An effectual and simple remedy for scarlatina and measles : in a letter to John Simon, Esq., F.R.S., the Medical Officer of the General Board of Health, with an appendix of cases / by Charles Witt.

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EFFECTUAL AND SIMPLE REMEDY

AN

FOR

SCARLATINA AND MEASLES,

IN A LETTER TO

JOHN SIMON, ESQ., F.R.S.,

THE MEDICAL OFFICER OF THE GENERAL BOARD OF HEALTH.

WITH

An Appendir of Cases.

BY

CHARLES WITT,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, AND EXTRA-LICENTIATE OF THE ROYAL COLLEGE OF PHYSICIANS, OF LONDON.

SECOND EDITION.

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PREFACE TO THE FIRST EDITION.

THE writer of the following pages, induced by a sense of duty and urged by the advice of friends, submits to his brethren of the profession (and through them to the public) what he has found, from long and varied experience, to be a sure and simple remedy for the cure of Scarlatina and Measles.

Doubtless, it may appear to many a somewhat startling novelty to put forward the *sesquicarbonate* of ammonia as being a specific of this valuable kind; but the writer deems it to be as valuable in this fever, as the disulphate of quinine is acknowledged to be in intermittent fevers.

No discovery, however, is pretended in giving such a description of it. Its use for this purpose was introduced at the beginning of the century by a physician of some provincial celebrity, before it became adopted as a system by the late Mr. Wilkinson. The pupils and private friends of that gentleman have naturally followed him in having recourse to the same remedy, and with the like success; but, as it does not appear that any among these have as yet publicly testified to its value, the writer (as one of that privileged body) has here undertaken the task, only regretting that it has not fallen to the lot of some living practitioner better qualified than himself to fulfil it.

He hopes to have the attention of the profession to what he has to state; and if he can obtain indulgence so far, he does not fear,-however imperfectly he may plead his cause,-the fullest investigation of its intrinsic merits. Reference has chiefly been made to the dangerous malady of Scarlet Fever; the prevalence of which since Christmas 1857,* and its fatality, even in the families of many medical men, has been one motive for printing these pages. It is, however, generally epidemic somewhere; and the great number of its victims in all classes of society, continues to be one presumptive proof, that the best method of treating it yet remains a problem to be solved. The treatment here recommended will be found entirely consistent with the pathology of this disorder, as well as with that of measles; otherwise, as the writer is well aware, it would justly be pronounced empirical, and undeserving the least attention from practical and scientific men.

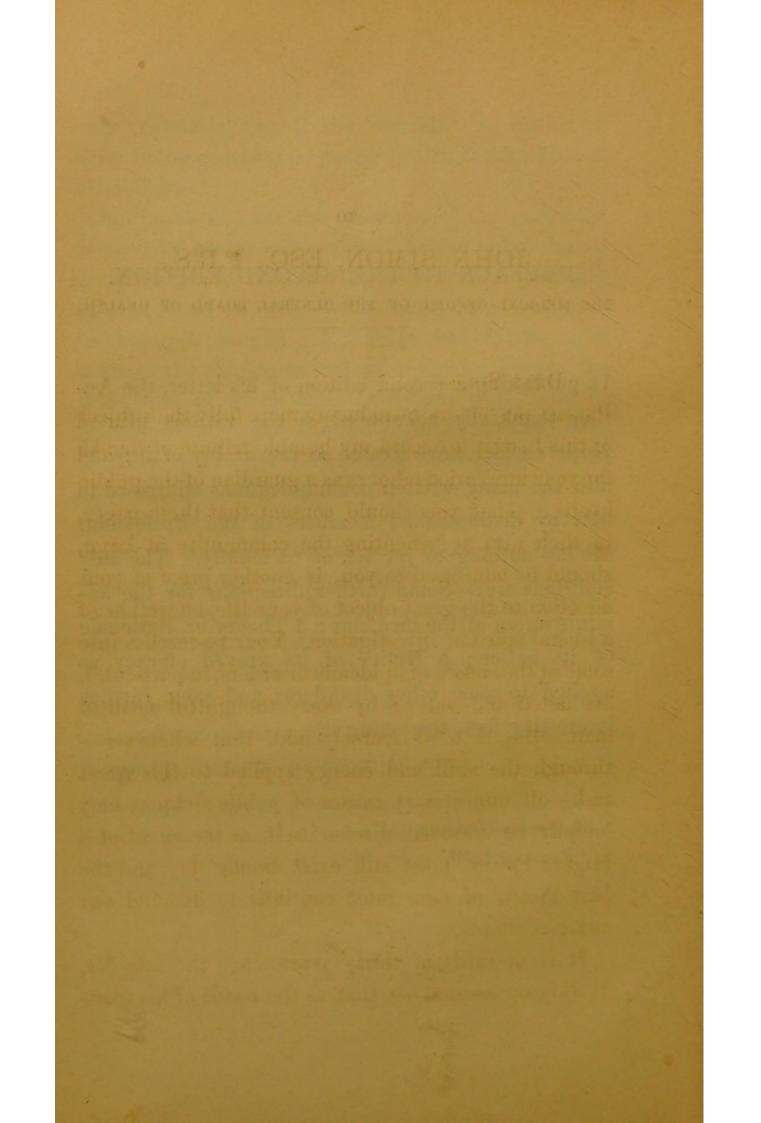
* The mortality resulting from scarlatina, in London alone, for the year 1858, down to the end of the first week in December, amounted to 3628 deaths—being more than double the number (viz. 1587) for the whole year 1857.

PREFACE TO THE SECOND EDITION.

In publishing a second edition of his letter, the Author thankfully acknowledges the various printed Notices which have treated so favourably of it; and also the many written communications addressed to him by distinguished members of the Profession. He has nothing to retract, or to modify. The only additions are:—Some further directions for the administration of the medicine; a Theory or Rationale of its action; a Notice of its proved efficacy as applied to some other disorders; and some further interesting facts respecting it.

C. W.

30, Spring Gardens, January 1859.



JOHN SIMON, ESQ., F.R.S.,

THE MEDICAL OFFICER OF THE GENERAL BOARD OF HEALTH.

DEAR SIR,-

PERMIT me, before introducing more fully the subject of this Letter, to record my humble tribute of thanks for your unwearied labours as a guardian of the public health. That you should consent that these pages, in their aim at benefiting the community at large, should be addressed to you, is another proof of your devotion to the great object of your life, as well as of a liberal spirit of investigation. Your researches into some of the causes of epidemic disorders, in particular, are noted and valued by every thoughtful medical man. But I need scarcely add, that wheneverthrough the skill and energy applied to this great task—all unnecessary causes of public sickness may happily be removed, disease itself, as the agent of a Higher Power, must still exist among us; and the best means of cure must continue to demand our anxious attention.

It is upwards of thirty years since the late Mr. Wilkinson assured me, that, as the result of his treat-

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ment of scarlatina and measles with the carbonate of ammonia (as it was then termed*), he had not lost a single patient ; and he further stated, that, after having cured these diseases by this agent, he rarely, if ever, had any of the usual unfavourable sequelæ to contend with. And here let me, in passing, pay some tribute of respect to one whose friendship, as well as professional opinions, I deeply valued: Mr. Wilkinson was well known in his time as an elegant scholar and a finished gentleman of the old school; his judgment, skill, and experience,-all combined with active benevolence and success in the practice of his profession,—have rarely been surpassed; and I may add (for this is important to the purpose in hand) that he was a man of the most scrupulous integrity. An entire reliance may, therefore, be placed on his statements.

The question may naturally suggest itself, why he did not make public a plan so successful? He did so; but it is to be regretted that this was only done in such a way that it failed in adequately attracting public attention. What he says, relative to this subject, is contained in his short and valuable work on *Cutaneous Diseases*—to which scarlatina does not properly belong. This may be one reason why his opi-

* This medicnie, formerly called the volatile alkali, has since received the names of subcarbonate, carbonate, and sesquicarbonate of ammonia. nion respecting it failed to attract the notice which I hope to be able to show that it deserves.

But another, and certainly a powerful, cause operated against the recognition and adoption of this practice. It was new, and had never been a part of the doctrine of the schools. Scarlatina was then treated as a purely inflammatory disorder; and the proposal to administer what was thought to be an irritant in a fever, was looked upon as a heresy, to which the medical mind of the day was unprepared to give the smallest attention. But, happily, most members of the profession in our time have received a good preliminary education, as well as a superior one of a strictly professional kind. My own medical friends, to whom this practice was before unknown, have shown the greatest readiness, after the due explanation had been given, to afford it a fair trial; and many have since expressed their conviction of its surprising efficacy.

That the subject matter may be laid fully before the reader, I proceed to extract from Mr. Wilkinson's book (which has long been out of print,) those passages which relate to scarlatina and measles. He says:—

"In the year 1803, I attended several cases of the scarlatina maligna, with Dr. Willan and the late Dr. Hamilton. It is well known that the disease raged most fatally during that period, and we lost four of our patients out of five in one family. Never were

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men more puzzled to know what remedies to adopt: all which Dr. Willan has recommended in his publication were employed. Emetics, purgatives, calomel and antimony; many other diaphoretics; opium, wine, and acids; bark, blisters, decoct. contray. with oxymel of squills; application of cold water, gargles of different descriptions, fumigations, etc.: all without the least good effect; all without making the least sensible impression upon the disease in any of its stages.

"One fine girl, about eleven years of age, in high health and spirits in the morning, was attacked, an hour after, by the disease, and destroyed in thirty-six hours. . . .

"About this time, Dr. Peart published his Practical Information on the Malignant Scarlet Fever and Sore Throat, in which he describes the wonderful effects of the subcarbonate of ammonia, and considers it to be endowed with a specific power over that disease. Like other practitioners, he was continually lamenting the loss of his patients by that dreadful malady; till he employed the subcarbonate of ammonia in the manner he describes; and from that moment he did not lose one patient out of nearly three hundred.

"When I read this account, I immediately inquired after the character of Dr. Peart, and finding that he was most respectable, both in talent and probity, and engaged in very considerable practice, I had no reason to doubt the truth of his statement, and therefore immediately adopted his remedy. . . . And I am happy to be able to declare, that, from that moment to the present, a space of seventeen years, I have not only never lost a patient in the above disease, but have never had a case of the kind that has even appeared dangerous, or that has even given me a moment's anxiety. . . .

"In addition to my own testimony of the powers of this medicine, I have that of my friend, *Mr. Ricardo*, whose opinion is highly valued by all who know him, and who will not be thought to give too much credit to the virtues of any one particular remedy. He writes as follows :—

"' ' I have received your letter, requesting me to state the result of my experience of the effect of subcarbonate of ammonia, in the treatment of measles and scarlatina. As I employed this medicine at your suggestion, many years ago, I lament that I have not placed on record any particular cases, many such having been under my care; but, perhaps, it may be sufficient for your purpose that I am able to declare, that the exhibition of subcarbonate of ammonia in such cases has been attended under my direction with constant success. You know that I am situated in the neighbourhood of many schools which I am in the habit of attending; and, during the twelve or fourteen years in which I have employed the subcarbonate of ammonia, I have not lost a single patient of some hundreds whom I have attended in the above diseases.

" 'As an additional circumstance in favour of this remedy, I must mention, that I lost two patients whom I attended with another medical gentleman, where I had not sufficient influence to have the ammonia employed. To be as particular as my memory and my present ill state of health will allow me to be, I must state, that among the paupers I have lost two or three children ; but the administration of the medicine was evidently neglected by the nurses, as was every other attention necessary to give the patients a chance of recovering.'

"Dr. Willan does not appear to have put to the proof the assertions of Dr. Peart upon so interesting a subject as scarlatina maligna; instead of which, he quotes only from his publication, without giving any opinion upon it. He observes: 'A physician near Gainsborough, considers volatile alkali to be endowed with a specific power over the malignant scarlet fever and sore throat. He dissolves two drachms of the carbonate of ammonia in five ounces of water, and directs the patient to take half a tablespoonful, or two teaspoonfuls every two, three, or four hours, according to the urgency of the symptoms. If the difficulty of swallowing abate, and the patient wish for it, a little cold water may be added to each dose. Cold water, or toast and water, may be drunk at pleasure. The above remedy was given in every form and in every stage of the scarlatina. Some,'

says Dr. Peart, ' were glowing with universal efflorescence; in some, the extremities were swelled; in others, foetid ulcers appeared; in most, the throat was swelled and inflamed, often ulcerated, and respiration almost prevented; but, in the most alarming cases, a scorching fever, and raging delirium, rendered the patient's situation horribly distressing; yet, in all these variations of the disease, the volatile alkali was my specific, which I administered to between two and three hundred patients, successively and successfully.' The immediate effects of the remedy are stated to be a diminution of heat, of fever and delirium, and a disposition to sleep. It is hardly necessary to mention that during the exhibition of this remedy the bowels should be kept in proper order; and that, if at any time there should be an accumulation, four or five grains of the hydrarg. submur. should be given; gargles likewise should be employed.'

"Dr. Peart does not attempt to theorise upon the subject; content with the success of his remedy, he cares not in what manner it operates; but I will take the liberty to state that I depend not upon its diuretic, nor its diaphoretic qualities, but believe that it possesses the power of increasing the strength of the arterial action, at the same time that it diminishes its frequency; that it supports the *vis vitæ* without increasing the heat or irritability of the system; and by such means counteracts the tendency in the scarlatina anginosa and maligna to ulceration and sloughing, and all the other evils which sometimes attend this dreadful disease. But, to effect such purposes, it must be given, as Dr. Peart has prescribed, in a state as strongly stimulating as it can be swallowed. . . .

"I hope I shall not be thought to have expatiated too much upon the virtues of a remedy which I have found so efficacious in my own practice; but I have seen so many cases of scarlatina and rubeola, treated by others with the common antiphlogistic remedies, which have been so lingering, and have left such ill effects in the system, that I feel it my duty to urge the employment of the subcarbonate of ammonia as extensively as possible."*

The only other English writer in whose works I can find any allusion to such an employment of this medicine, is Dr. Lettsom, who, in his "*Reflections on the general Treatment and Cure of Fevers*," *in* 1722, speaks of ammonia (under its old name) as follows: "Whether the volatile alkali proves an antiseptic internally, *is not yet ascertained*, but its good effects in fevers are *established by numerous facts*; it is stimulant, antispasmodic, and very diffusible. On the last account its operation is transitory; it should, therefore, be given at short intervals to procure any benefit."

* Pages 13-24, Wilkinson, On Cutaneous Diseases. N.B. The words printed in italics are not so in the original of the above passages. In other countries it has found advocates. Dr. Strahl of Philadelphia has made public his faith in it, grounded on his experience, as a real specific for the cure of scarlatina; and Dr. Reicken, of Brussels, has written at some length on the surprising effects which he has found it to have over certain epidemics, more especially over scarlatina.

A French physician, indeed, says, that he has tried this medicine in some cases of malignant scarlatina without success; but it is very probable that this partial failure may have arisen from the neglect of certain plain requirements which this treatment, like every other, is fairly entitled to receive. It may have been administered too late; besides, as a part of his treatment, acidulous drinks are recommended, by which, I need hardly say, the medicine would be rendered completely inert.

As to the dose of this medicine, it must depend upon circumstances how much ought to be given. Dr. Peart gave six-grain doses in cases of unusual severity. Mr. Wilkinson (in whose steps I have followed,) rarely gave less than three grains, increasing the dose according to the ages of the patients to ten grains, and repeating it more or less frequently, according to the severity or the mildness of the symptoms. In the Appendix will be found a case (No. 3) in which as much as seven grains were administered every hour, for the space of twenty-four hours, and during every other hour for the next like space, and this not only with perfect safety, but with complete success. I may add, that a talented practitioner, at a wellknown town in Hampshire, to whom I had mentioned this use of the sesquicarbonate of ammonia, and who has since extensively used it with unvarying success, assured me recently that he found that the quantity to be administered need only be limited by the special circumstances of the case.

In cases where the medicine is refused by patients, it can be taken in a little milk. Very young patients, refractory children, or delirious patients, sometimes cannot be made to swallow it; but the difficulty can be got over in such cases by resorting to another method of introducing the medicine into the system.*

I have alluded to the mischief of counteraction caused by acids while under the influence of ammonia. Great care must be taken that no acid drinks of any kind find their way into the sick-room; not even oranges, which are so apt to be brought in by indulgent friends, can be allowed. All that is necessary is toast and water, or simple water, for the

* The India-rubber bottle, with ivory pipe attached, may be used for conveying the medicine, in suitable quantities, into the lower intestine, from which it would be quickly absorbed. For this purpose the ammonia can be dissolved in a wine-glassful of warm milk or broth. Thus the further advantage would be gained, at the same time, of administering some small (but perhaps a sufficient) quantity of nutriment. patient's sense of taste is usually lost for the time; but there is no objection to the accustomed cup of tea.

Perfect quietude is especially required under the operation of this medicine. The patient is thrown by it into a sleepy state, as nearly as possible resembling the repose of health; and as long as that inclination remains (which is much to be desired, as contributing to recovery), it should not be interrupted. In aid of this, the room should be somewhat darkened.

The state of the atmosphere in the patient's room is a matter of importance. Chills must be carefully guarded against. It is scarcely credible, without personal experience of the fact, how extremely sensitive the skin becomes in scarlatina, being painfully alive to the slightest exposure to cold air; but, besides the prevention of needless suffering from this cause, it might check or stop the progress of the eruption, thus incurring the risk of some serious complication of the case. At the same time, care must always be taken that there is an abundant supply of *pure* air. When the eruption has declined, the practitioner may act according to his judgment, both as to drinks and diet: a little beef tea might be given as soon as an inclination for it is manifested.

As a caution, let me request all who make trial of this medicine to do so in complete reliance upon it, simply and *alone*, with not even any of its combinations; and to bear in mind, that the prospect of success is the greater when it is administered early.

The use of purgatives in this disorder requires care. With adults, five grains of calomel will be a proper dose. With young patients, a single grain, or less, placed on the tongue when the first symptoms appear, will be enough; and it is better that even that slight dose should not, without urgent cause, be repeated, lest the action of the medicine relied upon should be interfered with. This will be more clearly seen if we take a glance at the pathology of scarlatina. I apprehend that this disorder originates in the imbibing of a poison which has a contagious source in some miasma; after which, about eight days are occupied in what may be called the incubation of the malady: at the end of this period the process of expelling this poison from the system is set up, which is done by its being thrown out upon the skin-the mischief caused to which part of the human organisation is easily repaired without injuriously affecting the constitution. If the powers of nature are healthful and her efforts properly seconded -not thwarted or lowered-this salutary progress of the disorder takes place as a matter of course. Should nature fail, however, in the effort to throw off the poison, by fixing its action on the outer membrane of the body in this simple manner, it must take a course

attended with more or less danger; it may settle on some of the internal membranes, as of the lungs or of the kidneys; or if it should fall on the pericardium, or the membranes of the brain, it must destroy the integrity of their structures, and will be followed by effusion, and then rapidly by death. It may also settle on any of the glands, as the liver, the kidneys, the submaxillary, or other of the minor glands. It will be seen, therefore, that the settling of the disease on the outer skin is the result to be desired; that the object is not to lower what is looked upon as diseased action, so much as to sustain the curative efforts of nature. Whatever medicine, therefore, will best promote this salutary effort must deservedly be pronounced the most effectual one; and if we diminish its action by the too free use of purgatives, etc., we should, to that extent, be diminishing also the prospects of recovery. As to emetics, I consider the use of them in this disorder to be injurious. The risk from bleeding is still greater.

I add, with equal confidence, that measles, if treated in the manner which has been described, will prove to be neither a dangerous nor a protracted disorder. Here, too, I have always found the same immunity from any distressing consequences.

The question has been so often put to me, "What is the Rationale of the action of this Medicine?" that I feel bound,—difficult as it may be to account

altogether for the remarkable phenomena which it exhibits,-to give that theory which is most satisfactory to my own mind, as being practically most consistent with the administration of it. In the first place it produces sleep, although it is not known to possess any narcotic properties; and patients become in every respect tranquillized within a few hours after it has been taken. Whether the seizure be accompanied by affection of the brain, or of the lungs, or of the bowels (evidenced by headache, by cough, or by abdominal tenderness), each ceases upon the system being brought under its influence; and this usually happens in six, eight, or twelve hours. Its beneficial effects are observable, in the majority of cases, just at the very time when patients might be expected to get worse. When administered for the first time, after alarming symptoms of any kind have set in, without the appearance of any eruption, the eruption is produced, and the bad symptoms simultaneously cease. Again, when such symptoms exist with an eruption, and this perhaps excessive, and such a state having continued for days, a diminution of the eruption takes place within a few hours, the bad symptoms subsiding as before. Even when delay, or peculiarity of constitution, has occasioned local mischief, the presence of ammonia is found exerting its influence - causing diseased action to subside or to die off by the removal of its

source. Lastly, these good effects are produced as effectually in patients whose constitutions, from their healthfulness, require no aid from stimulants, as in those evidently deficient in bodily vigour. Do not the facts which have been adduced afford a rational explanation of the definite action and the properties of this medicine ? Do they not shew, that shortly after being taken it is absorbed and mixed with all the circulating fluids of the system; and then, by some process of animal chemistry, that it has the effect of destroying, or of neutralising, the irritating poison with which it has commingled ? Non-medical observers have remarked that it seems to kill the disease. At least nature is rendered equal, through this agency, to the task of throwing out the poison upon the surface. I conclude that the sesquicarbonate of ammonia acts neither as a sedative, nor as a stimulant, but positively as a specific or antidote-the highest commendation assignable to any medicine.

It has indeed been asserted, as an argument for the use of stimulants in these disorders, that brandy and wine exert a beneficial effect; but this has never been proved, and in my opinion they are much more likely to aggravate such disorders, than to aid the natural powers in subduing them.

It was observed in the First Edition of this Letter, that the question, "Whether the use of this medicine might not be beneficially extended to some *other* disorders," well deserved to be considered on any future opportunity, And, if the correctness of the pathology of the principal disorder which has been treated of be admitted, the conclusion seems inevitable, that small-pox, erysipelas, and other exanthemata must be included in the same category. This indeed Mr. Wilkinson proved most satisfactorily to be the case; and I no longer hesitate to say, that his practice has been fully confirmed both by my own and by that of others. Even with reference to the new (and so often fatal) disease termed Diphtheria, I have received several communications assuring me of the successful use of the ammonia. One correspondent states, that out of twelve cases he had not lost one after having administered it.

I must not omit to notice its extreme cheapnessa circumstance which cannot fail strongly to recommend it.

A few interesting facts in connexion with the subject may here be added :--

Scarlet fever, though it has so long baffled the efforts of medical science, was evidently known in England before 1700; for in that year the only surviving son (out of seventeen children) of the Princess Anne and Prince George of Denmark, died of that disorder, for which he had been improperly treated*

* "The Princess Anne kept the eleventh birthday of her son, the Duke of Gloucester, with great rejoicings, little anticipating the result. —an event, however, which had the momentous consequence of changing the dynasty of these realms, and through which have resulted the blessings derived to us through the House of Brunswick and the rule of our present most gracious Queen.

It has struck me as very suggestive that the effect of ammonia upon the bites of all poisonous snakes is analogous with that which it exercises in the disorders we have been treating of. My professional brethren, in country districts, must occasionally have observed this remarkable effect upon patients so suffering: it has been long and generally acknowledged that when such viperous poison has been infused into the system, this is *the* antidote.

The Hon. Robert Boyle, in his Essay on the Blood, describes what he calls "The Spirit of that Liquor," which he proves to be ammonia. The more recent experiments of Latini and Valle prove that ammonia

The boy reviewed his juvenile regiment, and presided over a grand banquet. He was very much heated and fatigued. The next day he complained of sickness, headache, and sore throat; towards night he became delirious. The family physician of the Princess sought to relieve him by bleeding, but this operation did not do him any good. Dr. Radcliffe was sent for by express. When he arrived at Windsor Castle, and saw his poor little patient, he declared the malady to be *the scarlet fever*. He demanded 'Who had bled him?' The physician in attendance owned that the duke had been bled by his order. 'Then,' said Radcliffe, 'you have destroyed him'. The event justified the prediction of the most skilful physician of the age."—STRICKLAND'S *Life of Queen Anne*. is evolved in expired air. If, then, its existence in the blood, in a certain proportion, is essential to the health—or is generated as a corrective of the morbific poisons which the system is continually liable to imbibe—may not an increased proportion, artificially introduced, effectually counteract the poison of some bodily disorders? And there is one very curious fact yet remaining to be noticed : Ammonia is the *only* known substance capable of preventing the coagulation of the blood when out of the body—a fact for which the profession is indebted to the researches of Drs. Richardson and Barker.

As a means of additional information and guidance, if needed, a few cases, with remarks, have been herewith added in an Appendix; and in taking leave of my subject, permit me, my dear Sir, to repeat my thanks to yourself for consenting that this humble exposition should appear under your auspices.

With every sentiment of esteem, I beg to subscribe myself,

Your faithful friend and servant,

CHARLES WITT.

30, Spring Gardens, January 1859.

APPENDIX OF CASES.

CASE NO. 1.-SCARLATINA.

A lad, about twelve years of age, was sent home from a Military School, attacked with scarlatina. He had been gently purged, and on his arrival was put to bed. Four grain doses of the sesquicarbonate of ammonia were administered every three hours, in a little water, with an extra dose occasionally during the day. Only tea and toast and water were permitted in the way of refreshment. In twenty-four hours the eruption was thrown out all over the body; on the next day it began to decline; and on the third day but little was visible. After it had disappeared, the medicine was taken every six hours for two days more, and then for a day or two thrice daily, suitable nourishment at the same time being given; in a week he was well; gentle purgatives to bring the secretions into a healthy state alone being required.

It may be said this was a simple case; but it is only given as an example of hundreds of others which it is contended have proved so on account of the treatment; and that with it most cases would have the same speedy termination, and with the like absence of any *unfavourable consequences*. I have indeed recently had a case in which matter formed in one of the glands of the neck, after the eruption had subsided; but I discovered, on inquiry, that the patient, who was a delicate youth, had incautiously been called out of his bed more than once, while the disorder was at its height, to see a dying relation. The exposure, although only to the atmosphere of an adjoining room, was sufficient to cause the mischief which followed. The suppuration, however, was not considerable, the discharge was healthy, the swelling was soon reduced, and he is now perfectly recovered.

And here a caution may be added against applying leeches to enlarged glands in these cases; the bites are apt to ulcerate, leaving ugly marks on the neck. The swellings for the most part can easily be dispersed; but if matter should form, simple poultices will usually suffice; if the subsequent induration is obstinate, gentle purgatives, with a little citrate of iron and quinine, may be given.

CASE NO. 2.-SCARLATINA.

This medicine can be administered with advantage at any of the earlier stages of the disorder, and also substituted with the best effect for any other treatment.

Scarlatina had broken out at a large school not far from London, and about a dozen boys were attacked. One of those most severely so, was a fine healthy lad about twelve years of age, one of a family in which two cases, of a severe and dangerous form, had been placed under my care and successfully treated. My attendance was therefore requested at the school, as soon as the friends of the boy were informed of his illness. He had required purging; and I found that a grain of calomel had very judiciously been placed on his tongue for that purpose, leaving him in a suitable state for the operation of the ammonia. The medical adviser at the school, whom I had the pleasure of meeting there, had never heard of this treatment; but, relying on my experience of its value, and on the results in the previous cases of the brother and sister of this boy, he consented to its immediate adoption. The skin was then the colour of a boiled lobster throughout, and the patient described his blood as being "all on fire"; there were the other usual symptoms, sore throat, a foul tongue, headache, pulse 120, with restlessness and depression, and more or less tendency to delirium. Five or six days had elapsed since the attack commenced ; but the eruption showed no tendency to decline, nor

had any of the symptoms abated. Five grains of the sesquicarbonate of ammonia were now given every three hours in a little water slightly sweetened, and the next day we found all the symptoms relieved. The boy had slept much; he was more composed ; the pulse was slower, and the redness of the skin already diminished. He afterwards improved daily, and in due time nourishing diet of course followed. So manifest was the improvement on the second day, and so completely was my new friend a convert to this mode of treatment, that he requested me to visit his own son, who was ill with the disorder, and had an enlargement of the submaxillary gland of the size of a turkey's egg. Even with this complication, the medicine took its usual effect in twenty-four hours; the child was able to speak more distinctly, and smiled at our approach; while the swelling was already reduced to a third of its former size, and soon it disappeared altogether. After this every patient in the school was cheerfully placed under the same treatment, and all rapidly got well, without a single case of enlarged gland, or any other unfavourable result. They were sent for several weeks to a country house belonging to the Principal of the school, by way of quarantine, previous to their return to

It may here be mentioned, that sometimes on the breaking up of a school from an outbreak of this disorder, there will be a few instances in which a taint of it may exist, although it has not been actually developed : headache, a quick pulse, with languor, loss of appetite, and an inflamed state of the tonsils, are the ordinary symptoms; and if these be neglected, or their cause mistaken, children will remain a long time ill. In such cases, moderate doses of the ammonia will restore health in about a fortnight.

their respective homes.

CASE NO. 3.-SCARLATINA.

The following case is an instance shewing that sometimes large doses are required. I was summoned during the past

year to attend a young lady, supposed to be labouring under inflammation of the bowels. There certainly were several of the symptoms of that disorder ; but, instead of bleeding, I saw reasons for pursuing a treatment which was chiefly of a cordial character; and in three days she was relieved for the time from pain, and left her bed, apparently well. In two days more, however, she was seized with dyspnœa to a fearful extent, which lasted for eighteen hours; from this she was also relieved without bleeding, and all seemed right again ; but, soon after, a restlessness and disturbance to a still more alarming extent succeeded : for three days and nights she had no sleep : her distortions of countenance were so great, that, from having been remarkable for her beauty before, she ceased to be at all so; while her naturally gentle and amiable disposition changed to one so exacting and imperious, as severely to try the patience of all about her. Although she did not lose her consciousness, it seemed as if the case would end in mania. On the ninth day from my first having seen her, I discovered on her chest the faintest possible pinkish blush; when the conviction flashed upon me that it was a case of scarlet fever. I at once commenced the administration of the ammonia, and gave it in unusual doses; for although medicines and treatment of a lowering kind had been avoided from the first, still I considered that her constitution required the greatest possible support in contending with this disorder. A solution containing seven grains to each two tablespoonfuls of water was therefore prepared, which quantity she took every hour for the space of twenty-four hours. The eruption then came fully out, exhibiting as perfect a specimen of the fever as could be witnessed. The same dose was next day repeated every other hour for the same space of time, when the eruption was declining fast. All cerebral disturbance ceased on the eruption becoming general; she slept profoundly; perspiration came on, and her pulse became less frequent. Thus, in forty-eight hours this patient had taken, with the best results, nearly three drachms of the sesquicarbonate of ammonia. The same

dose was taken thrice daily for two days more, although at the end of the third day, or, at least, at the beginning of the fourth, the eruption had completely disappeared-thus rapidly had it run its proper course. After this, a simple treatment, with nourishment, was adopted. The health of the patient afterwards improved rather than deteriorated, as the health is so apt to do after an attack of scarlatina, when subjected to the ordinary treatment. With the exception of the usual peeling of the skin, no other indication of her having suffered from the disorder followed this most trying case. She took some bitter infusion, with a little sal volatile, for a few days, together with gentle aperients of rhubarb and magnesia. The case occupied, on the whole, thirty-five days, for the last ten of which the citrate of iron and quinine was taken with a few grains of rhubarb daily. That the case was unquestionably one of scarlatina appeared from the fact that, during the time of the peeling of the skin, a child entered the patient's room, and caught that disease.

I think this case is instructive, as shewing how, when nature's efforts to throw out the poison on the skin had failed, the peritoneum was the membrane first affected, and next the membrane lining the lungs; the latter would seem to have been so from the extreme difficulty of breathing, which, indeed, was more distressing than I ever remember to have seen, except in patients near death. The third irregular effort fixed the poison on a still more dangerous site, the membranes of the brain. Now, if upon either of these three occasions, violent purgatives, or the lancet, had been resorted to, no one, I think, will doubt that the powers of nature would have been exhausted; the eruption would not have been thrown out; and death would to a certainty have ensued.

CASE NO. 4.-MEASLES.

Four boys, of the ages of fifteen, eleven, nine, and five, respectively, were seized with this malady within a few days

of each other. A mild dose of jalap was given to each, and a simple solution of the ammonia was prepared, containing five grains to each tablespoonful of water, with a like quantity of loaf sugar. Of this, the two elder each took a tablespoonful an hour after the jalap, repeating the dose every three hours : the two younger in a less proportion, viz., a dessertspoonful. None of them were reluctant to swallow their medicine, as it was diluted with an equal quantity of cold water; and they had as much good toast and water as they wished to drink. The hoarse, dry, and hard cough ceased in a few hours, and the eruption appeared : on the second day it was well out ; on the third it began to decline; and on the fourth it had entirely disappeared. For the next two days the medicine was taken less frequently,-about every six or eight hours. As it was cold spring weather, fires had been kept up in their bedrooms day and night; and, with the aid of beef tea, veal broth, and milk with isinglass, they all rapidly convalesced. No other medicine was taken, and none suffered from any of those consequences which sometimes follow an attack of measles.

Another of the children in this family had the disease on the Continent, and was differently treated; and though, perhaps, the healthiest of them all, suffered for two years with feeble health: abscesses formed in the scalp, and there was ulceration of the cornea in one eye, attended with an effusion of pus between its laminæ.

Every case of measles that I have known, when treated with ammonia, has followed as nearly as possible the course above described; and I may add that, for the space of thirty years, I cannot call to mind a single case so treated in which I have found the results at all less favourable.

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