

unfrequently omitted from works on *Materia Medica* altogether; in those in which it is included, the account is for the most part somewhat meagre. A preparation, consisting of a solution of hydrochloric ether in rectified spirit, was introduced into the Edinburgh *Pharmacopæia* of 1735, under the name of *spiritus solis dulcis*. It does not appear to have been much used. In 1804, Gehler published a dissertation on the subject.* It was soon omitted from the Edinburgh *Pharmacopæia*, and at the present time is not recognised by either of the British Colleges, though it retains a place in one or two foreign pharmacopeias.

As its name denotes, it is a member of that interesting class, the compound ethers. For reasons the discussion of which would occupy too much space, and answer no useful purpose, I prefer adopting the theory to which Professor Daniell† has lent his sanction, and regard the hydrocarbon as being composed of four equivalents of carbon and five of hydrogen. Adopting for this hypothetical radicle the name of ethyle, regarding ether as an oxide of ethyle, and alcohol as an hydrated oxide of the same radicle, the following, then, would be the formulas:—



This radicle was for a long time regarded as purely imaginary, but it is said to have been isolated by Mr. E. Frankland,‡ who obtained it by the action at high temperatures of zinc upon iodide of ethyle. He describes it as a colourless and inflammable gas, of specific gravity 2.0039, incondensable at zero, but as being converted, under a pressure of 2.25 atmospheres at 37.5°, into a colourless, transparent, and mobile liquid. Ethyle is not acted on by fuming sulphuric acid, scarcely by nitric and chromic acid. In darkness, chlorine does not unite with ethyle, but, in diffused daylight, they unite, contract in volume, and give rise to a colourless liquid.

The explanation of the composition of the compound ethers given by Professor Fownes§ will render the further application of this theory sufficiently clear. He compares them with the ordinary salts, replacing the metal by the radicle ethyle, which substance may then be supposed to form haloid salts. By combining directly with chlorine, iodine, bromine, etc., etc., with oxygen acids thus continuing the series, we have—



The chloride of ethyle is directed|| to be prepared by adding one part of muriatic acid to three of rectified spirit; digesting for some days (at least seven), and then distilling in a water bath. The product is an alcoholic solution of the chloride of ethyle. It may also be formed by the action of vitriol on alcohol and dry common salt, heat being applied, and in various other methods; but I think the former will be found preferable by the amateur. In conducting the process, care should be taken not to push it too far. The theory of the process is as follows:—One equivalent of $\text{HCl}=37$ acts upon one equivalent of alcohol, $\text{C}^4\text{H}^5\text{O} + \text{HO} = 46$; we then obtain one equivalent of chloride of ethyle, $\text{C}^4\text{H}^5\text{Cl}=65$, and two of water, $2\text{HO}=18$.

The product of the distillation is a light, colourless, and very volatile fluid, of penetrating odour, very similar to that of chloroform, and of sweetish taste. The presence of free chlorine will be at once detected by nitrate of silver and the acid reaction; if pure, it does not affect litmus paper; it is resolved into chloride of potassium and alcohol by caustic potass; by the action of chlorine upon it, the following compounds are formed:—¶

Monochlorinated ether	·	·	$\text{C}^4\text{H}^4\text{Cl}^2$
Biochlorinated ether	·	·	$\text{C}^4\text{H}^3\text{Cl}^3$
Trichlorinated ether	·	·	$\text{C}^4\text{H}^2\text{Cl}^4$
Quadrachlorinated ether	·	·	$\text{C}^4\text{H}\text{Cl}^5$
Perchloride of carbon	·	·	C^4Cl^6

Alcoholic solutions of these, it is not improbable, may, at some future time, be found of great value in medicine. On reference to the table above, it will be seen that the change is effected at once by two atoms of chlorine, one of which seizes an atom of hydrogen, forming with it hydrochloric acid, the second entering the remaining compound.

My communication has unconsciously extended to such a length, that I feel it necessary to close it for a time. I will shortly return to the subject.

Bury St. Edmund's, Suffolk, August 17th, 1854.

TREATMENT OF HOOPING-COUGH.

By JAMES GEORGE DAVEY, M.D.

In the review of Dr. GIBB'S excellent monograph on Hooping-Cough, in the ASSOCIATION MEDICAL JOURNAL for August, I have read the following remarks, in which I entirely concur:—"The doctrine of the toxæmic origin of this" [i.e., hooping-cough] "and other diseases is almost, if not solely, founded on analogy—on the resemblance of the symptoms of toxæmic diseases to those produced by the injection of visible and palpable poisons." That "renewed endeavours" are required "to place it" [the doctrine] "on some firmer footing", I, like youself, feel confident.

Humoral pathology is doubtless becoming a fashion in this day. It is convenient to locate the origin of disease, of abstruse and abnormal action, in the blood; it saves trouble, and excuses further investigation. However, my object in writing is to state that the nitric acid mixtures advised by Dr. Gibb in his book may be taken with "impunity", if not with advantage. The reviewer of Dr. Gibb's book says:—"We feel confident that the acid could not be taken with impunity in so concentrated a form" as that recommended; and "there must be typographical errors in these formulæ". Feeling anxious to adhere strictly to the advice of Dr. Gibb, and give the nitric acid every fair chance, I sent the book to my druggists, with instructions that the mixture, the formula for which is given at the top of page 342, should be made up to the letter, and with the closest accuracy as to details. I confess to have had, at the same time, some doubts concerning the proportions of the several ingredients composing the vehicle for the acid.

It will be seen, on referring to the three prescriptions at page 342, that the first one at the top of the page is neither a six ounce nor an eight ounce mixture, but gives a total of six ounces and three drachms; that the second amounts in quantity to five ounces and two drachms; whilst the third prescription is for an eight ounce mixture. Professing to contain an increased dose of the nitric acid, it contains, in point of fact, a smaller quantity; the compounded vehicle for the same being over six ounces, instead of respectively four ounces and a half and three ounces and three drachms. (See prescriptions Nos. 1 and 2.) Would it not be well for Dr. Gibb to favour the profession with an explanation of the above facts. That there are "typographical errors" at page 342 of the book is, to my mind, tolerably clear, although the "formulæ" may be employed with all "impunity".

I have had, since April last to even this present time, a sad and painful experience of hooping-cough in my own family, so many as six of my children having suffered from this distressing malady. No sooner saw Dr. Gibb's work advertised than I obtained it, with the hope of realising in members of my own family the "successful treatment by a new remedy"; but I am sorry to add that, after a persistence in the use of the nitric acid for some ten or twelve days, and precisely as recommended by Dr. Gibb,

* Journal. Chemical Society, vol. ii, p. 286.

† Daniell's Introduction to Chemical Philosophy, page 647. London: 1813.

‡ Thompson's System of Chemistry of Organic Bodies, vol. ii, p. 610. Seventh edition. London: 1851.

§ Fownes' Chemistry, p. 398. London: 1851.

¶ Pereira, p. 387. London: 1842.

|| Graham's Chemistry, p. 718. London: 1842.

I did not find that even one of the six children afflicted had been relieved in any degree. I was therefore driven to seek other therapeutical means.

It may not be out of place to mention here, that, of the several "specifics" I have been compelled to resort to, I am disposed to attach the most value to alum, which I gave in the ordinary manner, in water well sweetened with the syrup of red poppy, and afterwards in conjunction with diluted sulphuric acid. I think the efficacy of the alum is much promoted when given with this acid. Two of my children have recovered under the use of this remedy, two more when taking the carbonate of potash and cochineal in simple syrup, and two remain under treatment. These have resisted not only the alum, potash, nitric acid, quinine, but pretty nearly everything else I can find in Dr. Gibb's excellent volume. Of course the attendant circumstances of the disorder in each case—its complications and so on—have received all due attention at my hands. As a rule, it may be admitted that free purgation and emetics of ipecacuan are almost indispensable, from time to time, during the course of severe and protracted hooping-cough, whatever additional specific treatment may be adopted for its relief and cure.

Northwoods, Bristol, August 14th, 1854.

A CASE OF HÆMOPTYSIS TREATED BY GALLIC ACID.

By WILLIAM BAYES, M.D., Physician to the Brighton Dispensary.

[Read before the South Eastern Branch of the Association,
June 21, 1854.]

On May 22nd, 1854, at one o'clock, A.M., a gentleman, aged 66, of spare habit and nervous temperament, was seized suddenly with hæmoptysis of a bright arterial colour, to the amount of about three ounces. There was no appearance of pus mixed with the blood, nor was it wholly mixed with air, though here and there it was frothy. I saw the patient within half an hour, and found him in a very nervous and excited condition, expectorating at short intervals a bright arterial-looking sputum, which was also frothy. The pulse was 110, full, and bounding: the general expression was agitated and haggard. The exact seat of the lesion I did not then wait to ascertain, having satisfied myself (by placing the stethoscope over each bronchus) that it proceeded from the right side, and being convinced, from collateral evidence, that it arose from the bronchial membrane.

I immediately made a saturated solution of gallic acid in hot water, to which I added a little brandy (a drachm of gallic acid in eight ounces of water and two drachms of brandy); and of this mixture I administered an ounce every ten minutes for three doses in succession. This I followed by two other doses, at intervals of a quarter of an hour. The hæmoptysis appeared to have ceased after the third dose.

At twenty minutes to three, the patient expectorated about an ounce of dark coloured and half coagulated blood, after which I gave two other doses at intervals of a quarter of an hour, and a third half an hour later. During the hour succeeding the last of these doses, a perfectly black inky looking sputum was expectorated. The pulse was thin and wiry, about 95 beats in the minute. There was a sense of constriction in the forehead, and a buzzing sound in the ears. Perceiving from these signs that he was now completely under the influence of the remedy, I left the patient with full confidence, ordering him to continue the gallic acid in similar doses every hour. His breathing was now perfectly easy, and he was less distressed.

At 7 A.M. I saw him again. He had slept for two hours, and was free from hæmoptysis.

At 9 A.M. he expectorated a small clot, about half an inch in length, and of the diameter of the small end of a

tobacco-pipe. On this were seven bright-looking specks; otherwise it was tough and very dark. The pulse was 90, steady, without any jerk or other irregularity in its rhythm.

During the remainder of the day, two firm and dark clots were expectorated.

May 23rd. He passed a good night, sleeping throughout. There was one hard clot expectorated this morning. Pulse 80.

May 26th. He remained perfectly well; his cough had almost left him. There had been no hæmoptysis. The bowels were rather confined, and I gave him a few grains of sulphate of magnesia.

May 27th. There had been very little urine passed since the attack. I ordered him to drink freely of barley water. He had also great dulness of hearing, which is most unusual with him. The gallic acid was continued in gradually diminished doses (two grains), and in combination with phosphate of soda (ten grains), three times a day.

From this time he remained perfectly well, and has been taking still smaller doses of his medicine, with a teaspoonful of cod-liver oil, twice a day.

REMARKS. The previous history of the case was as follows:—He spent twenty-seven years of his life in India, and since that period has resided twenty-four years in England and Scotland. Until 1851 he had enjoyed admirable health; but during that winter, in Leamington, he was seized with bronchitis, followed by hæmoptysis. This reduced him so much, that he was for four months confined to the house. He subsequently had an attack of subacute rheumatism. In the autumn of 1852, he had a mild attack of dysentery, accompanied by slight hæmorrhage. This gave way readily. In the autumn of last year, he had a second attack of hæmoptysis, when, from the firmness and resistance of his pulse, his medical man bled him, and gave him digitalis. This treatment reduced him much, and a long and tedious convalescence, of nearly six months' duration, followed.

The reminiscence of the extreme prostration following his former attacks added not a little to the depression of spirits and unusual agitation of the patient. Remembering the frequent recurrence of slight hæmoptysis which had accompanied his first two illnesses, he was in nervous anticipation for the first four days of a return; thus I had not merely a diseased state of body, but also the nervous fears of the patient, to assuage. The full confidence in the powers of the gallic acid, which frequent experience of its benefits had given me, became, under these circumstances, no inconsiderable element of cure, since it enabled me to assure the patient most positively of his perfect safety.

There are a few points of interest in this case to which I will very briefly advert:—

1. There was no evidence that any fresh exhalation of blood occurred after the appearance of those signs which denoted the *saturation* of the system with the gallic acid.

2. These signs became fully established *when the patient had taken about a drachm of the remedy*, and when nearly two hours had elapsed since its first exhibition. In both these particulars, there was a perfect coincidence with what has occurred to me in other cases.

3. No poisonous effects followed as sequelæ. A rapid convalescence has succeeded to a safe cure; and if we except the sense of constriction in the forehead and temporary deafness (both which gave way on diminishing the frequency of the dose), the patient had not even an unpleasant symptom. He could have eaten heartily, had I allowed him: he had no thirst, and slept soundly. The small quantity of urine passed, I believe, was mainly owing to the very small proportion of fluid taken; and the secretion became well established when the patient drank freely of the barley water.

4. The constipated state of the bowels was certainly not owing to the gallic acid; it was the habitual condition of the patient, who for years has been accustomed to slightly aperients. A few ten grain doses of sulphate of magnesia removed this state.