remedy of which I have not had very much personal experience, having only bled two patients, both of whom died,—I have seen it used with more varied results,—I know that it was held in high estimation by several, but I do not feel it to be a remedy necessary in the early stages, and in that of collapse I for one cannot bring myself to its adoption.

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\* This Pamphlet was written, and ready for the Press, before the case which is given in the Appendix had occurred, and which I thought it better to publish separately, with any remarks it might call forth, rather than make any alteration in the original text, which contains as I believe the correct principle of cure.

Transfusion, is another of those means relied much on by some, and which has received commendation from very competent authority, but I attribute the favourable results which occurred in some of those cases, as well as in those who were bled, to the other remedial means adopted; it is a remedy not free from danger, and where I have seen it tried, it was unsuccessful.

I have already partially remarked on the injury caused by a too great and general application of heat, it exhausts the remaining feeble powers, and too frequently tends to bring out that clammy and colliquative sweat which is such an unfavourable symptom.

All violent external irritants are bad, they harrass the patient by their excessive action, and have been occasionally followed by gangrene. I have found the simple application of a common blister to the pit of the stomach produce all the good which can be expected, and without being followed at any time by injurious consequences, it serves as a moderate stimulant in arousing the system from collapse, and by its counter irritant effects, comes in at the period of convalescence, as a valuable auxiliary in preventing or diminishing the morbid actions which occasionally take place in internal organs after the irritation and great congestion to which they were exposed.

Enemata and suppositories of different kinds have been at all times used, and so far as they were composed of opiates, as starch and laudanum, decoctions of the astringent woods and such like, with laudanum, or suppositories of opium and soap, were useful; but the brandy, and tartar emetic injections, I consider as worse than useless.

I cannot now furnish any accurate statements as to the proportion of cases in my own charge in 1832; but in the year 1834, in the Black Rock district, containing a popula-

tion of between five and six thousand persons, from the middle of August to the middle of October, exactly two months, there occurred,—independant of five cases taken to the Cork fever hospital,—eighty one cases of the worst form of the disease, four of them being in my private practice; these were all attended by me at their respective residences, several of which were two or three miles apart; and, in addition to their many other great deprivations, were unprovided with nursetenders except such as their own families or neighbours supplied. Of the entire number, only about ten, or twelve, had not fallen into utter collapse before I was called in.

Forty patients, nearly all of whom had been in complete collapse without pulse, for various lengths of time, varying from about ten to seventy two hours, recovered perfectly, under the treatment herein recommended.

Of the deaths ten were in persons whose ages ranged from above fifty to eighty years, one of whom rallied from collapse but relapsed again on the following day into that stage; the three first cases which occurred before I had adopted the mode of treatment described in this pamphlet, died, they were treated with calomel and opium; one of them, however, was nearly dead when I was sent for, having lived only twelve hours from his being taken ill, and dying in three hours after my first visit. Thirteen deaths took place after between nine and fifteen hours of illness; some of the old persons above mentioned being of this number; and consequently were so rapid as to allow scarcely any time for treatment, especially as they were not reported to me until within a short time of dissolution. Such cases should therefore not be taken into account in judging of the relative success of any mode of treatment. Five of those who died had the peculiar bloody motions which are hereafter further spoken of.

Twelve of the deaths took place from different causes, as mentioned below, in persons who had recovered from the collapse stage, and which so far showed, a result favourable to the line of treatment. Some of those I discovered had got considerably more wine than I directed, and others whiskey, both during collapse and after reaction had set in; three or four of those deaths were caused by consecutive fever with head symptoms; three or four more were in consequence of enteritis or dysentery; two died from relapse into collapse, brought on in one of them by a sudden shock,—this case will be found more particularly detailed hereafter; one death was from delirium tremens; one or two, some days after recovery from collapse, died from downright neglect and want of nourishment; and one, whose convalescence had been going on for several days apparently in a most satisfactory manner, when an unfavourable change took place, dark grumous tarry motions made their appearance and death resulted on the tenth day.

Several of those who died in the collapse stage received no medical treatment whatsoever, being actually in the act of dying when I was sent for; others had very little done for them as their cases were so rapid and far advanced that they died in from two, to four, or six hours, after my first visit; in many, the enema, nearly the most important item in the treatment, was unavoidably delayed in its first administration, and its timely repetition was constantly impossible, the dispensary woman being often elsewhere engaged, having to be sent for considerable distances, and this frequently by night, while the messengers calling for me, and then going to and returning from the dispensary, would sometimes have to travel from two to five miles or more.



Having given this abstract of the malignant cases as they occurred in 1834, which under the unavoidable and almost incredible difficulties encountered, I consider highly favourable to the mode of treatment adopted,—and such as would warrant the conclusion, that under more favourable circumstances, where our directions would be readily and implicitly followed, a far greater reduction of mortality, even in equally bad cases, should and will be experienced,—I shall now give another abstract shewing the relative proportion which those malignant cases bore to the general disease of the district at that period. There were entered on the Dispensary Journal during the entire months of August, September, and October, 524 cases of illness, Seventy-seven of which with four private cases make the eighty-one above mentioned; while the various other cases of disease of the stomach and bowels, amount to the large number of 171; being thus marked in the Journal, common cholera 19; diarrhoea 78; dysentery 13; indigestion 7; colic 41; vomiting 13; thus leaving for three months, for all other diseases, accidents, &c. only the balance of 276. Of this great mass of 171 cases it cannot be denied that many would but for early assistance have slipped into the collapse stage, that a great many of them were the incipient or first stage of the complaint, as described by numerous writers, and by several of them taken into calculation, when making out the relative proportion of deaths to recoveries, and which if done in the present instance would give a comparatively great reduction of mortality from this disease; for every one of those 171 cases recovered, though very many of them were very suspicious and exceedingly severe, bordering closely on the collapse stage, of which they barely stopped short by timely treatment. Several of the common cholera cases

were, I find, marked in the journal at the time of their occurrence as severe, suspicious, &c. a considerable number of the cases of diarrhœa were attended with vomiting and cramps, and several are noted as having had motions of a milk or chalk like appearance, in a majority of cases the discharges were not seen; all those entries were made immediately after my first visit, and denote the state in which I then found the case; but as I had no intention of their future publication, and being greatly hurried, I made no further note of any changes which took place more than the final result, except where they happened in two or three instances to glide into the collapse or most unfavourable stage of cholera. The cases of indigestion, and colic, were frequently attended with vomiting and cramps, and are sometimes noted in the journal as having come on after eating unripe fruit, blackberries, &c.

In the present epidemic from August to December 1837, I have already had to treat eighteen cases of Cholera; six of these were in complete collapse when I was called in; five had the disease in a very malignant form, but did not entirely lose their pulse at the wrist; of the remaining seven, who were all severely attacked, and had great prostration of strength with sunk countenances, the diarrhœa was more easily restrained, not requiring the enema, and they soon rapidly began to mend without having had any further tendency to collapse. I was not able to see the discharges in all the latter cases, they were described in some as having the grey appearance, but I suppose that in others they did not entirely lose a bilious character.

Of the entire number only three died; the first of these was a weakly woman over fifty years of age, I was called to her in the morning and found her in complete collapse,

from which stage on the treatment here recommended, she entirely recovered in the evening, her pulse and warmth having returned, but in the night her case was interfered with, and, as I since learned, she got brandy or whiskey contrary to my directions, and a return of serious diarrhœa was not reported to me,—or the Dispensary woman who had an enema ready to give,—until nine o’Clock next morning, when she was again in collapse; I also now found that she was after privately getting a dose of castor oil, her ammonia mixture was also neglected for several hours, while I was given to understand she had been taking it,—thus as has too often happened our best efforts were frustrated,—she sunk the following evening. The next fatal case was that of an old man about seventy years of age, whose state from the first was quite hopeless. The third case was that of a child, six years of age, greatly neglected and very far gone before I was sent for, this child after much opposition on the part of his relatives got an enema, but refused every kind of medicine or drink offered him, not being able to take even broth or water, he accordingly died in four hours from the time his case was first reported to me.

The three\* collapse cases which recovered, were equally decided as the above, when they came under treatment, one of them having continued in that state twenty four hours, before the least return of pulse could be felt.

There was not a single unfavourable result among the cases in whom I could feel the pulse at my first visit.

Without offering any opinion as to the medium of propagation, or the infectious properties of this disease, I may

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\* Another case of perfect recovery from collapse which lasted without pulse for twelve hours, has taken place, and will be found in the Appendix. This case was treated partly with the *acetate of lead*.

mention as bearing on the subject, that the eighty one cases, in 1834, occurred in about fifty five houses, averaging one and a half to each house, and that the number of houses in which two or more cases occurred was fifteen, in one house six, in another four, in five three cases each, and in the remaining eight houses two cases each. In the present epidemic in two houses there have been two cases each. In one cabin there have been cases of this disease in each of the three epidemics which have taken place.

In considering the prognosis, or opinion as to the probable course and termination of a case of this disease, we must first look to the age of the patient, as I believe it will generally be found that persons much advanced in life will seldom recover from the extreme stage of collapse, their cases are by far the most hopeless of any, but as many individuals after the meridian of life become older in respect to their constitutions much sooner than others who may be their seniors in years, so it is impossible to define any particular age at which the danger is necessarily so much enhanced. My experience would lead to the opinion that the probability of recovery is greater in proportion to the youth of the patients, indeed I should say that under the treatment in the foregoing pages, steadily followed, very few or no children would be lost; at the moment of writing this page two children under five years of age are perfectly convalescent from the worst collapse, one of whom was in that stage for twenty four hours; and to show that this prognosis may apply even to infancy, one of my recovered patients in 1834, who had the disease in the collapse form badly, was only six weeks of age.

The next circumstance to advanced age or broken constitution which renders a case peculiarly unfavourable,

is the discharge of sanguineous motions and which I received, in 1832, from some, the characteristic name of the "fatal symptom," in these motions the bloody appearance is not in separate streaks, or patches, as occurs in dysentery, but uniformly diffused through them, giving a pink, or brick dust colour to the entire. The occurrence of such motions is fortunately not of very frequent observation. They have been sometimes charged to the practice of giving large doses of calomel, but this I am sure is wrong, as I have seen them where little or no calomel had been previously administered. I have generally observed them from persons in the middle or advanced periods of life and do not recollect that I have once noticed their occurrence in children, the youngest person in whom I find that I have noted them, in the epidemic of 1834, was thirty three years of age.

The length of time that persons have lain in the state of collapse before medical assistance has been obtained, or the rapidity with which they may have been hurried into that state, will also be in some degree measures of the accompanying danger; I have been sent for in cases of such intensity that death had taken place before the messenger who called on me had time to return. After proper assistance has been given, some still continue in collapse for a long period, one remarkable case of which occurred in my practice in 1834, where it lasted for seventy two hours without any appearance of pulse, except for a few minutes at the bend of one arm forty eight hours from its first cessation, but this improvement again vanished, until the period mentioned, when reaction came on; during convalescence in this case there was much gastric irritation with frequent vomiting of grass-green bilious fluid for a few days, and the dull green clayey motions, before spoken

of, were passed down ; this person was salivated and had a perfect recovery. I have seen a person live for over eighty hours in collapse, and another nearly fifty hours.

Much mental depression previous to the seizure, sudden alarm, and fear have a manifest unfavourable effect, as proofs of which I may take my illustrations from three members of a single family in 1834. There had been a couple of cases of cholera among the daughters, one of whom was recovering, during which the father became tipsy, while the mother gave way to the greatest despondency I ever witnessed under such circumstances, having lost one of her family in London of this disease on its first occurrence there, and other connections having died in the epidemic of 1832, she was I believe impressed with the idea that the disease ran in the blood, an opinion very firmly taken up amongst many of the lower classes, she moved about the house for days incapable of attending to any thing, waving her hands and moaning incessantly. I was called to her in the morning and found her in complete collapse and despair, from which she never showed the least tendency to improve,— at the same visit I found her husband, with serous discharges, running rapidly into a bad stage of the disease, in two or three hours he began to mend and at three o'clock he looked ruddy and well with a good circulation, having had no evacuation since nine o'clock and in fact in a fair way to perfect recovery,— his wife lay below stairs and was sinking fast, he was on the first floor,—at five o'clock she died and the people below made a great noise, he guessing the cause, screamed, jumped out of bed, rushed to the stairs, and when only halfway down fell exhausted, was immediately after seized with serous vomiting and diarrhoea, and at six o'clock being hastily sent for, I found him in total collapse, in

which state he lingered to the next day. Their niece who had suffered six weeks before from a severe attack of indigestion with violent vomiting came to the house the morning of their seizure, but felt unable from terror and melancholy to attempt assisting in nursetending them, perceiving her agitation I desired her to get home as soon as possible and endeavour to compose herself, but instead of doing so she walked to Cork, as she afterwards said without having any object in view except it was to get away from her thoughts, on her return from town coming through Ballintemple she was met by a person from Black-rock who told her of her aunt's death, instantly she had to run into a house seized with the complaint in the severest form, of which she died in twenty-four hours. I could instance many similar cases but content myself with those three, which in such close connection so remarkably illustrate the ruinous effects of violent depressing passions in this complaint.

In conclusion, I feel that we have reason to believe that a large majority of the very worst cases, may, by timely and steady application of the means suggested by the clearest principles of cure, be in future expected to proceed to a favourable termination.

Before closing this pamphlet I beg to say that while I have candidly stated the results of my own experience, I have as studiously avoided commenting on that of any other individual when reviewing some of the various remedies and plans which had been recommended and tried in this disease; my object having been as far as I was able, to render its treatment more steady and certain, and to promote greater confidence on the part of the public in the resources of medical science.

## A P P E N D I X .

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When noticing the proposal of *acetate of lead* as an astringent in this disease, I stated that it was my intention on the first favourable opportunity to give it a trial, hoping from the strong and respectable testimony in its favour—(though the cases with the collateral remedies employed have not been described as we should wish)—as well as from the rationale of its action, that it was likely to prove a valuable auxiliary to the other means already arrived at; I have now much pleasure in detailing the following case, which was one exceedingly well adapted, for giving it a fair, and yet not too severe trial, as the case was such as I should not be surprised to have seen recover under the treatment recommended in the previous pages.

A Nurse 32 years of age, to whom I was called at 10 o'Clock on the morning of the 21st of December was, on my arrival, in collapse without pulse; with involuntary serous discharges passing off in the bed; her colour was still tolerably good, but decidedly changing to a dark sallow and blue tinge during my visit; her hands and general surface still felt moderately warm and dry; her voice feeble; tongue white, coated, and moist; she complained of being cold, and said she had no pain in the bowels; but painful cramps of her legs were coming on, and proved troublesome for some hours after. She had not been well for a fortnight past, having had a cold, with occasionally pain of stomach and bowel complaint. After supper, the night previous



to the present attack, her bowels were twice affected before going to bed; she rose the morning of her seizure at 5 o'Clock to make her breakfast before going to town to market; shortly after getting up, her bowels were several times severely affected, and she became faintish; she drank greedily two cups of coffee, and eat some bread, shortly after this she began to vomit, and near 10 o'Clock I was sent for, when I found her as above described. I gave one of the pills made according to Dr. Graves's formula, and had twelve grains of the acetate, with one scruple of laudanum, administered in the form of enema, in six ounces of water; a little of this was rejected instantly; vomiting shortly returned, and in twenty minutes I gave a second pill; in half an hour the enema came away, with a serous discharge, when I had it immediately repeated in the same proportions; at 11 o'Clock I gave a third pill, and a fourth at 12; during this time there was neither vomiting or diarrhœa, except a very little oozing of the enema; within those two hours she had changed greatly for the worse in appearance, her skin became very dark and livid, her voice dwindled to a whisper, her eyelids nearly closed, the eyes upturned, and the conjunctiva at the lower part filling with red bloodvessels, she also complained of great uneasiness in the region of the stomach.

She had been taking during this time about three ounces of wine in arrow root, a little weak chicken broth, and some water; at half past twelve her countenance looked a shade better, I commenced the ammonia mixture, giving it every quarter or half hour, occasionally arrow root with a little wine, chicken broth, tea, and water. I had also applied a moderate sized blister to the pit of the stomach, and a jar of warm water to the feet.

At five o'Clock she was much improved; her colour was clearer, her eyes open, and she continued looking about; her stomach having felt loaded with drinks, she discharged it once since last visit; bowels not affected; had taken part of a pint of porter, which she finished in the course of the evening, she would have preferred water but her friends would not give it as often as she

wished, except when I was present; there was still no trace of pulse at the wrist.

At ten o'clock her pulse had returned and was steady and good; her colour clear; her eyes—except some redness of lower part of conjunctiva—looking well; her voice much stronger; the blister becoming painful; she vomited a few times in the course of the evening, but now appeared in rapid progress to convalescence.

I left some of the pills to be given through the night, if the bowels should be affected, or if the vomiting became more frequent; desiring the ammonia mixture to be omitted during the time of giving the pills, if they should be necessary.

On the morning of the 22d they sent me word that she was distressed with straining and vomiting, when I desired a pill to be immediately given. On seeing her at ten o'clock her attendants said they had given the pill, but on counting the number I left, I found they had not given any, although she vomited several times in the night, and about five o'clock had a return of the purging. She was now at my visit very much altered for the worse, with the serous discharges continuing; her colour dark sallow; countenance haggard, and expressive of fatigue; her pulse weak and unsteady; complains of heartburn, and the acrid taste of the vomited matters; is taking tea and whey, got chicken broth and other drinks through the night, with some ammonia mixture; she nursed her child, who is six months old, twice in the night. I immediately gave one of the pills, and had an enema containing eight grains of the acetate of lead with twenty drops of laudanum administered; she did not vomit during the day after this; I gave another pill at twelve, when she was disposed to lie quiet, and her pulse had become steadier; the ammonia mixture was withheld from the morning, she does not now like wine in arrow root; I ordered chicken broth, whey, and water, to be continued.

Four o'clock—There has been no vomiting; a slight oozing once of the enema; she has lain very quiet; does not complain so much of heartburn; is not thirsty; got the ammonia mixture

once and has taken a little chicken broth,—I think she should have had more drinks,—her pulse is weak and she appears very languid; I gave another pill and directed she should take in half an hour some of the ammonia mixture, and to have it repeated three or four times at similar intervals, chicken broth to be continued, and to get tea or whey as soon as possible, with occasionally a little water if inclined for it. I desired a pill to be given in case of a return of any purging or vomiting, in my absence, with directions not to give the ammonia for some time after the pill.

Half past nine o'clock—Vomited once, shortly after I left, about half a pint of waterish fluid, having just drank a cup of tea; she then got the pill and has not since vomited; after this she got chicken broth, and arrow root without wine; then the ammonia mixture three times, at intervals with the chicken broth. She had a very little fluid from the bowels; has no heartburn; is considerably better; pulse steady; and her complexion clear; she is quite warm; tongue furred and inclined to be dry—as has been the case since the first re-action last night,—lower half of conjunctiva still blood-shot; has nursed her infant a little, twice to day, her breasts have been large ever since yesterday evening; as yet neither bile or urine have made their appearance.

I left two pills in case of any return of serous discharges; she is to have tea or whey, chicken broth, plain arrow root, and a little water for the night.

December 23rd, Eleven o'clock, A. M.—Continues to improve; pulse 84, soft; tongue dry, and furred in the centre; no pain of head or other part; lower half of conjunctiva still congested; has cough, having had a cold on her previous to this attack; blister healing; has had no motion or vomiting; passed limpid urine twice this morning in large quantity; has taken no pills since yesterday; likes chicken broth, has taken tea, arrow root, and water; slept last night; nursed her child two or three times. She describes a pain which she complained of yesterday near her ears and in her gums, as a sensation as if she had been getting locked-jaw, and says that she put a corner of the blanket between her teeth to prevent it. Evening; going on well.

Ten o'clock, December 24th—Pulse 84, weak; tongue as yesterday; she feels very feeble and exhausted; had two small fluid motions this morning of yellow bilious character, the first at six o'clock, with a little clear fluid vomiting once after drinking a cup of tea,\*—when she got a pill: at nine o'clock the second motion, and having felt her stomach uneasy she put her finger in her throat and vomited some thin fluid, slightly yellow, after this she took a second pill, and has not vomited since; passed urine, which is limpid, three times since yesterday; slept last night; had some broth, arrow root, and ammonia mixture, which are to be continued, with wine in the arrow root.

Three o'clock—Is better and her pulse stronger; has not had any motion or vomiting; urine clear and nearly limpid; congestion of conjunctiva lessening.

Twenty-fifth, ten o'clock, A. M.—Feels better; rested well; has had no motion, or vomiting; urine clear, limpid; pulse 84, soft; tongue clean; conjunctiva natural; blister healed; suck nearly gone; has been taking broth, and ammonia mixture occasionally, as she gets lowness, and as if her heart was stealing away now and then; arrow root, and a bit of cracker this morning with tea.

Twenty-sixth—Is up to day; has taken broth, arrow-root with wine, and ammonia mixture occasionally; tongue clean; feels a queer sensation still in her jaws and face, and about her nose. No motion; passes urine; suck nearly lost,

Twenty-seventh—Going on well; had one motion last night of partly formed perfectly natural bilious fæces; suck returning; feels her strength increasing—well.

Having given this case in detail, I must now state, that the two first enemata were administered in the boiled pump water of Blackrock, which contains carbonate of lime, as I could not at the moment obtain soft water, nor vinegar to neutralize the carbonate; therefore a very little of the acetate was decomposed and converted into the

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\* This clear fluid is the tea, the milk of which has been separated by coagulation, as I have often observed.

carbonate of lead, but as this was reduced to the most minute state of division and possesses properties similar to the acetate, it could not materially affect the result. indeed the enema evidently produced the desired effect. but it may be questioned whether this was chiefly owing to the salt of lead, or to the laudanum, of which I gave one scruple each time, not feeling justified in wholly discarding the assistance of a remedy in which I have the greatest possible confidence, indeed Dr. Graves does not contemplate doing so either, as he says he gives a few drops together with the acetate in the enema. I dissolved the acetate in rain water with a few drops of vinegar, in the enema that was given on the second morning, and which had a similar good effect, but here I also combined the laudanum.

This patient took altogether, in four days, ten pills; four on the first day of her illness, four on the second, and two on the fourth. While using the pills I caused her drinks to be as much as possible prepared with soft, or rain water, but the hard water was also sometimes unavoidably used; I look on the prevention of the decomposition of the acetate under any circumstances as almost impossible in this complaint, when we consider the natural contents of the various internal secretions, and the variety of drinks which the patient must get; whichever salt of lead may be supposed in this case to have come in contact with the mucous membranes, I think we must admit that it appeared to exert some of its peculiar astringent action, and so far as this case goes, would seem to be of use as an auxiliary; but it must not however be too much depended on, and I should fear to push it much farther than I had done.

During the first two hours when giving the pills it will be perceived that I allowed wine with arrow root more frequently, instead of the ammonia mixture; but should

I be right in supposing that the acetate undergoes decomposition in the fluids of the stomach, either into a carbonate or other salt, perhaps the ammonia need not be so rigidly kept back during its administration; and until I began the ammonia mixture in this case, I felt a great responsibility, as the collapse appeared to be increasing in intensity; perhaps in such a case a small quantity of a diluted spirituous stimulant might be ventured on for a few times until the ammonia was perfectly admissible.

After the strong objection which I have before pronounced to opium by the mouth, it may be thought strange that here for the first time in three years, I had again used it, but the exceedingly small quantity in which it was combined with the acetate could scarcely, with any reason, be objected to, the patient not having taken during four days an entire grain; a minute quantity to which it never was confined when given hitherto, either alone, or combined with calomel; and it is to the large quantity in which it was used with the intention of arresting the serous dejections, or to totally stop the vomiting, that I feel the great objection lies.

I did not give this patient any calomel;—nor is its administration necessary to recovery from collapse, as I have before mentioned,—the biliary secretion however was certainly slow in making its appearance in this case, but this circumstance occurs occasionally under every kind of treatment; I do not see that when the serous evacuations are checked by this remedy—if such, after careful and extensive trial shall be found to be its action—why we may not then give some mercurial preparation, cautiously as before advised. Its use I believe would not be found incompatible with that of the salts of lead.

Finally it is to be observed that the motions were not at all blackened in this case, and therefore that we are

not to expect this appearance after the use of lead, and invariably as has been stated.

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### FURTHER CASES.

While the foregoing part of the work was in the press, the following cases came under my charge, and by their brief detail will serve further to illustrate the line of treatment.—

On the second of January, I visited a Nurse about twenty-five years of age, in whom there was much prostration of strength, with abundant serous evacuations from the stomach and bowels; she had been affected from the early part of the day with diarrhœa, and in the evening when the prostration, with other alarming symptoms had set in, I was sent for; her pulse was weak, but distinct; I had an enema of one drachm of laudanum with starch administered, and which was retained; she continued to vomit a little occasionally, I gave two grains of calomel with aromatic powder, one grain again that night, and repeated in the morning at which time she had a bilious discharge from the bowels. She got from the first moment of being reported to me, the ammonia mixture, arrow root with wine and broth as soon as it could be prepared, with tea, whey, and water, as occasional drinks. She recovered rapidly. In this case it will be perceived I did not use the acetate of lead.

On the sixteenth of January, at ten o'clock, A. M. I was called to see a Woman seventy years of age, who had been taken ill in the latter part of the night, with serous diarrhœa, she had taken one dose of the ammonia mixture which I sent over, and had scarcely received any of a starch and laudanum enema which had been attempted to be administered. I found her in collapse, without pulse; face pallid, remainder of the surface turning purple; skin warm; tongue moist; lips and about the mouth cold; voice feeble and distressed; has cramps of legs, and pain of abdomen; is passing involuntary serous motions in the bed, which is very wet; vomited only once or twice; has taken,

besides the ammonia, only two cups of tea since she was taken ill. I gave one of the pills of acetate of lead, and had an enema of twelve grains of the acetate, with a little vinegar, and half a drachm of laudanum, given in rain water; most of this was retained; in half an hour I gave a second pill; ordered ammonia mixture, broth, and arrowroot with port wine, to be given at intervals. A warm brick to be kept near her feet. Before I left, I found occasionally a slight trace of pulse at the wrist.

One o'clock—Has taken the above drinks and nourishment; retains the enema tolerably; vomited once, having felt her stomach loaded; cramps continue; her pulse is perceptible, but feeble; there is more warmth of face and lips; I gave another pill, and directed a blister to the pit of the stomach.

Seven o'clock—retains the enema; is better; warmer; colour improving; pulse small and weak, but distinct; tongue dry; has vomited a little, two or three times; has taken broth, ammonia mixture, arrow root with wine, and some tea; feels the blister acting; no urine. To continue the above, and a little water as she feels thirsty.

Seventeenth—Much better; no motion; passed about two ounces of urine in the night; pulse 80; tongue slightly furred; no headache; vomited two or three times; feels thirsty;—ordered to continue the drinks, &c. as before.

Eighteenth—Feels much better; had one motion of a nearly black colour yesterday evening, which was somewhat consistent; passed urine twice; no vomiting; pulse 80; tongue nearly natural; no headache; blister healing; refuses broth.

Nineteenth—Had one motion of *bilious* character and rather fluid, last night; passed urine;—well.

On the twenty-sixth of January, a Man aged about fifty-four, was reported to me at half past nine o'clock A.M. he had been in the night attacked with profuse diarrhoea of a whey-like appearance, and in the morning vomited a great deal of a clear fluid; he is greatly depressed, with much prostration of strength; pulse weak; has griping pains of bowels; is very thirsty;—had taken a glass of burnt spirits in the morning which he threw up, and drank two cups of tea. I gave the ammonia mixture a few times, and one of the pills, also allowed tea, arrow root with wine,



and water or whey. I had an enema of twelve grains of acetate of lead, with two scruples of laudanum administered.

He states he had not been well for some days previous to this attack, and his bowels had been occasionally too free.

At 11 o'Clock he felt better; pulse improving; no motion.

At  $\frac{1}{2}$  past 1 o'Clock he was much better; pulse firmer; tongue dry.

Evening—Going on well.

Twenty seventh—feels quite recovered; pulse natural; tongue moist; had one dark coloured motion last night.

The acetate of lead given in moderation continues to gain on my confidence, and I deem it a very useful auxiliary to the general plan of treatment recommended in the previous pages. In the case of the old woman I used but one enema of acetate, combined with laudanum; and gave only three pills. When the discharges from the bowels are restrained, as in this case, we should not further persevere in the repetition of these pills, to arrest the vomiting, as from the view I have taken of that symptom, I still believe it to be one which we need not be too anxious entirely to suppress: when the stomach becomes loaded, it must be discharged, and I much prefer this happening occasionally, to attempting to withhold a sufficient quantity of nourishment and drinks.

The *enema* is our chief remedy whether composed of laudanum alone, or combined with acetate, and should be persevered in while serous diarrhoea continues. I would caution against the *free* administration of the acetate, by the mouth, (which has been sometimes followed), as I believe it will in general be found unnecessary, if the enema be properly attended to, and the idea of totally checking the vomiting is given up.

It will be seen that in the latter cases, I did not hesitate to give the ammonia, both before, and while giving the acetate of lead pills, nor do I see any reason to fear a continuance of this practice; while it gives me greatly increased confidence, that in the first few hours I may persevere in the use of the ammonia without being obliged to have recourse to any of the spirituous stimulants.



