quinine and sulphuric acid, with tincture of kino, and a drop of laudanum three times a day; and sinapisms to the abdomen, with the same diet, &c.

On the 8th, the child was decidedly better, and had become so cross as hardly to suffer me to enter the house. The stools were much more natural, and fewer in number; while the eczema ani had quite disappeared.

On the 14th and 17th, I found her steadily improving, with a good appetite, and healthy evacuations.

On the 19th, she appeared to droop a little, having been doing well till then, contrary to the expectations of her parents.

On the 20th, I found her worse, and was informed that on the afternoon of the previous day, a small red spot, about the size of a sixpence, had appeared under her chin, and had rapidly spread until it assumed the formidable appearance it now presented. There was no swelling nor hardness, the redness being well-defined, and terminating abruptly in the healthy skin. It was quite continuous, and extended over the fore part of the neck, the chin, and the lower part of both cheeks. The cuticle was entirely separated from the cutis, and the serum distended it at the dependent portions. When the cuticle was removed there was a copious clear discharge from a red and angry surface. It looked precisely as if a kettle of boiling water had been poured over it, or a large blister had been applied to the part. The child lay on her back, dreading motion, with the extremities cold, and would take nothing but milk, which I allowed plentifully, and directed finely-powered starch to be dusted on the neck.

On the 21st, I found matters worse, the disease spreading over the neck, and continuing to present the same appearances. There was a red spot on the nose, and also on one of her fingers; the stools had again become unnatural and slimy. I directed a little port wine to be given, and as much milk as she chose to drink.

On the 22nd, it had spread all over the upper part of the back, and over the left scapula, where there were a few blackish spots like gangrene, and the stench was very unpleasant. The redness appeared to extend in the first instance, serum being then uniformly and rapidly effused under the cuticle. There was no heat nor swelling of the affected parts; the bowels were more natural.

She continued perfectly conscious to the last, and her death on the 23rd was hailed by her parents as a deliverance from suffering. The emaciation was extreme, and the body looked exactly as if the child had been dipped in scalding water, the cuticle being entirely separated from the nape of the neck to the nates. The appearances and smell which I had thought to indicate gangrene, were, contrary to my expectations, gone.

I felt extremely at a loss what diagnosis to make of this disease. To erysipelas it bore no resemblance, particularly in that the entire part affected continued discharging serum to the last. And I may add, that two practitioners, of extensive experience, to whom I showed the case, were equally unable to assist me in forming an opinion.

DISCOVERY OF A NEW ANÆSTHETIC AGENT MORE EFFICIENT THAN SULPHURIC ÆTHER.

By J. Y. SIMPSON, M.D., Professor of Midwifery in the University of Edinburgh, Physician Accoucheur to Her Majesty in Scotland, &c.

At the first Winter Meeting of the Medico-Chirurgical Society of Edinburgh, held on the 10th of November last, I had an opportunity of directing the attention of the members to a new agent which I had been using for some time previously, for the purpose of producing insensibility to pain in surgical and obstetric practice.

This new anæsthetic agent is chloroform, chloroformyle, or perchloride of formyle.* Its composition is expressed by the chemical formula, C_2HCl_3 . It can be procured by various processes, as by making milk of lime or an aqueous solution of caustic alkali act upon chloral; by distilling alcohol, pyroxylic spirit, or acetone with chloride of lime; by leading a stream of chlorine gas into a solution of caustic potash in spirit of wine, &c. The resulting chloroform obtained by these processes is a heavy, clear, transparent liquid, with a specific gravity as high as 1.480. It is not inflammable. It evaporates readily and boils at 141° . It possesses an agreeable, fragrant, fruit-like odour, and a saccharine pleasant taste.

As an inhaled anæsthetic agent it possesses, I believe, all the advantages of sulphuric æther, without its principal disadvantages:—

1. A greatly less quantity of chloroform than of æther is requisite to produce the anæsthetic effect; usually from a hundred to a hundred and twenty drops of chloroform only, being sufficient, and with some patients much less. I have seen a strong person rendered completely insensible by six or seven inspirations of thirty drops only of the liquid.

2. Its action is much more rapid and complete, and generally more persistent. I have almost always seen from ten to twenty inspirations suffice; sometimes fewer. Hence the time of the surgeon is saved; and that preliminary stage of excitement, which pertains to all narcotizing agents, being curtailed or indeed practically abolished, the patient has not the same degree of tendency to exhilaration and talking.

3. Most of those who know from previous experience the sensations produced by æther-inhalation, and who have subsequently breathed the chloroform, have strongly declared the inhalation and influence of

* In making a variety of experiments upon the inhalation of different volatile chemical liquids, I have, in addition to perchloride of formyle, breathed chloride of hydrocarbon, acetone, nitrate of oxide of ethyle, benzine, the vapour of iodoform, &c. I may probably take another opportunity of describing the results. It is perhaps worthy of remark, that in performing his experiments upon inhalation, Sir Humphrey Davy confined his attention to the inspiration of gasses, and does not seem to have breathed the vapour of any volatile liquids.

chloroform to be far more agreeable and pleasant than those of æther.

4. I believe that, considering the small quantity requisite, as compared with æther, the use of chloroform will be less expensive than that of æther, more especially as there is every prospect that the means of forming it may be simplified and cheapened.

5. Its perfume is not unpleasant, but the reverse; and the odour of it does not remain for any length of time obstinately attached to the clothes of the attendant, or exhaling in a disagreeable form from the lungs of the patient, as so generally happens with sulphuric æther.

6. Being required in much less quantity, it is much more portable and transmissible than sulphuric æther.

7. No special kind of inhaler or instrument is necessary for its exhibition. A little of the liquid diffused upon the interior of a hollow-shaped sponge, or a pocket handkerchief, or a piece of linen or paper, and held over the mouth and nostrils, so as to be fully inhaled, generally suffices in about a minute or two to produce the desired effect.

I have had an opportunity of exhibiting chloroform with perfect success in various severe surgical operations, (removal of tumours, of necrosed bone, amputations, &c., &c.) and in tooth-drawing,* opening abscesses, &c., &c.; for annulling the pain of dysmenorrhœa and of neuralgia; in two or three cases where I was using deep and otherwise very painful galvano-puncture for the treatment of ovarian dropsy; and in removing a very large fibrous tumour from the posterior wall of the uterus by enucleation, &c.†

I have employed it also in obstetric practice with entire success. The lady to whom it was first exhibited during parturition, had been previously delivered in the country by perforation of the head of the infant, after a labour of three days' duration. In this, her second confinement, pains supervened a fortnight before the full time. Three hours and a half after they commenced, and ere the dilatation of the os uteri was completed, I placed her under the influence of the chloroform, by moistening, with half a teaspoonful of the liquid, a pocket-handkerchief, rolled up into a funnel-shape, and with the broad or open end of the

funnel placed over her mouth and nostrils. In consequence of the evaporation of the fluid, it was once more renewed in about ten or twelve minutes. The child was expelled in about twenty-five minutes after the inhalation was begun; the mother subsequently remained longer soporose than commonly happens after æther. The squalling of the child did not, as usual, rouse her, and some minutes elapsed after the placenta was expelled, and after the child was removed by the nurse into another room, before the patient awoke. She then turned round and observed to me that she had "enjoyed a very comfortable sleep, and indeed required it, as she was so tired,‡ but would now be more able for the work before her." I evaded entering into conversation with her, believing, as I do, that the most complete possible quietude forms one of the principal secrets for the successful employment of either æther or chloroform. In a little time she again remarked that she was afraid her "sleep had stopped the pains." Shortly afterwards her infant was brought in by the nurse from the adjoining room, and it was a matter of no small difficulty to convince the astonished mother that the labour was entirely over, and that the child presented to her was really her "own living baby."

Perhaps I may be excused from adding, that since publishing on the subject of æther-inhalation in midwifery, seven or eight months ago,§ and then for the first time directing the attention of the medical profession to its great use and importance in natural and morbid parturition, I have employed it, with few and rare exceptions, in every case of labour that I have attended, and with the most delightful results, and I have no doubt whatever that some years hence the practice will be general. Obstetricians may oppose it, but I believe our patients themselves will force the use of it upon the profession.|| I have never had the pleasure of watching over a series of better and more rapid recoveries, nor once witnessed any disagreeable result follow to either mother or child, whilst I have now seen an immense amount of maternal pain and agony saved by its employment; and I most conscientiously believe, that the proud mission of the physician is distinctly twofold—namely, to alleviate human suffering, as well as to preserve human life.

* A young dentist, who has himself had two teeth extracted lately, one under the influence of æther, and the other under the influence of chloroform, writes me the following statement of the results:—About six months ago I had an upper molar tooth extracted whilst under the influence of æther, by Mr. Imlach. The inhalation was continued for several minutes before I presented the usual appearance of complete ætherization. The tooth was then extracted; and although I did not feel the least pain, yet I was conscious of the operation being performed, and was quite aware when the crash took place. Some days ago I required another molar extracted on account of tooth-ache, and this operation was again performed by the same gentleman. I inhaled the vapour of chloroform, half a drachm being poured upon a handkerchief for that purpose, and held to my nose and mouth. Insensibility took place in a few seconds; but I was so completely dead this time, that I was not in the very slightest degree aware of anything that took

place; the subsequent stupifying effects of the chloroform went off more rapidly than those of the æther; and I was perfectly well and able again for my work in a few minutes."

† I have now exhibited the chloroform to a large number of individuals, and in not one has the slightest bad effect of any kind resulted.

‡ In consequence of extreme anxiety at the unfortunate result of her previous confinement, she had slept little or none for one or two nights preceding the commencement of her present accouchement.

§ See "Monthly Journal of Medical Science," for Febr., p. 639; for March, p. 718, and 721, &c.

|| I am told that the London physicians, with two or three exceptions only, have never yet employed æther-inhalation in midwifery practice. Three weeks ago I was informed in a letter from Professor Montgomery, of Dublin, that he believed that in that city, up to that date, it had not been used in a single case of labour.

In some remarks which I published in the *Monthly Journal of Medical Science*, for September, 1847, relative to the conditions for insuring successful ætherization in surgery, I took occasion to insist upon the three following leading points:—"First, the patient ought to be left, as far as possible, in a state of absolute quietude and freedom from mental excitement, both during the induction of ætherization and during his recovery from it. All talking and all questioning should be strictly prohibited. In this way any tendency to excitement is eschewed, and the proper effect of the æther-inhalation more speedily and certainly induced. Secondly, with the same view, the primary stage of exhilaration should be entirely avoided, or at least reduced to the shortest possible limit, by impregnating the respired air as fully with the æther-vapour as the patient can bear, and by allowing it to pass into the lungs both by the mouth and nostrils, so as rapidly and at once to induce its complete and anæsthetic effect, * * * a very common but certainly a very unpardonable error being to exhibit an imperfect and exciting, instead of a perfect and narcotizing, dose of the vapour. Many of the alleged failures and misadventures are doubtless entirely attributable to the neglect of this simple rule,—not the principle of ætherization, but the mode of putting it in practice being altogether to blame. But, *thirdly*, whatever means or mode of ætherization is adopted, the most important of the conditions required for procuring a satisfactory and successful result from its employment in surgery, consists in obstinately determining to avoid the commencement of the operation itself, and never venturing to apply the knife until the patient is under the full influence of the æther-vapour, and *thoroughly and indubitably soporized* by it."

In fulfilling all these indications, the employment of chloroform evidently offers great and decided advantages in rapidity, facility, and efficiency over the employment of æther. When used for surgical purposes, I would advise it to be given upon a handkerchief, gathered up into a cup-like form in the hand of the exhibitor, and the open end of the cup placed over the nose and mouth of the patient; for the first inspiration or two it should be held at the distance of half an inch or so from the face, and then more and more closely applied to it. To ensure a full and perfect anæsthetic effect,—more especially when the operation is to be severe,—a teaspoonful or two of the chloroform should at once be placed upon the hollow of the handkerchief, and immediately held to the face of the patient. Generally a state of snoring sleep very speedily supervenes, and when it does so, it is a perfect test of the superinduction of complete insensibility. But many patients are perfectly anæsthetic without this symptom.

As illustrations of the influence of this new anæsthetic agent, I will select and append notes of two operations performed with it on Friday last by

Professor Miller, the first in the Royal Infirmary,* the other in private practice. The notes and remarks are in Mr. Miller's own words.

CASE I.

"A boy, four or five years old, with necrosis of one of the bones of the fore-arm. Could speak nothing but Gaelic. No means, consequently, of explaining to him what he was required to do. On holding a handkerchief, on which some chloroform had been sprinkled, to his face, he became frightened, and wrestled to be away. He was held gently, however, by Dr. Simpson, and obliged to inhale. After a few inspirations he ceased to cry or move, and fell into a sound snoring sleep. A deep incision was now made down to the diseased bone; and, by the use of the forceps, nearly the whole of the radius, in the state of sequestrum, was extracted. During this operation, and the subsequent examination of the wound by the finger, not the slightest evidence of the suffering of pain was given. He still slept on soundly, and was carried back to his ward in that state. Half an hour afterwards he was found in bed, like a child newly awakened from a refreshing sleep, with a clear merry eye, and placid expression of countenance, wholly unlike what is found to obtain after ordinary etherization. On being questioned by a Gaelic interpreter, (who was found among the students,) he stated that he had never felt any pain, and that he felt none now. On being shown his wounded arm, he looked much surprised, but neither cried nor otherwise expressed the slightest alarm."

CASE II.

"A young lady wished to have a tumour (encysted,) dissected out from beneath the angle of the jaw. The chloroform was used in small quantity, sprinkled upon a common operation sponge. In considerably less than a minute she was sound asleep, sitting easily in a chair, with her eyes shut, and with her ordinary expression of countenance. The tumour was extirpated, and a stitch inserted, without any pain having been either shown or felt. Her sensations, throughout, as she subsequently stated, had been of the most pleasing nature; and her manageableness during the operation was as perfect as if she had been a wax doll or a lay figure.

"No sickness, vomiting, headache, salivation, uneasiness of chest, in either of the cases. Once or twice a tickling cough took place in the first breathings."

My assistant, Dr. Duncan, who exhibited the chloroform to this last patient, informs me that about a drachm of the liquid was used.

* Professor Dumas, of Paris, Mr. Milne Edwards, Dr. Christison, Sir George Ballingall, and a large collection of professional gentlemen and students witnessed this operation, and two others performed with similar success, by Professor Miller and Dr. Duncan.

Edinburgh, November 15, 1847.