CIRCULAR.

Fifth Edition.....Voice from Europe.

MORTON'S LETHEON.

W. G. Morton,
Boston, Ms.

Washington, Jan. 5, 1847.

Dear Sir, — Yours of the 26th ult. was received in due course of Mail, and in answer I have to say that at the time your application for preventing pain in Surgical Operations was under consideration in the Patent Office, Mr. Eddy consulted me on the novelty and patentability of your discovery. I then examined the subject carefully and gave it as my decided and candid opinion that it was novel, and the legitimate subject of a Patent; and this opinion has only been strengthened by farther reflection. Under the law any new and useful art is made the subject of a Patent. This covers any discovery in modes of procedure having a useful object in view and susceptible of being so defined as to instruct others to apply or make use of the mode of procedure. There can be no question that your discovery comes under this provision of law. It is a new mode of procedure definite in its character, and which may be taught to others, and which therefore comes under the denomination of an art as defined by the ablest Judges in Europe and in this country.

Before your discovery many attempts had been made to render persons insensible to pain, preparatory to surgical operations, by introducing in the stomach intoxicating substances; but this mode of procedure was unsuccessful. You then discovered that by introducing into the lungs, the vapour of certain substances, a different effect was produced, from that of intoxication produced by the introduction of substances in the stomach, and that this effect was such as to render the patient insensible so pain, hence the use of this discovery, in connection with surgical operations is an improvement in the art of surgery. A discovery in the abstract is not the subject of letters patent; as the discovery of the elastic force of steam; of the pressure of the atmosphere; of the expansion of metals under the influence of caloric, &c.; for this is the mere finding out of something existing before. The mere discovery in these cases had no direct useful application in the arts or affairs of life, and could not be appropriated to the sole use of the discoverers; but the moment any one of them could be applied to a useful practical purpose, then the party so applying it produces a useful result; and such application originating in the mind of the discoverer, or inventor, is no longer a discovery in the abstract, of something before existing, but a new creation, which having its origin in the mind of the discoverer, and not existing before, (for it is an artificial condition,) is, in view of the law, the property of the one who conceived it. There can be no question that the one who first conceived the idea of intoxicating a patient, preparatory to a surgical operation, would have been entitled to a patent for his new mode of procedure; how then does your plan differ from his? You conceived the idea that by introducing the vapor of certain substances into the lungs, a different condition of the nervous condition was produced, namely, a state of insensibility to pain; and by connecting this mode of producing this state of insensibility to pain with surgical operations, you have produced a new and useful result, highly important in the art of surgery; the result of a new conception originating in your mind, and legitimately the subject of letters-patent. Your invention is the connection of the two processes or modes of operation.

Before the date of Watt's invention of the steam-engine, the expansive force of steam had been applied to a piston in a cylinder, and it was well known that by the application of cold water, steam could be condensed in a vessel to effect a vacuum; and all that immortalized that great man, was the union of these two ideas, or modes of procedure: applying the force of steam in one vessel, and condensing it in another. In a legal point of view, your invention does not differ from this, which has been admitted to be patentable by all the legal knowledge of the world, and the universal consent of civilized man.

I am, Sir, yours, very respectfully,
CHAS. M. KELLER, for
KELLER & GREENOUGH.

I concur in the foregoing opinion, entirely; entertaining no doubt that Dr. Morton's discovery is a new and useful art, and as such the proper subject of a patent.

DANIEL WEBSTER.

Feb. 19, 1847.

CIRCULAR.

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MORTON'S LETHĒON.

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MORTON'S LETHEON.

Dear Sir:

You are supposed to take sufficient interest in the subject of which this circular treats to admit of an apology for taking the liberty of transmitting the following extracts from the communication of Dr. H. J. Bigelow, one of the surgeons of the Massachusetts General Hospital, in this city, read before the Boston Society of Medical Improvement, Nov. 9th, 1846, and before the American Academy of Arts and Sciences, on the 3d of the same month.

You will observe, that the experiments referred to by Dr. B., were among the earliest to which spectators were admitted; and, although striking and conclusive in themselves, they are, if possible, more than equalled by the numerous operations daily made, under the use of the discovery, in this city, as well as in other places where I have granted licenses for the employment of it.

"It has long been an important problem in medical science to devise some method of mitigating the pain of surgical operations. An efficient agent for this purpose has at length been discovered. A patient has been rendered completely insensible during an amputation of the thigh, regaining consciousness after a short interval. Other severe operations have been performed without the knowledge of the patients. So remarkable an occurrence will, it is believed, render the following details relating to the history and character of the process, not uninteresting.

"On the 16th of Oct., 1846, an operation was performed at the hospital, upon a patient who had inhaled a preparation administered by Dr. Morton, a dentist of this city, with the alleged intention of producing insensibility to pain. Dr. Morton was understood to have extracted teeth under similar circumstances, without the knowledge of the patient. The present operation was performed by Dr. Warren, and though comparatively slight, involved an incision near the lower jaw of some inches in extent. During the operation, the patient muttered, as in a semi-conscious state, and afterwards stated that the pain was considerable, though mitigated; in his own words, as though the skin had been scratched with a hoe. There was, probably, in this instance, some defect in the process of inhalation, for on the following day the vapor was administered to another patient with complete success. A fatty tumor of considerable size was removed, by Dr. Hayward, from the arm of a woman near the deltoid muscle. The opera-

tion lasted four or five minutes, during which the patient betrayed occasional marks of uneasiness; but upon subsequently regaining her consciousness, professed not only to have felt no pain, but to have been insensible to surrounding objects, to have known nothing of the operation, being only uneasy about a child left at home. No doubt, I think, existed, in the minds of those who saw this operation, that the unconsciousness was real; nor could the imagination be accused of any share in the production of these remarkable phenomena. * * * *

The Remarks of the Patients. — "A boy of 16, of medium stature and strength, was seated in the chair. The first few inhalations occasioned a quick cough, which afterwards subsided; at the end of eight minutes the head fell back, and the arms dropped, but owing to some resistance in opening the mouth, the tooth could not be reached before he awoke. He again inhaled for two minutes, and slept three minutes, during which time the tooth, an inferior molar, was extracted. At the moment of extraction, the features assumed an expression of pain, and the hand was raised. Upon coming to himself he said he had had a "first rate dream — very quiet," he said, "and had dreamed of Napoleon — had not the slightest consciousness of pain — the time had seemed long:" and he left the chair, feeling no uneasiness of any kind, and evidently in a high state of admiration.

"A girl of 16 immediately occupied the chair. After coughing a little, she inhaled during three minutes, and fell asleep, when a molar tooth was extracted, after which she continued to slumber tranquilly during three minutes more. At the moment when force was applied she flinched and frowned, raising her hand to her mouth, but said she had been dreaming a pleasant dream and knew nothing of the operation.

"A stout boy of 12, at the first inspiration coughed considerably, and required a good deal of encouragement to induce him to go on. At the end of three minutes from the first fair inhalation, the muscles were relaxed and the pupil dilated. During the attempt to force open the mouth he recovered his consciousness, and again inhaled during two minutes, and in the ensuing one minute two teeth were extracted, the patient seeming somewhat conscious, but upon actually awaking he declared "it was the best fun he ever saw," avowed his intention to come there again, and insisted upon having another tooth extracted upon the spot. * * *

"The next patient was a healthy-looking, middle-aged woman, who inhaled the vapor for four minutes; in the course of the next two minutes, a back tooth was extracted, and the patient continued smiling in her sleep for three minutes more. Pulse 120, not affected at the moment of the operation, but smaller during sleep. Upon coming to herself, she exclaimed that "it was beautiful — she dreamed of being at home — it seemed as if she had been gone a month." These cases which occurred successively in

about an hour, at the room of Dr. Morton, are fair examples of the average results produced by the inhalation of the vapor, and will convey an idea of the feelings and expressions of many of the patients subjected to the process. Dr. Morton states that, in upwards of two hundred patients, similar effects have been produced. The inhalation, after the first irritation has subsided, is easy, and produces a complete unconsciousness at the expiration of a period varying from two to five or six, sometimes eight minutes; its duration varying from two to five minutes; during which the patient is completely insensible to the ordinary tests of pain. The pupils in the cases I have observed have been generally dilated; but with allowance for excitement and other disturbing influences, the pulse is not affected, at least in frequency; the patient remains in a calm and tranquil slumber, and wakes with a pleasurable feeling. * * * *

"Two recent cases serve to confirm, and one I think to decide, the great utility of this process. On Saturday, the 7th Nov., at the Mass. General Hospital, the right leg of a young girl was amputated above the knee, by Dr. Hayward, for disease of this joint. Being made to inhale the preparation, after protesting her inability to do so from the pungency of the vapor, she became insensible in about five minutes. The last circumstance she was able to recall was the adjustment of the mouth-piece of the apparatus, after which she was unconscious until she heard some remark at the time of securing the vessels — one of the last steps of the operation. Of the incision she knew nothing, and was unable to say, upon my asking her, whether or not the limb had been removed. She refused to answer several questions during the operation, and was evidently completely insensible to pain or other external influences. This operation was followed by another, consisting of the removal of a part of the lower jaw, by Dr. Warren. The patient was insensible to the pain of the first incision, though she recovered her consciousness in the course of a few minutes.

"The character of the lethargic state which follows this inhalation, is peculiar. The patient loses his individuality and awakes after a certain period, either entirely unconscious of what has taken place, or retaining only a faint recollection of it. Severe pain is sometimes remembered as being of a dull character; sometimes the operation is supposed by the patient to be performed upon somebody else. Certain patients, whose teeth have been extracted, remember the application of the extracting instruments; yet none have been conscious of any real pain. * * * *

"The duration of the insensibility is another important element in the process. When the apparatus is withdrawn at the moment of unconsciousness, it continues, upon the average, two or three minutes, and the patient then recovers completely or incompletely without subsequent ill effects. In this sudden cessation of the symptoms, this vapor in the air tubes differs in its effects from the narcotics or stimulants in the stomach, and, as far as the evidence

of a few experiments of Dr. Morton goes, from the ethereal solution of opium when breathed. Lassitude, headache and other symptoms lasted for several hours, when this agent was employed.

"But if the respiration of the vapor be prolonged much beyond the first period, the symptoms are more permanent in their character. In one of the first cases, that of a young boy, the inhalation was continued during the greater part of ten minutes, and the subsequent narcotism and drowsiness lasted more than an hour. * * * *

"It is probable that the vapor of the new preparation ceases early to act upon the system, from the facility with which it is exhaled.

"The process is obviously adapted to operations which are brief in their duration, whatever be their severity. Of these, the two most striking are, perhaps, amputations, and the extraction of teeth. In protracted dissections, the pain of the first incision alone is of sufficient importance to induce its use; and it may hereafter prove safe to administer it for a length of time, and to produce a narcotism of an hour's duration. It is not unlikely to be applicable in cases requiring a suspension of muscular action; such as the reduction of dislocations or of strangulated hernia; and finally it may be employed in the alleviation of functional pain, of muscular spasm, as in cramp and colic, and as a sedative or narcotic.

"The application of the process to the performance of surgical operations, is, it will be conceded, new. * * * *

"It is natural to inquire with whom this invention originated. Without entering into details, I learn that the patent bears the name of Dr. Charles T. Jackson, a distinguished chemist, and of Dr. Morton, a skiful dentist, of this city, as inventors — and has been issued to the latter gentleman as proprietor." * * *

The foregoing statements, which are only a portion of the communications of Dr. Bigelow, are alone sufficient, I presume, to enable you to form an opinion of the immediate and very great value of the invention to the afflicted or suffering, as well as to the surgical world. It is employed by, and has received, as you will perceive, the sanction of some of the most skilful and distinguished Dentists and Surgeons. The following are the statements of Drs. Warren and Hayward, of this city, who performed at the hospital the operations alluded to by Dr. B. and other operators, since the time mentioned by him: —

INHALATION OF ETHEREAL VAPOR FOR THE PREVENTION OF PAIN IN SURGICAL OPERATIONS.

By John C. Warren, M.D.

(Communicated for the Boston Medical and Surgical Journal.)

Application has been made to me by R. H. Eddy, Esq., in a letter dated Nov. 30th, in behalf of Dr. W. T. G. Morton, to fur-

nish an account of the operations witnessed and performed by me, wherein his new discovery for preventing pain was employed. Dr. M. has also proposed to me to give him the names of such hospitals as I know of in this country, in order that he may present them with the use of his discovery. These applications, and the hope of being useful to my professional brethren, especially those concerned in the hospitals which may have the benefit of Dr. M.'s proposal, have induced me to draw up the following statement, and to request that it may be made public through your Journal.

The discovery of a mode of preventing pain in surgical operations, has been an object of strong desire among surgeons from an early period. In my surgical lectures I have almost annually alluded to it, and stated the means which I have usually adopted for the attainment of this object. I have also freely declared, that notwithstanding the use of very large doses of narcotic substances, this desideratum had never been satisfactorily obtained. The successful use of any article of the materia medica for this purpose, would therefore be hailed by me as an important alleviation to human suffering. I have in consequence readily admitted the trial of plans calculated to accomplish this object, whenever they were free from danger.

About five weeks since, Dr. Morton, dentist of this city, informed me that he had invented an apparatus for the inhalation of a vapor, the effect of which was to produce a state of total insensibility to pain, and that he had employed it successfully in a sufficient number of cases in his practice to justify him in a belief of its efficacy. He wished for an opportunity to test its power in surgical operations, and I agreed to give him such an opportunity as soon as practicable.

Being at that time in attendance as Surgeon of the Massachusetts General Hospital, a patient presented himself in that valuable institution a few days after my conversation with Dr. Morton, who required an operation for a tumor of the neck; and, agreeably to my promise, I requested the attendance of Dr. M.

On October 17th, the patient being prepared for the operation, the apparatus was applied to his mouth by Dr. Morton for about three minutes, at the end of which time he sank into a state of insensibility. I immediately made an incision about three inches long through the skin of the neck, and began a dissection among important nerves and blood-vessels, without any expression of pain on the part of the patient. Soon after, he began to speak incoherently, and appeared to be in an agitated state during the remainder of the operation. Being asked immediately afterwards whether he had suffered much, he said that he had felt as if his neck had been scratched; but subsequently, when inquired of by me, his statement was, that he did not experience pain at the time, although aware that the operation was proceeding.

The effect of the gaseous inhalation in neutralizing the sentient faculty, was made perfectly distinct to my mind by this experiment, although the patient during a part of its prosecution ex-

hibited appearances indicative of suffering. Dr. Morton had apprized me, that the influence of his application would last but a few minutes after its intermission; and as the operation was necessarily protracted, I was not disappointed that its success was only partial.

On the following day, October 18th, an operation was done by Dr. Hayward, on a tumor of the arm, in a female patient at the Hospital. The respiration of the gas was in this case continued during the whole of the operation. There was no exhibition of pain, excepting some occasional groans during its last stage, which she subsequently stated to have arisen from a disagreeable dream. Noticing the pulse in this patient before and after the operation, I found it to have arisen from 80 to 120.

Two or three days after these occurrences, on meeting with Dr. Charles T. Jackson, distinguished for his philosophical spirit of inquiry, as well as for his geological and chemical science, this gentleman informed me that he first suggested to Dr. Morton the inspiration of ether, as a means of preventing the pain of operations on the teeth. He did not claim the invention of the apparatus, nor its practical application; for these we are indebted to Dr. Morton.

The success of this process in the prevention of pain for a certain period being quite established, I at once conceived it to be my duty to introduce the apparatus into the practice of the Hospital, but was immediately arrested by learning that the proprietor intended to obtain an exclusive patent for its use. It now became a question, whether, in accordance with that elevated principle long since introduced into the medical profession, which forbids its members to conceal any useful discovery, we could continue to encourage an application we were not allowed to use ourselves, and of the components of which we were ignorant. On discussing this matter with Dr. Hayward, my colleague in the Hospital, we came to the conclusion, that we were not justified in encouraging the further use of this new invention, until we were better satisfied on these points. Dr. Hayward thereupon had a conversation with Dr. Morton, in consequence of which Dr. M. addressed to me a letter. In this he declared his willingness to make known to us the article employed, and to supply assistance to administer the inhalation whenever called upon. These stipulations he has complied with.

This being done, we thought ourselves justified in inviting Dr. Morton to continue his experiments at the Hospital, and elsewhere; and he, directly after, Nov. 7th, attended at a painful and protracted operation performed by me, of the excision of a portion of the lower jaw, in which the patient's sufferings were greatly mitigated. On the same day, an amputation of the thigh of a young woman was performed, at the Hospital, by Dr. Hayward. In this case, the respiration of the ethereal vapor appeared to be entirely successful in preventing the pain of the operation; the patient

stating, afterwards, that she did not know that any thing had been done to her.

On Nov. 12th, an operation for the removal of a tumor from the arm of a young woman was performed by Dr. J. Mason Warren. The vapor was administered for three minutes, when the patient became unconscious; the operator then proceeded, the inspiration being continued. Standing myself on one side of the patient, while the operator was on the other, so entirely tranquil was she, that I was not aware the operation had begun, until it was nearly completed.

On Nov. 21st, an operation was performed by Dr. J. Mason Warren, on a gentleman, for the removal of a tumor, which covered nearly the half of the front of the right thigh. The patient lying upon a bed, the vapor was administered by Dr. Morton, in the presence of Drs. Charles T. Jackson, Reynolds, J. V. C. Smith, Flagg, Gould, Shurtleff, Lawrence, Parsons, Briggs, and others. After he had breathed the vapor for three minutes, his head fell, and he ceased to respire it, but presently awaking, the inhalation was renewed till he again appeared insensible. The operation was then commenced. At the first stroke of the knife he clapped his hand on the wound, but I immediately seised and held it during the remainder of the operation, though not without some difficulty, in consequence of his struggles. The operation was completed in two or three minutes, and the patient remained quietly on his back, with his eyes closed. On examination, the pupils were found to be dilated; the pulse was not materially affected. After he had lain about two minutes, I roused him by the inquiry, "How do you do to-day?" to which he replied, "Very well, I thank you." I then asked what he had been doing. He said he believed he had been dreaming; he dreamed that he was at home, and making some examination into his business. "Do you feel any pain?" "No." "How is that tumor of yours?" The patient raised himself in bed, looked at his thigh for a moment, and said, "It is gone, and I am glad of it." I then inquired if he had felt any pain during the operation, to which he replied in the negative. He soon recovered his natural state, experienced no inconvenience from the inhalation, was remarkably free from pain, and in three days went home into the country.

In all these cases, there was a decided mitigation of pain; in most of them, the patients, on the day after the operation, and at other times stated, that they had not been conscious of pain. All those who attended were, I think, satisfied of the efficacy of the application in preventing, or, at least, greatly diminishing the suffering usual in such cases. The phenomena presented in these operations afford grounds for many interesting reflections, but it being my principal attention, at this time, to give a simple statement of facts, I shall not pursue the subject further, but close with two or three remarks: —

1st. The breathing of the ethereal vapor appears to operate

directly on the cerebral system, and the consequent insensibility is proportionate to the degree of cerebral affection.

2d. Muscular power was for the time suspended in some cases, in others its loss was partial, and in one instance was scarcely sensible. The great relaxation of muscular action, produced by a full dose of the application, leads to the hope that it may be employed, with advantage, in cases of spasmodic affection, both by the surgeon and by the physician.

3d. The action of the heart is remarkably accelerated in some cases, but not in all.

4th. The respiration is sometimes stertorous, like that of apoplexy.

All these changes soon pass off without leaving any distinct traces behind them, and the ordinary state of the functions returns. This has been the course of things in the cases I have witnessed, but I think it quite probable, that so powerful an agent may sometimes produce other and even alarming effects. I therefore would recommend, that it should never be employed, except under the inspection of a judicious and competent person.

Let me conclude by congratulating my professional brethren, on the acquisition of a mode of mitigating human suffering, which may become a valuable agent, in the hands of careful and well-instructed practitioners, even if it should not prove of such general application as the imagination of sanguine persons would lead them to anticipate.

Boston, Dec. 3, 1846.

Boston, December 7, 1846.

Dear Sir: In compliance with your request, I will briefly state my experience of the effects of the gas introduced into practice by Dr. Morton, and administered for the purpose of lessening the pain of surgical operations.

I have operated on four patients who had inhaled this gas; two of these cases are noticed by Dr. H. J. Bigelow, in his article on the subject. In all of them the gas was administered by Dr. Morton.

The first case was the removal of a tumor from the arm of a woman; the second, the amputation of the limb of a girl, 20 years of age, above the knee; the third, the removal of the breast of a lady, in private practice; and the fourth was the same operation, which I did on Saturday last, at the Hospital.

In the three first cases, the patients were apparently insensible and unconscious during the operation; they have since repeatedly assured me that they were so; no ill consequences followed the inhalation of the gas; they are all now nearly, if not quite well, and their recovery has been, I think, more rapid than under ordinary circumstances; which I attribute to their having escaped the shock of the operation.

The fourth patient seemed to be conscious during the opera-

tion ; answered questions and appeared to suffer ; yet she says that she did not, and was not aware of what was done, till it was nearly over. She has thus far been very comfortable, more so, I should say, than patients usually are in the same time after this operation. I remain, very respectfully, yours,

GEO. HAYWARD.

R. H. Eddy, Esq.

And the subjoined extracts are from a letter of Dr. Peirson, of Salem, who performed the important operations, of which he speaks, under the administration of the invention by Dr. Fisk, dentist of the same city, to whom I have granted the license to use it in Essex County.

" Dear Sir, — The two following cases, occurring in my practice the past week, are of interest as supporting the claims to confidence of Dr. Morton's anodyne compound : —

" Case I. — Nov. 19th. An Irish girl, under twenty years of age, in attempting to step into the cars at Hamilton, while they were in motion, fell, with her arm upon the track, and had a compound, comminuted fracture at the elbow, from the wheel of the car. At about 9 in the evening, I amputated in the middle of the humerus. The operation lasted a little longer than if done by daylight, although it was a flap operation and quickly executed. Three vessels were tied. Dr. Fisk, dentist, of this city, accompanied me and caused the patient to inhale the vapor of the compound, about three minutes before the operation commenced. By this time she appeared to have yielded entirely to its influence, and became pale, silent and perfectly manageable, whereas she had before exhibited evidence of great physical suffering and uncontrollable grief. Before the arteries were all tied, she appeared to be returning to consciousness, when, on offering the apparatus to her mouth, she seized it with avidity, respired rapidly, and soon seemed to relapse into the unconscious state. It was thus renewed four or five times before she was placed in bed. Her own statement is that she suffered no pain during the operation, that she was asleep, and when she woke she breathed again of what was offered to her and fell asleep again — that she remembers to have done this three times. She says she did not know what we were doing to her, but in her sleep she thought she had got a reaping-hook in her arm, and that she heard the noise of sawing wood. She says she was not sensible of any thing until she was laid in bed, when she became quite talkative, and evidently somewhat excited. She slept some hours during the night. On dressing the stump on the third day, she made a violent outcry at the slightest pain. I was convinced that her statements with regard to her freedom from pain during the operation, were to be believed.

" II.— Nov. 21st. An intelligent tanner, about thirty years old, with a fracture of both bones in the middle of the left leg, his an-

cle crushed by the cars engaged in building the Salem and Methuen Rail-road. I amputated the leg just below the knee. The patient respired the vapor under Dr. Fisk's directions. He says he was not conscious of feeling any pain — and after the operation was finished and the ligatures applied, his consciousness returned, and, with great apparent sincerity, he asked *if his limb was taken off.* He says, though he felt no pain, he was conscious of the presence of those around him, and he was obedient to the directions given him. The operation was performed at about 3 P. M., and the stump was dressed at about 9, when, he says, the pain of a few sutures far exceeded that of the operation.

"In both these cases, the pulse became somewhat accelerated after the operation, the countenance assumed a vacant expression, although in the first case there was working of the brows, and the pupils were dilated. They both appear to be doing well, and exhibit no symptons worthy of note. Respectfully yours,

Salem, Nov. 24th, 1846. A. L. Peirson.

Postscript.—November 25th, 1846.

"Yesterday, I made further trial of the ethereal vapor, upon a middle aged female, from whom I removed an adipose tumor, by an incision four inches long over the clavicle and scapula. She was an unimpressible subject, and was less perfectly under the influence of the vapor than the others, but she was entirely bewildered and not able to realize the nature of what we were doing to her. She was much more quiet than patients usually are, although the dissection was somewhat protracted, by the dipping down of the tumor into the supra spinal fossa of the clavicle, and confinement by fascia. She says she felt no pain, and did not evince any perception of the puncture of the needle in dressing the wound — a sensation which usually calls forth complaint, as it is commonly unexpected.

"From the results I have seen at the Massachusetts General Hospital, and in my own practice, I am led to expect the following advantages from its exhibition: —

"1st. Uniformity of its effects, unlike any mode of intoxication by stimulants in the stomach, or respiration of nitrous-oxyde gas. My three patients were as unlike in age, temperament, and habits, as could well be imagined, yet all exhibited the same appearance of passive endurance.

"2d. There was no instinctive or voluntary resistance, which is so embarrassing to an operator. This, next to its power of preventing the perception of pain, is the greatest merit claimed for it.

"3d. The securing the patient from the severity of the great shock which a capital operation inflicts on the sufferer. It was quite noticeable, in all the patients I have seen, that there was none of that extreme depression which sometimes follows a severely painful impression on the nervous system.

"4th. Its effects pass off rapidly, and, as far as I know, no bad results follow.

"5th. It can be repeated several times during the operation, except the mouth or jaws are the parts to be operated on. The repetition of the dose is always sought by the patients with avidity.

"6th. The last and most important of its effects, is, that it either wholly annuls pain, or destroys the consciousness of it, so that it is not remembered; and thus the sentiment of fear is wholly obliterated. The patient appears to have been dreaming, and in the second case said that "he was in a distinct existence" (i. e., distinct from his former experience), thus illustrating the theory of double consciousness.

"These are recommendations enough to ensure it a fair trial among the humane and enlightened members of our profession. * * * *

"Dr. Morton and Dr. Jackson, at least, are entitled to the hearty thanks of the profession for their discovery, and the liberal manner in which they have offered it to all the subjects of surgical operations, both in and out of the Hospital. * * * *

"These gentlemen are entitled to the credit of having made it, for the first time, perfectly available to the suffering, and submitted it to the test of those competent to decide on its merits, without being content to rest its pretensions on non-professional credulity or popular notoriety.

Salem, Nov. 26th, 1846. A. L. Pierson."

It is also gratifying for me to be able to submit the following subjoined extract upon the subject, from the address of the Hon. Edward Everett, LL.D., President of Harvard University, at the opening of the new Medical College, of Boston, Nov. 6, 1846.

"I am not sure that since these remarks were delivered, a discovery has not been announced, which fully realizes the predictions of the text;—I allude to the discovery of a method of producing a state of temporary insensibility to pain, by the inhalation of a prepared vapor. A full account of this discovery is given in a paper, by Dr. Henry J. Bigelow, in the Boston Medical and Surgical Journal, for 18th of November, 1846. * * *

"I witnessed a very successful instance of the application of the prepared vapor, on the 18th of November; and was informed at that time by Dr. Morton, that he had employed it in several hundred cases of dentistry. It has also been made use of with entire success at the Massachusetts General Hospital, and elsewhere in Boston, in capital operations of surgery. The few cases of failure may perhaps be ascribed to irregularities in the process of inhalation, or to peculiarities of temperament or constitution on the part of the patient.

"I understand that great confidence is placed in this discovery, by the most distinguished members of the medical profession of this vicinity; and that they are disposed to regard it as an effectual method of inducing complete insensibility under the most cruel operations, by means easily applied, entirely controllable, and pro-

ductive of no subsequent bad consequences. It seems not easy to overrate the importance of such a discovery."

I could multiply certificates, and give you accounts of cases almost without number; keeping, as I do, a record of them at my office. But it is unnecessary. For, from the foregoing, I think you will readily conclude, that the extraordinary discovery of preventing pain in Dental and other surgical operations, has at last been made, and the use of it secured for the benefit of the human family.

It is now a matter of history, that the patient can submit, not only to Dental operations, but the reduction of dislocations, removal of tumors and the severest amputations, — without fear, consciousness or suffering; and that the Dentist and Surgeon can each perform the most arduous duties of his profession with a certainty, a facility and satisfaction, hitherto unknown. In fact, the patient escapes the great shock to the nervous system, which are incident to all other modes practised in surgery.

The following is a Circular, which I have found it necessary to issue, as a caution both to patients and those who have attempted, or may endeavor, to infringe on my legal rights.

"*Important information for the public at large.* — GENERAL CIRCULAR. — The peculiar circumstances of the case, requiring that the subjoined information should be fully made known at this time, the same is now published.

"PUBLIC CAUTION. — Whereas Letters Patent of the United States have been duly granted for the new and valuable invention, whereby Dental, and other Surgical operations, may now be performed without pain or suffering, or any injurious results to the patient; and certain unprincipled persons have, in the face of Law and Justice, without any license, instructions, or authority from me whatever, used my name and attempted to pirate said invention, endangering, from their want of skill and knowledge upon the subject, the lives of those whom they have persuaded to undergo their unwarrantable experiments:

"And whereas every person endeavoring, without such license, instructions, and authority from me, to use my name or pirate said invention, either by stealth or otherwise, and every person submitting to dental or other surgical operations, under such attempts and pretenders; or directly or indirectly aiding or abetting in any infringements of my rights secured by said Letters Patent, thereby renders himself liable in his person and property to the certain inconvenience and expense of prosecutions and damages at law.

"Now, therefore, on the score of humanity, as well as for the

protection of my own rights, I do hereby give this public notice; and warn all persons against making my apparatus or using my said invention or name, without my free License, Instructions, and authority; or in any manner lending themselves to the unprincipled and illegal employment of the same; as it is alike my duty and determination to hold every such offender strictly accountable, in his person and estate, for all damages under the laws, and for every violation of my Letters Patent, or infringement upon my property and interest in said invention. At the same time, I would publicly announce that I am now prepared to dispose of licenses, or make arrangements so that every respectable Dentist and Surgeon, or other suitable person can obtain for his patients the benefit of or secure himself full instructions and authority, to use said invention, upon just and reasonable terms; upon such terms, indeed, as must prove altogether less expensive to the purchaser than it will probably cost him in time and money, to undertake to defend himself in the Courts for infringements on my rights in the premises, to say nothing of the dishonesty, dishonor, or disgrace, which invariably attaches itself to every individual, who attempts to appropriate to himself, in secret or otherwise, that which is not only NOT HIS OWN, but which belongs "in LAW, EQUITY, AND IN FACT," solely to *another*, his neighbor, or fellow citizen.

"Aware that this invention is an extraordinary one, and of very great importance, conferring, as it does, a blessing heretofore unheard of upon the human race, inasmuch as, by means of it, the afflicted or suffering may now submit, without pain, or injurious results, to the severest Dental and other Surgical operations, necessary for the preservation of health and life; I am particularly desirous, that my invention should not be abused, entrusted to ignorant or improper hands, or applied to nefarious purposes.

"I therefore recommend that no individual should subject himself to the use of it under any operator, unless the patient learn beforehand, that such operator is really and duly licensed, instructed, and authorized to administer the same; which can be ascertained in every case by merely requesting such operator to exhibit his License; and which License every one empowered to employ my apparatus and invention, possesses in WRITING, duly attested, under my own hand and seal.

"For terms and further particulars, apply to 19 Tremont Row.
Boston, Nov. 26, 1846. W. T. G. MORTON."

It was deemed advisable to proceed in a quiet way with the invention at first, in order, among other reasons, that Letters Patent for the discovery might be properly secured in foreign nations. But I am now fully prepared to dispose of licenses to use my in-

vention and apparatus, in any part of the country, upon the following general terms: —

TERMS FOR DENTISTS.

In cities over			150,000,	inhabitants,	-	-	-	$200	for	seven years.
"	"	"	50,000	and less than		150,000,		150	"	" "
"	"	"	40,000	"	"	"	50,000,	100	"	" "
"	"	"	30,000	"	"	"	40,000,	87	"	" "
"	"	"	20,000	"	"	"	30,000,	75	"	" "
"	"	"	10,000	"	"	"	20,000,	62	"	" "
"	"	"	5,000	"	"	"	10,000,	50	"	" "
"	"	under 5,000						37	"	" "

Surgeon's license one half of the foregoing prices for, or those who prefer it, can have it according to the terms upon this page.

25 per cent. on all charges made for performing operations, wherein the discovery is used. Fifteen dollars to be paid down, which will include Apparatus, a bottle of the Preparation, instruction, &c. The party licensed, to keep a correct account of all operations, the names of the parties operated on, and to forward the same to me; also, to pay me as often as once in three months.

Apparatus, instructions and licenses forwarded to any part of the country upon the receipt of the money, which may be either forwarded to me or any person in this city who can pay it over upon the receipt of the foregoing.

Infraction of agreement to be a forfeiture of the license, at the option of the licenser.

Satisfactory security for payment of license fees, to be given.

The subscriber is prepared to give and receive propositions for Agencies to dispose of Rights.

W. T. G. MORTON,

ESTABLISHMENT OF DRS. N. C. KEEP & W. T. G. MORTON,

No. 19, *Tremont Row, and* 74, *Boylston Street, Boston, Mass.*

N. B. As I do not wish to derive remuneration from persons in destitute circumstances, and only look for proper compensation from those able to make it, it is proper for me to add that I have given the gratuitous use of the improvement for the benefit of the poor and afflicted, at the Massachusetts General Hospital, and intend to give the advantage of it to every charitable hospital for the service of the indigent and sick.

☞ All letters addressed to me must be prepaid, to ensure their being taken from the office.

(Hospital Correspondence.)

It has already been stated in the public prints that Dr. Morton has given the right to use the Great Discovery, whereby pain is prevented in Surgical operations, to the Public Hospital. The following correspondence upon the subject, between that Gentleman and the Governor of the Massachusetts General Hospital, is highly creditable to all parties.

To the President and Trustees of the Massachusetts General Hospital:

GENTLEMEN: — Most, if not all of you, may be aware, that I have both privately and publicly declared, that it is not my intention or desire to receive from Benevolent Infirmaries, nor from persons in destitute circumstances, any compensation for the employment of the new discovery, whereby pain may be prevented or alleviated in Surgical operations.

And, long convinced of the excellence of the Charitable Establishment, over which you preside, and of its great and increasing importance in the service of Humanity, I beg leave respectfully to inform you, that I shall be happy to present to the Massachusetts General Hospital, if it be agreeable for the President and Trustees to accept the same, the fullest right, under the Letters Patent granted me by the Government of the United States, to use the Discovery above mentioned, for the benefit of Indigent Patients—the sick, or suffering poor, and other persons at the Institution.

With very great respect,
I am, Gentlemen,
Your most Ob't Serv't,
W. T. G. MORTON.

No. 19 Tremont Street,
Boston, Dec. 14, 1846.

BOSTON, December 21, 1846.

DR. W. T. G. MORTON—

Sir: — At a meeting of the Trustees of the Massachusetts General Hospital, held yesterday, your letter of the 14th inst., presenting to the Hospital the right to use your "Discovery for the prevention or alleviation of pain in Surgical operations," was laid before the Board.

I am directed, by a vote of the Trustees, to inform you that they accept your polite offer, and to express to you their thanks for your valuable gift, and their sense of the importance of the right to use your discovery, in the Institution under their control.

Your Ob't Serv't,
MARCUS MORTON, JR.,
Secretary Massachusetts General Hospital.

[From the Boston Medical and Surgical Journal.]

Operations without pain. — In the leading article of this day's Journal, by Dr. H. J. Bigelow, the profession will notice that an impression exists here in Boston, that a remarkable discovery has been made. Unlike the farce and trickery of mesmerism, this is based upon scientific principles, and is solely in the hands of gentlemen of high professional attainments, who make no secret of the matter or manner. To prevent it from being abused and falling into the power of low, evil-minded, irresponsible persons, we are informed that the discoverer has secured a patent, and that means were taken to have the same security in Europe even before publicity was given to it here. Without further remarks, we cheerfully publish all that has been given us on the subject, and wait with impatience for the decision of the profession in regard to its real value.

[From the Boston Medical and Surgical Journal.]

The attention of the medical public has been recently fixed upon a discovery said to be capable of preventing the severe sufferings of patients undergoing surgical operations. The mere announcement of such an improvement cannot fail to interest every man of common humanity, while to the operating surgeon it opens the prospect of a most gratifying triumph of his art. Every fact, well attested, is of interest in relation the history of this new expedient to relieve human suffering. The following cases having occurred in this city, and being the first operated on under the influence of the new process, may, perhaps, be regarded of sufficient importance to deserve record.

On the 20th ultimo, Dr. Horace Kimball, an accomplished dentist of this city, put into my hands a recent No. of the Boston Medical and Surgical Journal, containing an article from the pen of Dr. Bigelow on this subject. There was no room to doubt the respectability of the source from which the information was derived, and accordingly, I made arrangements with Dr. Kimball to have the inhalation administered to a young lady who was to be operated on for the removal of a scirrhous tumor under the right mamma on the 21st ult. Owing, however, to his inability to avail himself of the use of the only apparatus for its administration at that time in New York, the lady, after having had her hopes raised, was obliged to submit to the operation without being able to participate in the benefits of the new discovery. It was successfully performed, and she has since entirely recovered.

On the 4th inst., Dr. Kimball having become the agent of the

discoverers in this city, and having provided himself with the necessary apparatus, afforded me an opportunity of making a trial of the inhalation at my office, No. 11 Carroll Place, in the presence of several professional gentlemen and medical students, in the case of a young lady from Brooklyn. The case was one of enlarged tonsils. The patient, after respiring the ethereal vapor for a few minutes, became apparently insensible, breathed heavily, had the pupils dilated and the pulse slightly accelerated, when, on attempting to open her mouth, I found the jaw closed spasmodically. This obstacle was in a minute or two overcome, and her mouth was opened, when a pleasant smile passed over her countenance. The left tonsil was excised, apparently without her notice. I laid down the instruments, intending to have the inhalation repeated before the removal of the second tonsil, but at the suggestion of Dr. Kimball, that she was still under the influence of her original dose, I proceeded to the removal of the second tumor. She soon afterwards opened her eyes and smiled with returning consciousness. She declared that she had no knowledge whatever of the first operation, but remembered smiling at having her mouth "so nicely opened."

The operation in the first instance was thus perfectly successful, and in the second was partially so, and but for the time lost, quite unnecessarily, both the tonsils might have been removed during the period of her entire unconsciousness.

Another operation was performed on a boy who had been my patient in 1840, with a double hare-lip, complicated with a terrible fissure of the palate. In this case, which had been perfectly successful, the end of the nose was drawn down a little to the lip, and he had been desirous himself of trying the effect of an incision at the upper part of the lip, with the view of liberating it, and giving a better expression to these features.

He inhaled the vapor for two or three minutes, and became entirely insensible. The knife, a small straight bistoury, was passed just under the ala nasi of the left side, through the upper lip, and brought out at the corresponding point at the other side, completely separating the lip from the nose, without apparently occasioning the least sensation.

It was several minutes before he recovered his consciousness. On being interrogated, he declared that he was not sensible of being hurt, did not know when he was cut, and felt no pain. His appearance and expression of countenance corroborated entirely his declarations, and left the fullest impression on the minds of all present, of the perfect insensibility occasioned by the ethereal inhalation.

As I had repeatedly inhaled the vapor of sulphuric ether, as long ago as the year 1822, and as I had seen it inhaled repeatedly by others, I was desirous of trying on myself the effects of this agent, in order to satisfy myself whether I could discover any difference in its apparent effects from those of the vapor of ether.

I was thrown into a state of perfect insensibility, unaccompanied with the least pain or inconvenience, but on the contrary I felt, on recovering, as if I had been in a beatific vision. No headache or unpleasant sensation of any kind followed the inhalation, and I recognized precisely the sensations which I had formerly experienced from the effects of ether.

On the 8th of this month, I was present, by the polite invitation of my distinguished friend, Dr. Mott, at an operation which he performed on a lady for the removal of a cluster of tumefied glands from the right axilla. After inhaling the vapor for a sufficient time to induce a state of insensibility, an incision of four or five inches in length was made parallel to the edge of the pectoralis major, and after some progress had been made in the operation, the patient was asked by Dr. Kimball how she felt. She replied, "very comfortable." "Do you feel any pain?" "No." To the same question repeated after a short interval, a similar reply was made — and after a further lapse of time the patient partially arousing, inquired, "have they begun the cutting?" — thus manifesting her total unconsciousness of what she had passed through, up to that period. Afterwards her sense of pain appeared for some time considerably blunted, but she became gradually more and more conscious of what was done, until at last, her sense of suffering seemed to be entirely natural.

In this operation, which from its position and the implication of important parts, was necessarily protracted, the influenee of the narcotic agent was not sufficiently permanent to prevent entirely the sense of pain; yet it was evident, both to the accomplished operator, and to all spectators, as well as to the patient herself, that her sufferings were in part averted entirely, while the rest was entirely mitigated.

On the 10th inst., I accompanied a young lady to Dr. Kimball's, who had a second bicuspid tooth on the left side of the upper jaw removed, under the influence of the ethereal inhalation. In this case the patient raised her hand to the mouth as if to prevent the process, but when it was accomplished she manifested a total ignorance, not only of pain but of all knowledge of the operation. She declared that she knew nothing about it, and remembered only a delicious dream or vision.

No evil consequences followed in this or either of the preceding cases, and the effect of what I have seen has been on my own mind a firm conviction that the discovery of Drs. Morton and Jackson has added to the resources of the surgical art, one of the most invaluable benefits of which modern times can boast. It is certainly a great boon to suffering humanity, and they deserve the unmingled gratitude of mankind. In amputations, and all other surgical operations which can be performed at once with rapidity and safety, this discovery furnishes a perfect immunity from pain; and in those more protracted, a great alleviation may be obtained; while that most excruciating operation, the extraction of teeth, which everybody has more or less frequently to endure, is no long-

er an object of dread, since, by means of the inhalation the patient is rendered absolutely and entirely unconscious of pain.

In reference to the *rationale* of the process, it will immediately occur to the practical surgeon that in cases of cerebral injuries, where coma exists, and where operations for cutting the scalp and removing bone by trephine and saw, are habitually performed without consciousness on the part of the patient, a case is presented parallel to that of insensibility from inhaling the vapor of ether. The ether is absorbed with the oxygen of the atmosphere during inspiration. Is it not natural that it should excite a certain degree of dilatation of the vessels of the brain, slight and evanescent certainly, but still producing a temporary pressure on the cerebral substance, thus furnishing at once an analogy with the coma of compression, and an explanation of this most singular and interesting phenomenon of insensibility to the knife induced at will, and with an impunity as real as it is surprising?

In furnishing this record of the first cases of surgical operation performed in New York under the influence of the Boston discovery, I feel that I am contributing my humble share to the mass of testimony which my fellow men have a right to demand on an occasion which appeals to the love of human nature as well as to the pleasure and pride of a profession in itself most honorable, and which receives from this discovery a happy addition to its glorious and humane triumphs. A. L. Cox.

No. 11 *Carroll Place, New York, Dec.* 18*th*, 1846.

(Boston Surgical Journal.)

ARE INVENTIONS IN SURGERY AND IN CHEMISTRY LEGITIMATE SUBJECTS FOR PATENTS?

By a Correspondent who has no Property in Patent Rights.

Several correspondents of the Boston Medical and Surgical Journal, in their remarks concerning the patent granted by the general government, to Drs. Morton and Jackson, for their new and important discovery by which pain may be prevented or alleviated in surgical operations, seem to proceed upon the ground, that the patent has been issued for a secret process. This is a mistake on their part; and, if they will reflect for a moment, or merely possess themselves of the ordinary law-knowledge upon the subject, they will perceive the error into which they have so inadvertently fallen.

No patent is or can be granted for a secret process. The very meaning of the word "patent" is "open," public, not private or secret; and the very first pre-requisite of a patent is that the inventor shall furnish the government with a written description of his discovery, so that any one skilled in the art or science to which it appertains, may know how to make and use the same; and so that at the expiration of the term during which the law secures the

could not be granted for an improvement in chemistry — even if it were not a notorious fact that letters patent are annually granted, in almost every other nation as well as our own, for improvements in both surgery and chemistry.

What would dentists, surgeons, or chemists say, if they were not allowed rights common to the humblest mechanic — to every class in the community? if they alone were denied the privilege of taking out letters patent for any discovery or improvement they might make in their vocation for the benefit of humanity? Do they not charge, and are they not entitled to fees for their services — in all cases where fees can and ought to be paid?

The novelty and usefulness of a discovery is first tested at Washington. A thorough examination must there be made in the first instance. The public examiners and Commissioner of Patents must fully investigate the subject, and ascertain to a certainty, that the discovery is absolutely new and useful, before any patent can be granted by the government.

In actions against infringers for appropriating to their own use the inventions of others, the burden of the proofs and trial is, in general, upon the defendants. Those who undertake to possess themselves of what does not legally belong to them, must prove, by disinterested and conclusive evidence, the grounds upon which they attempt to violate the rights or invade the property of the patentees. "The inventor," to use the words of Mr. Justice Woodbury, at the trial of Hovey *vs.* Henry, in November last, "holds a property in his invention by as good a title as the farmer holds his farm and flock."

But let the law be as it may, there are in every community, and probably always will be, persons constantly on the look out, ever ready and eager to avail themselves of the labors and inventions of others. When they are about to seize upon the improvement of some one else, they commonly begin by crying out that they thought of it before, they first attempted or accomplished it themselves — and then proceeding to appropriate the benefit of it to their own private use, they endeavor to make the most of their "ill-gotten gains" —as long as they can set justice at defiance, or hold on with impunity.

It is a matter worthy of particular note, that while the celebrated chemist and foreigner Shoenbein, has been securing letters patent in the United States and in all parts of the civilized world, for his great discovery (gun cotton), for the direct injury of mankind or the more certain destruction of human life; our countryman, Dr. Morton, has been securing letters patent at home and abroad for the infinitely greater discovery made by him and Dr. Jackson, for the alleviation of pain, the preservation of health and human existence. Dr. Shoenbein's chemical discovery was patented here in December last. It applies not only to cotton, but all fibrous materials: and all persons who have used his discovery, since his

exclusive right of the discovery under a patent to the inventor, the public at large may be at full liberty to make and use such discovery. These are the words of the law: "But before any inventor shall receive a patent for any such new invention or discovery, he shall deliver a written description of his invention or discovery, and of the manner and process of making, constructing, using and compounding the same, in such full, clear, and exact terms, avoiding unnecessary prolixity, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound and use the same."

The authority to grant patents is established by the Constitution of the United States, which declares that "Congress shall have power to promote the progress of science and useful arts, by securing for limited times to authors and inventors, the exclusive right to their respective writings and discoveries."

The object of the framers of this clause in the Constitution, was undoubtedly to sharpen the wit and ingenuity of the people, to stimulate citizens of every class in their researches and labors — to encourage them, by the prospect of an adequate remuneration, under an exclusive right for a term of years, to delve into the secret recesses of nature and art, and discover, reduce to practice and bring out to public view and use, every improvement or invention to be found, devised, or thought of, for the comfort, preservation, health or happiness of the race.

Nearly if not all great inventions have been patented; and were it not for the Constitution, the laws, and the decisions of the tribunals, in this behalf, very few modes, great improvements or processes would be made — or if made at all, be promulgated to the community at large. They would be wrought in private — practised and kept in secret; and, perishing at the death of those who gave them birth, be lost to mankind.

The correspondents above alluded to, also appear to think that patents cannot be granted for improvements in surgery and chemistry. This is another mistake on their part, which they will be convinced of at once, by merely reading the statute. The law of patents is based upon the article in the Constitution already quoted; and in the words of a section of that law, patents are granted "for any new and useful *art*, machine, manufacture, or *composition* of matter, or any new and useful *improvement* on any art, machine, manufacture, or composition of matter."

No distinction, it is manifest, is or can be made in favor of one set of men or profession over another. Mechanics, dentists, surgeons, artificers, chemists, and others — all possess equal privileges, each having as unquestionable a right as the other, to receive letters patent for any invention or discovery he may make in or out of his own professional walk or calling. And the property of each in these rights is alike protected by the courts and laws. — And surgery being an art, as much as chemistry is a science, it is equally obvious that it would be as vain to assert that a patent could not be issued for an improvement in surgery, as that a patent

application was made to our government, and all who may now be infringing upon his rights, in this country, are undoubtedly liable for damages, according to the statutes.

(Journal of Commerce.)

MORTON'S LETHEON.

"Who shall decide when Doctor's disagree?"

Mr. Editor : — A short space is solicited for a reply to an article in your paper of Saturday last, signed by Richard S. Kissam, of this city, to which my attention has been called. If I have rightly apprehended the meaning of that communication, it is briefly this: he objects to the "inhalation of narcotic vapors,"— because, as he says, the sensation of pain (which such inhalation completely destroys,) has been given us to stimulate and set in action the recuperative process of the organization, after injuries," and therefore it is desirable that patients should be left to feel pain which is naturally endured under surgical operations. Without attempting to counteract the position thus laid down by your correspondent — but which, nevertheless, I think not quite so unquestionable as it appears to him — it will be sufficient for my present purpose to say, that I presume he will not pretend that a suspension of sensibility for a period of from two to five or six minutes can have any appreciable effect in retarding the recuperative process in a person who during that time has been the subject of a surgical operation. If he does not, then all his fabric of physiological objections falls to the ground, and the use of the "Letheon," at which his remarks appear to have been directed, is not liable to the formidable objections which he has enumerated. If, on the other hand, he does maintain that the recuperative process is interfered with to an injurious extent, then I would most respectfully oppose to his opinion, that of Dr. John C. Warren and Dr. Geo. Hayward, of Boston, — gentlemen well known to the profession here, as distinguished surgeons of that city, and who would not be likely hastily to express an opinion which had not been well substantiated by experience and observation. In a communication from Dr. Warren to the Boston Medical and Surgical Journal, he says: — "The discovery of a mode of preventing pain in surgical operations, has been an object of strong desire among surgeons from an early period. In my surgical lectures I have almost annually alluded to it, and stated the means which I have usually adopted for the attainment of the object. I have also freely declared that notwithstanding the use of very large doses of narcotic substances this desideratum had never been satisfactorily obtained. The successful use of any article of the materia medica for this purpose, would therefore be hailed by me as an alleviation to human suffering."

How shall we account for the fact that Dr. Warren has considered it such a desideratum to find a mode of preventing pain in surgical operations; and that it has been, as he says, "an object of strong desire among surgeons from an early period," if, as your correspondent asserts, "all physiologists" agree to his statement, that pain is necessary to set in motion the curative process? Will he deny to the distinguished New England surgeon the reputation of a physiologist? Certainly not. Will he say that his remarks are applicable only to cases where insensibility to pain is long continued? This cannot be his meaning, for his objections are specifically to "the inhalation of narcotic vapors," whose effects are limited to a period of from two to five minutes — unless intentionally protracted beyond that time, in which case the objection will not lie against the vapor, but against the injudicious use of it. Most evidently there is not that entire harmony in the views of physiologists on this subject which your correspondent's declaration would lead us to believe. But Dr. Warren, of Boston, after detailing some operations performed under the influence of Dr. Morton's "Letheon," says: — "The success of the process in the prevention of pain for a certain period being quite established, I at once conceived it to be my duty to introduce the apparatus into the practice of the Hospital, (meaning the Massachusetts General Hospital, of which institution Dr. Warren is the senior surgeon,) but was immediately arrested by learning that the proprietor intended to obtain an exclusive patent for its use." After consultation with the other surgeons of the hospital, and the proprietor of the "Letheon," all objections to its use on this ground were removed, and Dr. Morton was invited to continue his experiments with it at the Hospital and elsewhere. In concluding his article, Dr. Warren says: — "Let me congratulate my professional brethren on the acquisition of a mode of mitigating human suffering, which may become a valuable agent in the hands of careful and well instructed practitioners."

Dr. Geo. Hayward, who is associated with Dr. Warren as a surgeon of the Hospital, in a communication to a gentleman in Boston, speaking of four different operations which he had performed, says: — "The first case was the removal of a tumor from the arm of a woman — the second, the amputation of the limb of a girl 20 years of age, above the knee; — the third, the removal of the breast of a lady, in private practice, — and the fourth, the same operation which I did at the Hospital. In the three first cases, the patients were apparently insensible and unconscious during the operation. They have since, repeatedly assured me that they were so. No ill consequences followed the inhalation of the gas, (vapor.) They are all now nearly, if not quite well, and their recovery has been, I think, *more rapid* than under ordinary circumstances; which I attribute to their having escaped the shock of the operation. The fourth patient seemed to be conscious during

the operation, answered questions, and appeared to suffer. Yet she says she did not, and was not aware of what was done, until nearly all over. She has thus far been very comfortable, more so, I should say, than patients usually are in the same time after the operation.

Other testimony to the same point might be given, but would add unreasonably to the length of this article. Sufficient has been adduced to show how this matter is viewed by the most distinguished surgeons in Boston, where this matter has been thoroughly tested, and who have had the best opportunity to observe its operation. The remark with which your correspondent closes his article, that the use of these various narcotics, if they alleviate present pain, is sure to be followed by protracted recovery, and sometimes, by death itself, so far as it may have reference to the use of the "Letheon," is shown to be altogether incorrect by the facts in the cases where it has been used; Dr. Hayward's statements appearing to prove exactly the reverse, viz: that the recovery of patients under its use have been more speedy and safer than without it—and for which he gives a sound physiological reason.

Your correspondent, "Medicus," is peculiarly unfortunate in his few lines, to embody so much that is incorrect. To his request that he may be allowed to assure you that its use is not sanctioned by the respectable physicians and surgeons of the city, I would simply say, that he takes too much upon himself to speak thus for the physicians and surgeons of New York, — as I happen to have evidence, of the most positive character, exactly the reverse of this. To his remark — that the nostrum had been tried in the New York Hospital, and failed, I oppose a point blank denial; the operation, to which he alludes, being the first one attempted in New York, in which there was a total failure in the attempt to administer the vapor — the person administering it never before having seen it used, and the patient not being at all under its influence. He then speaks of other reasons why it should not be used — viz: that it is a secret remedy, and patented. The gentleman ought to know that a secret, yet patented remedy, is a contradiction and absurdity, which the etymology of the word *patent* should have made obvious to him. Yet a few lines farther on, he contradicts himself, and says it is not a secret.

The whole matter is spread out on the books of the Patent Office in Washington, to which any body can have access, (and to which I would refer Medicus,) and therefore it is ridiculous to speak of it as a secret. It is patented, and upon that patent the proprietors rest for the protection of their interests. In reference to the expediency of patenting such a discovery, although I have a decided opinion, I do not deem it of sufficient importance to express it, inasmuch as it is a matter in which I have no sort of interest. I may say, however, that while one of the objects of the patentees is to remunerate themselves, for the expense of time and

money in perfecting it, yet they have made, and are making, such arrangements as to enable every public institute to use it gratuitously — and also to secure its benefits to the poorest and most necessitous persons — while to physicians, surgeons, and dentists, who may wish to use it in their private practice, it is offered for a reasonable compensation.

For my own part, I believe the discovery to be one of very great value, and shall do what I can to extend its benefits in the city. I am using it in my practice, as a Dentist, with the most surprising results; since by its use I am enabled to extract teeth from patients while they are rendered so perfectly insensible to pain as not to experience it even in the slightest imaginable degree.

HORACE KIMBALL, M. D., 522 Broadway.

New York, Dec. 21, 1846.

(Vermont Mercury.)

Report of Dr. Chase on the use of Dr. Morton's preparation, for the prevention of pain.

MR. EDITOR:—As much is said at the present time for and against the administration of Dr. Morton's "gas," for the prevention of pain, I should like to inform the community what has been the result of it so far, in my own practice.

I commenced the use of it about three weeks since, and have administered the gas and performed the operation of extracting teeth in twenty-six cases. Nine times to males, and seventeen times to females. In twenty-two cases no pain at all was felt during the operation. In one of the remaining four, the patient said that she was "hurt dreadfully;" and the other three spoke of the pain as very slight; nothing in comparison to the common mode without the gas. In twenty-five cases the patients declared that they should always take the preparation when they wanted a "tooth pulled;" and in one case, as believing that she "should have the *next* taken out the old way." In *two* instances, I gave the gas three times in succession, and in *four* cases, twice, when there were a large number of teeth to be extracted. In twenty-four out of twenty-six cases, the patients expressed themselves as feeling none but agreeable and quiet sensations during the operation of the gas; in the other two, both felt as though they were fainting during the last inspirations of the gas. Four patients were entirely unconscious during the operation, although for one of them I extracted four teeth which were very difficult to remove from the jaw. The remaining twenty-two were perfectly aware of all that was transpiring; knew when the instruments were applied, and spoke as soon as the teeth were extracted.

In no case have I seen any ill effects produced, nor have I heard of any. In every instance but two, the *jaw* felt perfectly easy and did not ache after the operation, and the patient said that it felt as comfortable as though no teeth had been extracted. The largest number of teeth taken out at one time, was *five*, and three of those were roots which were difficult to extract. The patient — a lady — has suffered several years with them, dreading the common operation more than the pain she endured. She took the gas twice, and although insensible to pain, she spoke during the operation, saying "pull another, it don't hurt at all." In two of the four cases where pain was felt, the gas was imperfectly breathed, owing to the extreme warmth of the room which caused a rapid evaporation of the liquid which forms the gas, and produced a fit of coughing. In the other two cases, I, of course, did not administer enough, although I supposed that I had.

Whenever the preparation was given but once, the patient felt perfectly well immediately after the operation, but when more was administered a sense of lassitude and slight dizziness was experienced for a few moments, which was immediately recovered from on going into the fresh air. In every case but one, the mouth opened by merely touching the chin with the finger; and in only two was the hand raised or any resistance made to the application of the Forceps.

HENRY S. CHASE, M. D.

Woodstock, Dec. 21st, 1846.

(Salem Gazette)

We take pleasure, unsolicited by Dr. Morton, in calling attention to a most important discovery of his, for mitigating the pain of surgical operations. This method, which is simply that of inhaling an inocuous gas, which produces a brief insensibility, has received the sanction of the most eminent surgeons in the Commonwealth. The Boston Medical Journal gives a minute account, prepared by Dr. H. J. Bigelow, of the experiments which have been made in the Hospitals, concluding as follows:

" We understand, already, that the proprietor has ceded its use to the Massachusetts General Hospital, and that his intentions are extremely liberal with regard to the medical profession, generally, and that so soon as necessary arrangements can be made for publicity of the process, great facilities will be offered to those who are disposed to avail themselves of what now promises to be one of the most important discoveries of the age."

(Boston Whig.)

Ethereal Vapor in Congress. — On Monday, Mr. Winthrop, in the House, and Mr. Davis, in the Senate, presented memorials from physicians of Boston, laying before Congress a humane plan by which surgical operations may be performed free from all pain. In both Houses they were referred to select committees.

(Salem Gazette.)

The late discovery of Dr. Morton, which comes so happily in aid of the surgeon and the dentist, seems to us to mark, in one respect, a new era in the history of our race. It is not merely that the physical pain of a few moments is annihilated, but that all the anguish arising from the dreadful anticipation of suffering, — all the terror with which the dentists' instrument and the surgeons' knife are invested by timid childhood and shrinking humanity, — are gone forever, as if by a kind angel's influence. The skillful operator will now be welcomed everywhere as the recognized friend of the sufferer; never impeded in his efforts by the resistance of those he is seeking to relieve.

We cannot, as yet, venture to guess how much is destined to be effected by this powerful agent; but if it only annihilates the pain caused by extracting a tooth, or amputating an arm, we think it deserves the warm welcome we have given to it. Within the past week a distinguished surgeon and dentist of our own city have satisfied themselves that it can be safely and satisfactorily used in such operations as these, and we should think that many cases might arise where it could be resorted to with equal benefit. We do not expect that it will annihilate "the ills that flesh is heir to," but we think that it will make our physical life in the 19th century of more value than it has ever been before.

(From the New York Herald.)

I submitted myself, to-day, to the respiration of Dr. Morton's newly discovered "Ethereal Vapor," applied by Dr. Edward Warren, for the purpose of having two troublesome teeth extracted by the celebrated dentist, Geo. W. Humphreys, of this city. The

first exhalation produced a calm, quiet sleep, in about two minutes after it had been commenced, and the first tooth, of large size, was instantly extracted by Dr. Humphreys, without the least sensible pain. I recovered in a few moments afterwards, having a sensation of gaiety, similar to the early effects of champagne. I then took a second trial, which left me perfectly unconscious of all operation, with considerable agreeable excitement. The second tooth was then pulled without any sensible pain. I remained to witness its use by several gentlemen and ladies, among whom were Judge Smith, of the Marine Court of your city, who had two taken out, without even knowing that they were extracted. He was under considerable gay excitement, after a partial recovery from the somnific state, but was soon restored. The gas is to be introduced in the army forthwith. It is a wonderful, a most wonderful discovery.

(Boston Surgical Journal.)

Letheon in New York.—The apparatus and ethereal vapor introduced to the profession by Dr. Morton, of Boston, for producing insensibility and unconsciousness during dental and other surgical operations, have been tried with more or less success in New York, for a few weeks. Dr. Kimball, who is agent for the city, has fully succeeded in several cases of the extraction of teeth, and he has administered the inhalation of the vapor to several patients, upon whom Dr. Cox has performed minor operations, the painfulness of which is described by the sufferers to have been inconsiderable, and in one or two cases the patient has been entirely unconscious of any sensation. Dr. Mott removed a tumor from the axilla of a young lady, a few days since, which required an incision through the integument of some six inches in length, which was made without pain, or any sensation whatever, as was also a portion of the dissection. The effects of the inhalation partially subsided before the operation was concluded, so that the patient recovered a kind of dreamy consciousness, but experienced very little suffering.

Dr. Kimball superintends the experiments, and is disposed liberally to afford opportunities to the profession for testing the success of this new auxiliary to practical surgery. It will soon be tried in the practice of the New York Hospital, a committee having been appointed for the purpose. Thus far, there is a disposition to regard the subject with favor, and worthy of further inquiry. Of its value, if fully successful, there can be but one opinion.

(Boston Transcript.)

Dentistry. — Dr. N. C. Keep, one of the oldest and best surgeon dentists in the city, has associated himself with Dr. Morton, the patentee of the preparation for putting patients, about to undergo dental and surgical operations, into a state of insensibility to pain, and who first demonstrated the practicability of its use. The application of this preparation is one of the most important discoveries in medical science of modern times.

Dr. J. C. Warren, one of the highest authorities in the United States, speaks of the preparation and its application in terms which must secure for it the confidence of all, and his views of its efficacy and usefulness are fully concurred in by Dr. Hayward of this city, and Dr. Pierson of Salem. President Everett, of Harvard University, also speaks of its merits in his address at the opening of the new Medical College, and says, that in the few cases in which it has failed, the failure "may, perhaps, be ascribed to irregularities in the process of inhalation, or, to peculiarities of temperament or constitution on the part of the patient."

[Newark Daily Advertiser.]

Pulling Teeth without Pain. — Messrs. Colburn & Son, Dentists of this city, made an entirely successful experiment yesterday of extracting teeth from two patients under the influence of *Ether* — which is claimed by Dr. Morton, of Boston, as an original suggestion, and for which, or rather perhaps for the contrivance of a convenient instrument for inhaling the potential vapor, he has obtained a patent. The following statement, which has been handed to us by Dr. Smith, who witnessed the experiment, gives the particulars:

This morning by invitation, I had the pleasure of witnessing at the room of Messrs. Colburn & Son, Dentists, in company with Dr. S. H. Pennington, the inhalation of Dr. Morton's Ethereal vapor for the prevention of pain, and the extracting of six teeth by Mr. Colburn while two patients were under its influence. The first subject was a young woman of 18 or 20 years of age who resolutely took the operating chair and breathed the vapor as pre-

pared for her by Mr. Warren, of Boston, an agent of Dr. Morton's, for about three minutes, when she sunk into an apparently comatose state. Mr. Colburn applied the forceps to an irregular canine tooth, which being decayed crumbled under the instrument; after several attempts he succeeded in extracting the stump, when she returned to a state of consciousness. After a few minutes she took the vapor again and had another tooth of the same kind extracted from the other jaw. This operation occasioned quite as much trouble and pain apparently, as the first. The patient made no resistance, though she groaned and seemed to suffer. She soon returned to entire consciousness and said the effects of the vapor was pleasant, though she knew all that was going on, and felt pain, though she did not *mind it.* I was satisfied that had this patient breathed the fluid a moment longer she would have been entirely unconscious of any pain.

The second subject was a young man 18 or 20 years of age, who had a number of very bad teeth and who never had courage enough to have any extracted. He sat down and took the vapor for about three minutes, without any unpleasant symptoms, (except a slight disposition to cough at first) and then sunk into an apparent slumber. After a little difficulty and delay in inducing him to open his mouth, Mr. Colburn made several unsuccessful attempts upon a decayed fang and then immediately extracted a large double tooth when the patient awoke. The inhaling apparatus was presented to him and he again after two minutes, became insensible, when two more large double teeth were extracted. He appeared intoxicated for some minutes, and said he knew nothing about having any teeth extracted, and had suffered no pain. He said it was "the most delightful sensation he ever experienced and he would give a dollar to take it any time, for the pleasure of it."

The exhibition was successful in proving what Dr. Morton claims, "that it always greatly mitigates, and generally renders the subject insensible to pain from dental and surgical operations," and though it is not new, that ethereal vapor may be breathed and cause intoxication, yet to Dr. Morton is the credit due of having first used it for any good purpose, and for inventing a convenient instrument for administering it.

As it is so powerful an agent, it should only be used by those properly instructed in all its effects.

Newark, Dec. 11, 1846. L. A. SMITH.

[Bostonian.]

SOMNIFIC GAS. — So many new and strange fangled projects and discoveries are coming into existence every day, that it would employ a pair of electric scissors, and a steam pen to keep the run of them all. However, we cannot avoid noticing so vital an object to us all, as the new theory of *gas!* One Dr. Morton, we believe, professes to have made a very important discovery in being able to administer a certain species of inhalable gas, the effect of which is so powerful — yet perfectly harmless — that a patient may be put into a magnetic sleep or torpor, which not all the pains and anguish of disjointing a limb or extracting a tooth will disturb. Now the immense benefit of such a discovery to the medical world, cannot admit of doubt, but the question arises, is it infallible? or is it but a slight improvement of the old humbug mesmerism, with etherealized opium accompaniment? A young lady engaged in setting types for our paper, went to Dr. Morton, on Tremont street, and took the gas for the purpose of having two teeth extracted. She describes the sensation as a sudden and pleasing sleep, though she lost not her powers of seeing and consciousness that something was being done to her teeth, yet she was not at all conscious of any pain while the teeth were being extracted.

[Portland Argus].

THE ETHEREAL VAPOR.— We saw this vapor administered yesterday, by Dr. Heald, to a man afflicted with a wen on his head. After inhaling the vapor for a minute, perhaps, the patient was pronounced to be in a proper state. Dr. Davies performed the operation. The cutting about and removing the excrescence occupied not more than two minutes. The patient was recovered by swallowing some cold water. He stated that he was sensible of every thing going on around him. There was no sleep. The cutting produced no pain, but was rather agreeable. This agreeable sensation arose probably from the letting of the blood; as there was an evident tendency of the blood to the head. He sat perfectly still and his appearance under the operation corroborated his words.

[Boston Medical Surgical Journal.]

INHALATION OF ETHEREAL VAPOR—PAINLESS REDUCTION OF A DISLOCATED SHOULDER JOINT UNDER ITS INFLUENCE.

BY S. PARKMAN, M. D.,

One of the Surgeons of the Massachusetts General Hospital.

The attention of the medical profession having been so extensively called to many applications of the discovery of Mr. Morton, the following instance of its employment may not be uninteresting to your readers, as indicating a class of cases in which its use may be of the greatest value.

A stout healthy carpenter applied at the Massachusetts General Hospital this afternoon, with a dislocation of the left shoulder. The accident happened last evening, from slipping on the side-walk. Ineffectual attempts were made this morning by a practitioner, at first unaided, and afterwards with the assistance of several other persons of fair bodily power, by means of a sheet, &c. In the absence of Dr. Hayward, the Visiting Surgeon of the Hospital, I was sent to take charge of the case. The dislocation was *sub-coracoid*, presenting the usual appearances. The pullies and counter-extending band being applied in the usual manner, the inhalation was commenced under the superintendence of the house physician, Dr. Bertody, by an apparatus furnished by Mr. Morton to the Hospital. After about two minutes its influence was seen to be established, indicated not so much by any decided apparent insensibility, as by a certain incoherence of manner, unattended, however, by any attempt at resistance or the like; the patient said he "had got enough," Traction was commenced, and after, say a couple of minutes, the head of the bone was felt to move, and at once entered the socket with an audible snap. During this time not a groan escaped the patient, neither was there the slightest resistance felt on the part of the muscles in the vicinity of the joint. The patient's manner continued slightly incoherent for a few moments, but he soon recovered himself, and denied having experienced the slightest pain, though he remembered the sensation of the snapping of the bone into its place. I need not say that having already experienced the pain of previous ineffectual and somewhat prolonged attempts, he expressed himself highly delighted and was profuse in his compliments.

The power exerted by the pullies was very slight, and I feel confident that I could have reduced the bone, unaided by them, with my hands alone. I am in the habit every year of producing this dislocation, among others, upon the dead subject, for demonstration in the lectures of Dr. Warren, and it is worthy of remark with

what ease these factitious dislocations are reduced; in fact it is hardly possible to handle the limb without the head of the bone flying into the socket—showing the muscular power to be the chief, if not sole obstacle in these cases in the living. In the instance above detailed, so utter was the abolition of the muscular power, and so easy was the reduction, that I was strongly reminded of my experiments upon the dead body.

The application of this agent to this class of cases has undoubtedly suggested itself to every one who has seen its employment, and it only remains to apply it to a dislocated hip joint to add another to its triumphs. In cases of dislocations it will probably not only annul pain in the patient, but render unnecessary those violent exertions on the part of the surgeon, which are by no means agreeable to the by-standers to witness, or to himself, on a hot July day, to make.

December 9, 1846.

USE OF THE LETHEON — SEVENTEEN TEETH EXTRACTED.

To the Editor of the Boston Medical and Surgical Journal:

Sir, — One of the most striking instances of the beneficial effects of the "Letheon" occurred on Wednesday last, and as everything relating to this matter is now of general and peculiar interest, I notice the facts in the case for the benefit of those who may perhaps be feeling the necessity of, and yet shrinking from, a similar operation. It was the case of a highly respectable and intelligent lady, who had for years been dreading the approach of the moment, which nevertheless was seen to be not far off, when she would be obliged to have all her remaining teeth removed. When it was announced to her that this might be done without occasioning her a particle of suffering, it was rather hoped than believed; yet she resolved at once to try what virtue there was in the "Letheon." Accordingly I met her at her residence, this morning, when I found six or eight friends assembled to see the operation, and among them two personal friends of the medical profession — both of them more than half sceptical as to the result. After the necessary preparations, I administered to her the vapor, and when I observed the indications of its influence upon her, I began the operation, and took out tooth after tooth, until nine had been extracted. During this part of the operation she sat quite still, making occasionally a slight exclamation as a tooth more firm than the others was removed, and I was thus enabled to remove these nine in quite a short space of time. The patient was now allowed to recover her natural condition, and the first remark made by her, while yet only partially conscious, was one of regret that she had gone through all the necessary preparation and

that not a single tooth had been taken out. When, however, she was entirely aroused, upon the assurance by one of the friends that she had already lost nine, she would scarcely credit the statemeet, nor did she fully realize it until after feeling in the mouth she had ascertained the fact for herself, when she made repeated exclamations of wonder and surprise at the result — declaring that she knew nothing of it whatever — that she had not had one particle of pain or inconvenience. After an interval of about half an hour, the "Letheon" was again administered, when eight more teeth were extracted, making seventeen in all. After the effects of the vapor had entirely subsided, she remarked that it was exceedingly difficult to realize the fact — that this so long dreaded operation had been concluded without giving her any suffering; declaring that in neither the first nor in the second part of the operation had she the faintest conception of what was being done, and could scarcely restrain her exclamations of astonishment and thankfulness at what had taken place, assuring us again and again that she had felt nothing — absolutely nothing.* The medical gentlemen, as well as others present, were completely satisfied with the result of the operation, and could not but sympathize with the feeling of grateful wonder manifested by the patient.

Yours respectfully, HORACE KIMBALL, M. D.

522 Broadway, New York, Dec. 30th, 1846.

(Boston Traveller.)

"NO MAN CAN TELL WHAT NEW CREATION GENIUS WILL NOT MAKE, OR WHAT NEW WONDER WILL NOT BE INVENTED NEXT."— Some thirty years ago, patents were not held in much estimation. Then almost any one could procure a patent. But the laws upon the subject were at that time so loose and unprotective, that few patentees could make much profit under them. Of late years, however, the statutes have been enlarged and greatly amended. It was found not only of public importance, but of public necessity, to make enactments expressly encouraging inventors,—to protect them in their just rights, and to insure to them, their heirs and assigns, the same security that had been thrown around all other kinds of property. This led to improvements in almost every branch of the arts and sciences. Hundreds, who had before been deterred, now entered with good will and zeal,—as a matter of business,— into nearly every useful inquiry and experiment. It was speedily found that under the new and better laws, no persons could procure Letters Patent, but those who actually produced new and valuable

inventions. This gradually drove into obscurity all tyros and pretenders; while men of intelligence and ingenuity, in their different vocations, were presented with a fair and vast field for research, or investigation. They hastened to improve it; and the consequence has been a series of discoveries, many of them of extraordinary brilliancy and magnitude,—filling the proper office at Washington with almost innumerable applications for Patents, and creating an almost incredible revenue from this one source, for the General Government; bringing in return constant and large gains to the inventors, and enabling them again to furnish the public with a multitude of new and superior articles of comfort, elegance, luxury or usefulness,—such indeed, as, if had at all, could not otherwise be procured without extreme difficulty, and long delays, or exhorbitant prices. These favoring laws, together with the broad shield thrown over real or worthy discoverers and enterprising citizens, by the sustaining rules of the courts, and the just verdicts of the juries, have unquestionably tended, more than all other circumstances combined, to bring about this desirable result; and men of industry and inventive faculties or talent, being now cheered onward in the path of their studies and labors to an extent unknown in any former period, are filling the land with so many and such beautiful, novel, extraordinary and invaluable productions, that it is almost impossible not to join in the general exclamation,—"No man can tell what new creation or wonder will not be invented next," to minister to the necessities, the health, pleasure or happiness of the human race.

We have been led to these observations from a casual knowledge of two remarkable discoveries, one of which has recently been brought out to public notice, and the other of which has been gradually making its way before the people in this country. We refer to the LETHEON, and to the SOLAR ILLUMINATING GAS.

The former was conceived and reduced to practice a few months since by Drs. Morton and Jackson, of this city; and having been immediately patented here and in other parts of the world, and introduced without delay into general use, may now be said to be a celebrated, as well as an inestimable discovery, Rights under the Patent have, it is understood, been disposed of by Dr. Morton, in most of the capitals of the Union, and from the extensive collateral business it is bringing that very skilful Dentist, as well as the income he must be receiving under his exclusive rights, promises an ample fortune to its possessor.

The latter, or Solar GAS, although of older date, is not so generally known and appreciated. But if it be of slower growth, it bids fair to be not less certain, lucrative or permanent in its results It was invented by an English chemist, of the name of Crutchett. This Gas is employed expressly for illumination. The mode of making and using it, in conjunction with various parts of the ingenious apparatus, form the subject of his patents, which were ta-

ken out in England first, and then in the United States. This Solar Gas is made from common oil or ordinary fatty matter, and is declared to be more than sixty per cent. cheaper than, and at the same time, altogether superior in its effulgence and in every respect, to that made from coal. It is now used in numerous churches, factories, hotels, steamboats and cities at the West and South. Rights under the Patent have been sold in all the principal States; and as the apparatus can be had on moderate terms, and for lighting a city, for instance, does not require more than a third or fourth of the room now occupied by the large and expensive works necessary for the production of coal gas,—it seems destined to be introduced into all the small business towns, as well as the most populous places.

Since writing the above, it is stated that the exclusive right to the Solar Gas apparatus has been purchased for Massachusetts and several other New England States, by a company of enterprising and successful gentlemen of this city; and that they have already erected their machinery at East Boston, where it may now be seen in full operation.

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INSENSIBILITY DURING SURGICAL OPERATIONS PRODUCED BY INHALATION.

To the Editor of the Boston Medical and Surgical Journal.

Sir, — I observe in the last No. of your Journal an article entitled "The Inhalation of an Ethereal Vapor to prevent Sensibility to Pain," &c., signed by J. F. Flagg, M. D., a considerable part of which is devoted to comments upon a paper of mine in the same Journal of the date of Nov. 18th, 1846.

Any one who will trouble himself to examine that paper, will find there a narrative of physiological facts observed by myself, with a few concluding remarks connected with the patent right; intended chiefly to inform the medical profession, at the request of the inventors, that every practical facility would be afforded to them in the use of their new process. It was far from my intention to take any part in any differences likely to arise from the invasion of the patent, and I indulged the belief that I had avoided any points of a controversial character.

It may be necessary, however, to notice one or two points in the communication of Dr. Flag, but I do so with regret that they should have emanated from so respectable a quarter. I disclaim any interest of any kind whatever in the matter under discussion, except the heartfelt desire I have, in common, I believe, with almost every man in the community, that full justice should be done to the inventors of a method by which the whole human race is

benefited; and I regret that an article embodying, as I believe this does, the views of those who would appropriate to their own advantage the discovery of others, should have first emanated from a gentleman for whose position I entertain, in common with others, much respect.

I am free to say that I believe many persons besides myself would have been gratified if this invention could have been issued to the world unfettered by any restrictions of law or private right. But when your correspondent, in his anxiety to take possession of the invention, refuses to allow to Drs. Jackson and Morton any right to their discovery, or to admit any "apology" for the patent, I am ready to show what I consider their right to be; and shall also take the liberty to examine how far Dr. Flagg has sustained his position.

The history of inventions is well known. Some fortunate individual makes a discovery. The individual is frequently not he who has investigated the most deeply or theorized the longest upon the subject; though the discovery itself is all the evidence the public can require, of his right to receive for it an equivalent. But no sooner is the discovery announced, than a multitude of individuals begin to recognize their own claims to a reward; and we hear that "there was nothing new in the discovery," "they were quite near it," "they had produced the same effect." It is rare, however, that a man who offers no evidence of any participation in a discovery, as in the present instance, openly avows his intention to share in the profits. This point deserves further consideration.

The inventors of a method of producing insensibility by inhalation, have shown an almost infallible way of annihilating the pain of some of the most formidable surgical operations. If any plan were to have been devised for promoting the comfort of the race, it would have been difficult to suggest one so wide in its application, as that which should obliterate sensibility at will; which should mitigate the sufferings of those who are called upon to endure pain in its most atrocious forms. If any individuals have bestowed this inestimable boon upon the race, they have a right to the race for a substantial return in some shape or other. Who, then, are these individuals? I can find no evidence that the invention would not have slept for twenty years longer, had not Drs. Morton and Jackson demonstrated it to the public.

I have no prepossession in favor of the tribe of *ex post facto* inventors, who always settle like parasites upon every recent invention of any pecuniary value. Either the discovery was previously made, or it was not. If it was, we have only the alternative of supposing, that the fortunate individual saw fit, for some inexplicable reason, to keep in his own bosom a secret, which he knew to be of inestimable value to the whole human family. I prefer to believe it was not.

But what sort of claim is now made to previous knowledge

upon the subject? Is the maid servant mentioned by Dr. Christison, who died in the cause, to be held as the discoverer? Or the gentleman who recovered from his lethargy? Or yet your correspondent who "almost fell asleep"? Obviously not. These facts were mere suggestions, pointing to a hypothetic principle; and it was the business of those who received such hints to have pursued them till the single fact was generalized and the principle established. Drs. Morton and Jachson have done all this. They have struck out a new path; and even when future science shall have abridged and improved the present method, or substituted another sor it, it will not detract in the slightest degree from the merit of the original discoverers of a great and novel principle.

It is fair to pre-suppose that your correspondent has ample grounds for availing himself of this discovery, without offering to the inventors a recompense. I shall examine these, as far as I am able to understand them. And, first, let me separate the question of legal right from that of common right and justice. With the former I have nothing to do. It can be only decided by those who possess competent legal knowledge. Your correspondent exclaims, "What is patented? A power? A principle? A natural effect? The operation of a well-known medicinal agent? I doubt the validity of such letters patent. It would seem to me like *patent sunlight or patent moon-shine.*" This figurative expression of Dr. Flagg's legal opinion may be of great value, but it may be mentioned that the inventors have on the other hand the opinions of several eminent authorities and also that of the commissioners at Washington, that the patent is perfectly valid and tenable. Leaving, then, for those who are competent to it, the discussion of the law of the question, I shall inquire on what grounds of professional right or of common justice your correspondent proposes to appropriate this discovery.

In the first place he objects to the use of patent or secret medicines. "I shall not," says he, "obtain and use it as a secret medicine; I shall not purchase and use it as a patent medicines," apparently on the ground that "the enlightened and regular medical faculty of Massachusetts * * * * are associated and have arrayed themselves against all secret remedies or patent medicines, and therefore cannot feel themselves at liberty," &c. &c. "But," says he in another place, "I shall use it." The scruples of your correspondent lie, then, not against the use of the discovery, but against the purchase of it. I shall attempt to remove all hesitation he may have upon this point.

In so doing I may state that as far as my humble influence was concerned, I urged the adoption of the new method in one at least of the early cases which occurred at the Hospital, without consulting the by-laws of the Massachusetts Medical Society, in full reliance upon the wisdom and liberality of the framers of that code. A subsequent examination of it has confirmed my position. I am unable to find any law bearing directly or indirectly upon the

present case. The tenth by-law of the Massachusetts Medical Society is directed, as I understand it, against any one who shall publicly advertise or publicly offer to cure disease by medicine, the composition of which he the advertiser makes a secret. It deals with the question of proclaimed secrecy ; and in my view is directed against that prudish class of practitioners whose ostentatious solicitude to conceal their wares, is their only chance of persuading people of their value. The same remarks apply to the fifty-eighth by-law. I leave others to judge of the propriety of applying such restrictions to a method which has been publicly registered, which has been voluntarily announced to every surgeon who has used it, and of which the immense utility is universally conceded. I am unable to discover that your correspondent has here any ground for his scruples about purchasing a right.

But, says he, "No man can restrict them from using what is used for the relief of suffering humanity." It is, then, "suffering humanity" which compels them to share in the equivalent which the public is returning to the inventors. But why not send "suffering humanity" to Dr. Morton, or call him to its aid? Dr. Morton has made ample arrangements for its reception at No. 19, Tremont Row, or for its relief at the houses of other dentists. — When the papers coolly announce, "the best method in use for narcotizing patients," or "the improved method," I for one enjoy the audacity of those who assert their intention to have a share in any profits to be made. But it is painful that any man should be compelled by his conscience to receive a part of the substantial gratitude of suffering humanity, when they to whom alone its gratitude is due, have made ample arrangements for its relief.

I confess my inability to follow your correspondent in a large part of his argument, and shall therefore only allude to it. He says, "the free use of the article has been ceded to the surgeons of the Massachusetts General Hospital, and these gentlemen would receive it or adopt its use on no other condition, of course, than that of knowing what it was, and having full and free control of it for that institution. Hence, I ask why * * * * * * why I must now purchase the right to use it ?"

Again, "If it is simple sulphuric ether, I shall use it ; * * * * * if it is a compound, ("it is said to be ceded to the surgeons of the Hospital * * * * * and if known to medical students who attend that institution * * * * * no one can rightly restrict them, and,") it will become free."

I can only interpret these logical sequences upon the ground that your correspondent confounds the question of secret and that of patent, and infers that what is no longer secret is no longer patent. It is understood that the matter was secret just so long as was necessary to secure patents here and elsewhere, and no longer. But the fact of its subsequent publicity does not change the question of property. The discovery and the patent right still belong to the inventors, and your correspondent, and whoever else of us

wishes to avail himself of it, must accede to their very reasonable terms.

It remains to say a word with regard to three very inoffensive "apologies;" "two of which" your correspondent considers to be "without force," while "the total incorrectness of the main part of the third, must be apparent to all." I am unable to see that your correspondent has invalidated the force of the two first. With the intention of testing the correctness of my statement that certain secrets are conventional among dentists, I have applied to three of the most eminent dentists of this city, and to whom I can refer your correspondent, who do not hesitate to state that they are so. But if Dr. Flagg still holds that he "does not know of anything which is practised in dentistry, even relating to the mechanical department, which is kept secret by duly educated dentists," I know no way in which, according to his own views, he could contribute more directly to the cause of "suffering humanity," than by volunteering to communicate to "duly educated dentists," for the mere equivalent of the time occupied in so doing, a concise account of his methods in some of the more recondite departments of his art; for example, in the composition and manufacture of mineral teeth. I am confident that the number of applicants who would amply compensate him for his time, would testify at once to the demand for this sort of knowledge, both in town and in the country, and to the general appreciation of his skill.

I have been led to exceed my intended limits, because I was desirous of answering in some measure, a class of objectors of whom I regret that your correspondent should be the representative. No one can doubt that an inestimable discovery has been made. Though it may be regretted that it has not been made free to all, yet the inventors have an undoubted legal right to pursue with regard to it whatever course may seem to them best. — They have made arrangements which place it at the command of any who are disposed to avail themselves of it,* and I cannot but think that the community, if not the government, will be forward in recognizing the magnitude of their claims.

I have only to add, that I am not ambitious of controversy, and that I shall make no further communication upon this part of the subject, unless the position I have here assumed shall seem to me to be in any way invalidated. Your obedient servant,

Boston, Dec. 4th, 1846. HENRY J. BIGELOW.

* I had occasion, a few days since, to tie the femoral artery of a patient who was unable to pay for the operation. I found no difficulty in obtaining the gratuitous use of the method; nor do I conceive that others would, in similar circumstances. It may be added that the patient was wholly unconscious of the dissection. H. J. B.

(New York Journal of Commerce, Jan. 6, 1847.)

Boston, Jan. 4, 1847,

To the Editors of the Journal of Commerce.

Gentlemen: — A friend has just sent me a slip from your paper of the 30th ult., which requires my notice. It is a letter from E. E. Marcy, M. D., of New York, concerning the discovery of the application of inhalation of vapour of Sulphuric Ether, for prevention of pain during surgical operations.

I regret that Dr. Marcy should have been led into error, as he evidently has been. I do not know him, nor does he know me, or he would never have made the charges against me that appeared in his communication. I trust that he will make the proper corrections when he learns the facts in the case. He has stated that Mr. Horace Wells, of Hartford, communicated to me a discovery which I claim to have made, viz., that inhalation of vapor of sulphuric ether will produce insensibility to pain, in surgical operations. He intermingles in his discussion of the subject, the application of "Nitrous Oxide" or "Exhilerating Gas," which I have nothing to do with, and which has a directly opposite effect to the vapor of lightly rectified Sulphuric Ether, and seems to regard the discovery alleged to have been made by Mr. Wells, that Exhilerating Gas would produce insensibility to pain, as identical with that claimed by me. I wish distinctly to state that Mr. Wells never communicated to me a word about the use of Ether vapor, nor did I know that he ever pretended to have made any discovery with regard to it.

I understood that he proposed and made some experiments as to extraction of teeth from patients during their excitement by "Nitrous Oxide or Exhilerating Gas," but I never saw any of his experiments, and merely heard that they had proved unsuccessful, as I suppose they must have been, since I have never known of any attempt to repeat them.

I hope Dr. Marcy will allow me also to disclaim the words he attributes to me, and has marked by quotation points; for I never made use of those expressions, nor did Mr. Wells state in my presence the words attributed to him.

I would also beg leave to call his attention to the fact that the effect of highly rectified Ether vapor when inhaled in the manner employed in this city, does not act as an excitant, but as a sedative of a most decided character, diminishing the pulsation of the arteries, and producing a deep sleep or stupor; effects directly opposite to those resulting from inhalation of Exhilerating Gas.

The use of *common* Sulphuric Ether (which contains Alcohol,) may have led Dr. Marcy to mistake the character of the pretented discovery.

Respectfully, your ob't servant,
CHARLES T. JACKSON, M. D

(Buffalo Daily Courier, Jan. 21, 1847.)

Dr. Morton's "Letheon." — The new agent for rendering patients insensible to pain under surgical operations, for which Dr. W. T. G. Morton, of Boston, has the sole right, has appropriately been named "Letheon." And though so recently discovered and applied to surgical purposes, the experiments already made by scientific and skilful operators, have abundantly demonstrated the reality of its wonderful effects.

Mr. G. V. Pickering, agent for the patentee, is now in this city, and has shown us ample testimonials of the successful application of the "Letheon" to the most delicate and formidable operations, in the hospitals of the eastern cities, and in the private practice of skilful and distinguished physicians. Not only is absolute insensibility to pain produced, but there is no instinctive resistance to the operator, on the part of the patient, which so often embarrasses and endangers the nice and complicated dissections of tumors, &c. The nervous system is likewise relieved from the great shock which attends severe and protracted capital operations, and which, of itself, is so often fatal in its consequence.

We can likewise add that, to our own mind, most conclusive of all testimony — personal experience—to the numerous well attested cases of the power and efficacy of the "Letheon." The writer of this had a tooth, very difficult of extraction, taken out by Dr. Harvey, when under the influence of this strangely oblivious agent, without the least consciousness of what would otherwise have been a most painful affair. Not the slightest injurious or unpleasant effects followed, and the whole passed off like a delightful dream!

Strange indeed are the results of this mysterious lulling of the senses into forgetfulness. Of incalculable benefit will it be to suffering humanity, in the hands of judicious and competent physicians, and by such alone should it be administered.

We may add that Dr. Harvey has made an arrangement with Dr. Morton's agent, for using the "Letheon" in his dental operations, and has been, thus far, completely successful in its use, in all cases in which he has applied it.

(Boston Medical and Surgical Journal of Jan. 27.)

Insensibility by Inhalation of the Letheon. — A case is reported in the New York Medical and Surgical Reporter of Jan. 9th, by Dr. C. T. Collins, formerly editor of that periodical, in which the operation for the removal of a scirrhous mamma was performed by him while the patent was under the influence of the letheon. The operation lasted from six to ten minutes, during which the patient "was entirely unconscious of what was going on," and no unpleasant symptoms ensued. Dr. Collins adds some remarks respecting the propriety of using this new auxiliary in

surgery, on account of its being patented. We give his own words on this point in the following quotation, which is all we have room for.

"Now if this is quackery, as intimated by two medical men who seem to me rather more nice than wise, then I am bold to say that I shall use the same means if again placed in the same circumstances."

"I have seen some articles written against the use of this new discovery, as it is called, on the ground of its savoring of quackery; but I am persuaded that such writers do not fully understand the feelings of those who have used it. They would say to Drs. Mott, Warren, Cox, Hayward, Bigelow, Post, Rogers, Peirson, and numerous others, let your patients, who fondly look to you for relief under the most trying circumstances, die rather than use anything which you do not fully comprehend! I believe that it would puzzle even these critics themselves to tell what compounds some of their own prescriptions make, or their *modus operandi*. Because one man chooses to make a little speculation in the use of sulphuric ether, or his peculiar manner of administering it, are all others who resort to it from higher motives to be called supporters of quackery? Or where is the physician who knows all the different effects upon the animal economy in a normal and abnormal condition, of half the remedies that are to be found placed in the Materia Medica as legitimate agents? Such persons, I think, are few. I am not arguing in favor of secret remedies, or patent rights, for I detest them in medicine as much as any one."

(Foreign Correspondence of the Traveller.)

LONDON, *Jan. 4th*, 1847.

The recent discovery of rendering surgical operations painless, by the inhalation of the vapor of sulphuric ether, is attracting great attention in England. Dr. Ware and Dr. Warren of Boston, first communicated this important matter to Dr. Forbes, the editor of the "*British and Foreign Medical Review*," and he immediately published authentic documents respecting the discovery, and appended a communication on the same subject from Dr. Bigelow, which that gentleman published in the "Boston Medical and Surgical Journal."

The *Times*, and other leading papers, re-published, *in extenso*, all the documents. Dr. Liston and other distinguished surgeons at once made experiments according to Dr. Bigelow's directions, and met with the greatest success.

Liston is the master of chirurgery in England; in the theatre of University College Hospital he amputated the thigh of a man who had been previously narcotized by inhaling the ether vapor. Shortly after being placed on the operating table the patient

began to inhale, and became apparently insensible in two or three minutes.

The operation was then commenced, and the limb was removed in less than a minute, the patient remaining, during the incisions and the tying of the arteries, perfectly still and motionless.— While the vessels were being secured, on being spoken to, he roused partially up, still showing no signs of pain, and answered questions put to him in a slow, drowsy manner. He declared that at no part of the operation had he felt pain, though he seemed to be partially conscious. He had heard some words, and felt that something was being done to his limb. He was not even aware that the limb was off till told of the fact, and then he expressed great gratification at having been saved from pain. Every thing proceeded subsequently as usual, and went on most favorably.

Dr. Liston has since performed several surgical operations while his patients were under the influence of sulphuric ether; and, as he states, " with the most perfect and satisfactory results."

Dr. Bigelow, or his son, forwarded to the editor of the London *Lancet* a full report of the discovery and its effects upon his patients, and this report has been published in the *Lancet*. It has created an extraordinary sensation here, and America will have the credit of alleviating a vast deal of human suffering by this great discovery. A New Englander.

[Buffalo Daily Courier.]

SCIENTIFIC EXPERIMENTS.

Somnific Gas.— Considerable sensation has been produced at the east recently, by the discovery of a gas which produced, upon respiring it, an agreeable sensation, and an insensibility to pain, under surgical operations. Many experiments were made, all of which were successful. Drs. Hayes, Snow and Van Duzee, Surgeon Dentists of this city, have been experimenting, first upon substances for the composition of the gas, and after they had satisfied themselves upon this point, they applied it in practice, with perfectly satisfactory results. It appears to be a kind of *extract* of *animal magnetism*, and produces similar effects to those claimed for that science.

The following is an account of an operation performed by Drs. Snow and Van Duzee, on Tuesday:

Mrs. V., a middle aged, healthy woman, after respiring the vapor for eight minutes, became considerably affected, though awake and sensible. She was asked to have the tooth extracted, but refused, and wished to breathe the vapor longer. She was allowed to do so, and at the end of fifteen minutes from the commencement, she consented to have the tooth (a lower molar) ex-

tracted, which was done immediately. At the moment when the operation was performed, she betrayed no symptoms of pain, and after recovering, said she felt the instrument when it was applied to the tooth, and knew when it was extracted, but felt no pain. She appeared like one very much inebriated, but entirely recovered in about ten minutes—said it was all very pleasant, and expressed her determination to inhale it again, as she had another defective tooth which she was desirous of having extracted. The pulse, after breathing the vapor a few minutes, rose to 120, and continued so until the operation was performed. The respiration did not seem to be much affected, but was performed with ease and the usual frequency.

Another case was that of a young man about 25 years old, attended by Dr. Hayes. On being seated in the chair, and being allowed to breathe the vapor, he experienced a somewhat unpleasant, nauseous sensation at first, but soon became extremely happy, and was inclined to be witty. After breathing for the space of ten minutes, he consented to have the tooth extracted.—One fang was removed. He was not insensible, but said very little pain was felt.

After partially coming to, he expressed much anxiety to breathe it again, and was suffered to do so for the space of eight minutes longer.—The symptoms were the same as before. Another tooth was extracted. He said he felt the hurt, but that it was much less than under ordinary circumstances—should not have cared if it had been ten times greater. He felt perfectly happy, and asked the privilege of taking it again at some future time. It is proper to say that he was at no time entirely insensible to what was going on in the room.

Since the above was written, another trial was made, which resulted in more complete success. The individual, a young gentleman, respired the gas for eight minutes, and became, at the end of that time, *entirely insensible*, neither speaking nor answering questions. He remained unconscious for three minutes, during which interval a tooth with double prongs was successfully extracted, and he declared he did not know when it was done. He remained perfectly quiet during the operation, and the whole time he was under the influence of the gas, which was fifteen minutes, in all, before he felt entirely free from its effects.

The patients in these cases suffered no inconvenience or injurious effects from respiring the gas. The gentlemen engaged in these experiments intend to pursue them, and probably adopt the somnific gas in their practice, should it prove to be what it promises. Surgeons will doubtless also find in it an auxiliary in their operations upon the human frame.

(Albany Daily Knickerbocker.)

THE ETHEREAL VAPOR.

God bless the inventor of this "last gift to man." Till yesterday, we never sufficiently appreciated its almost miraculous powers.— For two long days we have been driven almost to distraction by an aching tooth, whose pain apparently nothing could alleviate. Yesterday afternoon, however, "we screwed our courage to the pulling point, and resolved to test the value of the most wonderful, the most glorious, nay, the most God-like discovery of this or any other age." The vapor was administered by Doctors Clark & Mc Allister, and the operation performed with the utmost success and without the least particle of pain to anybody save the lookers on. As for ourselves — the sensation we experienced during the extraction, was particularly exhilerating, and however paradoxical it may sound, we have no hesitation in saying that the happiest moment of our life will ever be associated with the one that Dr. Mc Allister consumed in pulling out our teeth. A man therefore, who endures hereafter the torture of the most aggravating of all pains the tooth ache – even for an hour — should be written down an ass for whom no pity should be shown, and no mustard poultices made.

(Syracuse Daily Star, N. Y.)

ANODYNE ETHEREAL VAPOR.

To the Editors of the Star.

GENTLEMEN: Many inquiries being made about the operation of inhaling ethereal vapor to prevent sensibility to pain during surgical operations, I present a report of a few cases which have come under my observation within a few days past in our town; which is at your disposal.

On the 13th inst. I witnessed the exhibition of this medicine at the office of D. D. & A. T. Smith, dentists in this village.

CASE I.— Mrs. Emanuel Brown (about 22 years old) breathed the vapor 50 seconds, dropped back in the chair with eyes closed, and muscles relaxed as in sleep; countenance became rather paler, pulse less frequent, and softer than natural. Dr. Smith immediately extracted a large molar tooth. No expression of pain or change of countenance could be observed during the operation. The influence left her in two minutes, and she expressed herself well in a few minutes afterwards. Her countenance showed more than ordinary animation for a short time, and she felt a little excited. After the effect had passed off, she stated that she had been conscious of all that had passed; could not tell how she knew, but it left such an impression as from a dream; that she experienced not the slightest pain, or disagreeable sensation; remembered a kind of grating, but it was not disagreeable; ex-

pressed herself much pleased with the operation; sensations were as of a pleasant dream. Several persons present expressed surprise and gratification upon the result.

Case. II. — Mr. H. T. F., aged about 27, breathed the vapor about one minute (with some difficulty and interruptions, equal to ten seconds). A large three-fanged molar tooth was extracted after some delay, when Mr. F. had partially recovered. His eyebrows contracted, but no other motion was observed during the operation. Stated that he was conscious of all that transpired; felt no pain of cutting gums, but did feel pain from drawing the tooth, occasioned by delay; that he felt at the same time that he did not care if he was subjected to pain; had no dread; felt as though he did not care whether he was operated upon or not. Appearances and pulse as in Case I.

Case III. — Mrs. William Clark, a lady about 55 years old, breathed vapor two minutes, with slight interruption; appearance as in Case I.; a large molar tooth was immediately extracted; came to in one minute. Stated that she knew all that passed, but had experienced no pain; felt well, and left in about ten minutes; expressed great satisfaction.

Case IV. — Mrs. B. C. Bradley, of Salem, say 22 years old; breathed vapor one minute with difficulty; dropped back in chair, but would not open mouth; nor could it be opened without force. The vapor was resorted to again, with same result; advised her to wait for another day; was for some minutes like a person under the influence of protoxide of nitrogen. The inhaling in this case was incomplete, she swallowing the vapor, and taking in air by opening the mouth at the corners outside of the mouth-piece of the instrument used. (See Case VII. same lady.)

Case V. — Miss R., aged about 16, was being operated upon when I came into the office. Dr. Smith said that he had crushed the shell of the tooth; the vapor was again inhaled, and a piece of tooth broken off. She felt no pain, if I recollect, not having taken any notes of the case, I report from memory.

Case VI. — Jan. 15, Mrs. J. W. Hickox, aged about 25; breathed vapor one and a half minutes; affected as in cases I. and III., except that the mouth would not open at first; in half a minute, however, it was opened without force; a bicusped tooth was then immediately extracted; made an incoherent sound, and moved hands; came too almost immediately afterwards. Said, "I was provoked that you brought me away from that beautiful place; I was afraid that you would bring me too before you pulled the tooth. I knew that the tooth was out by feeling with my tongue. I felt no pain, but thought that I was in some beautiful place." Appearance as in other cases above.

Cale VII. — Mrs. B. C. Bradley (same lady as Case IV.) inhaled perfectly and without difficulty one minute, appearance as in Cases II, &c. There was an expression of pain; awoke in about ten seconds, and for a few minutes had the appearance of a person

under the influence of the protoxide of nitrogen; in a few minutes she became natural; but the transition was not so sudden as usual in those affected by that gas. Stated, "the last I recollect after I commenced taking it is that I tried to keep my eyes open as long as I could, for fear you would not give me enough; and the first afterwards, I heard you say, 'Stop,' and thought you rather imperative." This was about a minute or two after the tooth had been extracted. Complained of slight nausea; was much excited before taking the vapor, afterwards was perfectly free from all nervous tremor and excitement; after half an hour, still insisted that no pain was experienced.

From the above case I must say I have much confidence in the medicine, and concur fully in the opinions of Doctors Bigelow & Warren, of Boston, as reported in the Boston Medical and Surgical Journal. Your's &c., JOHN D. MATHEWS, M. D.

(Albany Argus, Jan. 5, 1847.)

Miss S. A. G. Partial anchylosis of the elbow joint, caused by rheumatic inflammation. Motion in the joint has been much improved. The Letheon was administered to-day for the purpose of producing a firmer motion, which was done without causing pain.

Child of P. F. Irritable ulcer on the great toe. The Letheon was administered to this patient, and the ulcer dressed with hyd. prot. chloride et opii. and adhesive straps, without the least sensation of pain.

L. K. Warty excrescence on the left ear. The Letheon was breathed by this patient, and the tumor removed by excision, without his knowledge of the operation being performed.

J. B. of Middleburgh. Carcinoma or cancer of the under lip. Was removed by excision, together with a portion of the surrounding healthy parts — the whole resembling in shape the letter V. The parts were brought together and retained by three sutures. Dressed with adhesive straps. The Letheon was administered in this case with the happiest effect.

The Letheon was next administered to several students, for the purpose of having teeth extracted while under its influence, which was done without the least sensation of pain, or even of their knowledge of the same being effected, until some time after it was actually performed. P. U.

(Albany Argus, Jan. 5, 1847.)

DR. MARSH'S CLINIQUE.

The efficacy of the Letheon gas, in rendering patients insensible to pain, under the surgeon's knife, the dentist's turn-key, &c.,

was further tested, it will he seen, at the last Clinique, and with entire success and satisfaction to the operators and the operatees. In no case, indeed, thus far, that we have heard of, has the trial failed to induce a more or less complete insensibility to pain, during the most difficult operations; nor has it been attended with any deleterious effect.

This is certainly a discovery interesting in the highest degree to the profession, as it is of importance to mankind. And it is creditable to the Professors of our Medical College, whose influence is so widely and justly extended and felt, that they have given to the newly discovered Letheon, a trial which has thus happily resulted to the cause of medical science and humanity. No modern discovery, perhaps, in that walk of science, is destined to be attended with more important or desirable results to both.

To Dr. A. Clark.

Sir : I take this early opportunity to address to you a brief note, expressive of my opinion of the use and effects of the Ethereal Gas, as invented and administered by Dr. Morton, of Boston, for the prevention of pain upon patients during dental and surgical operations.

On Saturday last, it was administered to three or four patients, at the clinique of the Medical College, with effects and results such as to satisfy me that it is capable of rendering patients, when under its influence, insensible to pain.

In the course of a few days I hope to be able to present to you, and the public, a full statement of the cases, and the effects of the gas on those upon whom surgical operations were performed, as well as the results of a greater number of cases.

I am yours, &c., Alden March.

(From the St. Alban's (Vermont) Messenger.)

A Surgical Operation.—On yesterday (Monday) morning a very skilful surgical operation was performed by Dr. Charles H. Hall of Burlington, upon the person of Mr. Meigs of Swanton.

Mr. Meigs has been suffering for some time from a leg so diseased as in the opinion of several surgeons to require femoral amputations, and yesterday the operation was performed under circumstances somewhat peculiar and note-worthy. Previous to the operation, Dr. Morton's Letheon Gas was administered to the patient, from the inhalation of which he was rendered perfectly insensible. While Dr. B. was cutting through the fleshy part of the thigh and sawing off the femoral bone there were no signs of consciousness manifested and no appearance of physical suffering. After the leg was amputated and the arteries taken up, the patient

said that he had not experienced the least pain during the operation.

The Letheon gas thus administered by Dr. Hall was invented, we understand, by Dr. T. Jackson, of Boston; and the ingredients were disclosed to Mr. Morton, a celebrated dentist of Boston, who procured a patent for the same and has invented an apparatus for inhalation.

This is the first time that an operation of the kind has been performed in this section of the country while the patient was under the influence of an 'Anodyne vapor,' which promises to be of incalculable service to suffering humanity.

(From the Maysville Eagle, Jan. 28, 1847.)

Mr. Editor :—We were invited into Dr. Marshall's office this morning, to witness an operation in Dentistry, while the patient was under the influence of Morton's Letheon. The patient, Mr. D., after inhaling the gas about forty-five seconds, had a tooth cut off and the nerve killed. Almost immediately after the operation, the patient revived. He stated that he had been sensible of what had been going on, but had experienced no pain from the operation, and that the inhaling of the gas had produced pleasure rather than pain. It is well known that this is one of the most painful operations. The pulse was slightly accelerated immediately after the gas was inhaled, but its effects wore off in a few minutes, having no unpleasant symptoms.

Dr. L. J. Frazee,
" T. W. Nelson,
January 26th. " M. F. Adamson.

(From the Syracuse Daily Star).

To the Editors of the Star.

Gentlemen : — In the Star of February 2d, I see an article on Ethereal Vapor by a Baltimore Correspondent, from the Baltimore College of Dental Surgeons, of the Boston Medical and Surgical Journal, annihilating completely (in his own estimation) the authority of Doctors Bigelow, Hayward, Warren, Smith, Morton, Professors Jackson and Everett, and others, also Vapor "Sucking Bottles" Patent, and all other things connected therewith, by his most *powerfully* written appeals to the good sense of the people — all no doubt excited by feelings of pure philanthrophy ! He even quotes the "Gauls in the Capitol," and "Pharoah's frogs in the troughs," to sustain his elaborate reasonings on the "injustice" of Morton's patenting an instrument for inhaling this Vapor — this bugbear for the purpose of "getting drunk" (as he is pleased to call it) in order to undergo a surgical operation.

The worthy correspondent most certainly has not informed himself upon this subject; but "where ignorance is bliss 'tis folly to be wise," for had he become enlightened by seeing the practice upon persons under the influence of this vapor, he had never ex-

posed himself so confidently as he has, in the correspondence alluded to. It is not, however, the want of success in the medicine which troubles him, so much as the requirement of purchasing the right to use it — here is where the ears show through. He goes so far as to quote cases from the Boston Medical and Surgical Journal, taking a part of several different cases, and quoting them as one — a mixed up, mingled mass of stuff, interspersed with his own witty remarks, to make them out most dangerous!

There are some facts which it may be well for all to understand, in reference to the discovery of the Anodyne Vapor. Dr. Morton and Professor Jackson first used sulphuric ether, combined with morphine; this not proving as successful as desired, they then tried narcotine, conium, and digitalis — all powerful narcotics; all of which proved too powerful for the purpose intended. Finally they tried sulphuric ether, divested of all impurities; this producing the desirable result, was administered alone, and is the simple substance used by us. There are, however, many persons at the present time speculating out of the rejected compound (morphine and ether) throughout the country, by selling such secret as the pure article; and therefore should be used by none excepting those who purchase of Morton. There are cases no doubt, where injury might be produced by an injudicious use of this medicine (so with all powerful agencies of medicine) requiring one who is capable of discovering when applicable and when not — not as your Baltimore correspondent says, "the rich alone, because he can purchase." No. "The poor are trusted with knowledge; but one who knows, and has judgment, and not having that "cursed thirst for gold" to grasp every dollar, whether kill or cure. Your correspondent says, "Morton's gas has found its way to Syracuse." Yes, truly, it has, and it may be necessary to state the blessings of its power. We have administered the vapor to more than FORTY different individuals with the most happy result. "There are none so blind as those who will not see." Those who will take a little pains to investigate the action of this material, particularly physicians, would be better able and capable of judging of its merits and demerits than they now are, and perhaps be more careful about promulgatiug their *wise* and *sage* opinions — venting their spleen, exposing their ignorance of facts in the premises, and endeavoring to frighten the community by chimerical dangers.

S.

(From the (London) Lancet.

To the Editor of the Lancet.

SIR — I beg to call your attention to the report of an anodyne process, by means of which surgical operations have been performed without pain. I think it would be interesting to the profession if published in THE LANCET. I also send a letter from Dr. Bigelow, bearing date more than three weeks after the report was

drawn up by his son. I write to add that Dr. Bigelow is one of the first physicians of Boston, a Professor of the Medical School of Harvard College, and a man of great accomplishments.

Yours sincerely, F. Boott.

Gower Street, Bradford Square,
Dec. 1846.

(*Extract from a private letter from Dr. Bigelow, to Dr. Francis Boott Boston, Nov.* 28, 1846.)

"My Dear Boott — I send you an account of a new anodyne process lately introduced here, which promises to be one of the important discoveries of the present age. It has rendered many patients insensible to pain during surgical operations, and other causes of suffering. Limbs and breasts have been amputated arteries tied, tumors extirpated and many hundreds of teeth extracted without any consciousness of the least pain on the part of the patient.

The inventor is Dr. Morton, a dentist of this city, and the process consists of the inhalation of the vapor of ether to the point of intoxication. I send you the *Boston Daily Advertiser*, which contains an article written by my son Henry, and which is extracted from a Medical Journal, relating to the discovery.

Let me give an example. I took my daughter last week, to Dr. Morton's room, to have a tooth extracted. She inhaled the ether about one minute, and fell asleep instantly in the chair. A molar tooth was then extracted without the slightest movement of a muscle or fibre. In another minute she awoke, smiled, said the tooth was not out, had felt no pain, nor had the slightest knowledge of the extraction. It was an entire illusion.

The newspaper will give you the details up to its date, since which other operations have been performed with uniform success.

Dr. F. Boott."

To the Editor of the Lancet.

Sir — I forwarded a few days ago, for publication in The Lancet, Dr. H. J. Bigelow's report on the anodyne effects of the inhalation of the vapor of strong, pure sulphuric ether; and since that time I have received an Address delivered by the Hon. Edward Everett, (late Minister from the United States to the Court of St. James's) at the opening of the new Medical College in Boston, an extract from which will be interesting, as affording his high testimony to the safety and efficacy of the process. In a note, Mr. Everett, the President of Harvard College, says — "I am not sure that since these remarks were delivered, a discovery has not been announced which fully realizes the predictions of the text. I allude to the discovery of a method of producing a state of temporary insensibility to pain, by the inhalation of a prepared vapor. I witnessed a very successful instance of its application, on the 18th of November, and was informed at that time by Dr. Morton, that he had employed it in several hundred cases of dentistry. It has also been made use of with entire success at the Massachu

setts General Hospital, and elsewhere in Boston, in capital operations of surgery. The few cases of failure may, perhaps, be ascribed to irregularites in the process of inhalation, or to peculiarities of temperament or constitution on the part of the patient. I understand that great confidence is placed in the discovery by the most distinguished members of the medical profession of this vicinity, and that they are disposed to regard it as an effectual method of inducing complete insensibility under the most cruel operations, by means easily applied, entirely controllable, and productive of no subsequent bad consequences. It seems not easy to overrate the importance of such a discovery."

I beg to add, that on Saturday, the 19th, a firmly fixed molar tooth was extracted, in my study, from Miss Londsdale, by Mr. Robinson, in the presence of my wife, two of my daughters, and myself, without the least sense of pain, or the movement of a muscle. The whole process of inhalation, extracting, and awaking, was over in three minutes; yet the same apparatus was used in three or four cases afterwards, and failed in each case to produce insensibility. I attribute the failure to the defect in the valve of the mouth-piece, by which the expired air was returned to the bottle, instead of passing into the room. The valve was a ball-and-socket one, and required a very strong expiration to make it act freely. I would add, that the efficacy of any apparreatus must depend upon the facility of breathing the vapor, and the perfect action of the valve, admitting the expired air to pass easily into the room. In Miss Lonsdale's case, we all observed she breathed strongly, and thus, no doubt, opened the valve. In all the other cases, we had great difficulty in making the patients breathe through the mouth-piece.

Yours sincerely,

F. Boott.

To the Editor of the Lancet.

Gower Street, December, 22, 1846.

Sir, — If you have not heard of Mr. Liston's success in the use of the inhalated ether, the following note I have received from him will instruct you, as confirming the American report:

Clifford Street, Dec. 21, 1846.

"My Dear Sir, — I tried the ether inhalation to-day in the case of amputation of the thigh and in another requiring evulsion of both sides of the great toe-nail, one of the most painful operations in surgery, and with the most perfect and satisfactory results.

"It is a very great matter to be able thus to destroy sensibility to such an extent and without, apparently, any bad result. It is a fine thing for operating surgeons, and I thank you most cordially for the early information you were so kind as to give me of it.

To Dr. Boott.

Yours faithfully,

Robert Liston."

I hope Mr. Liston will report of these cases more fully.

Yours sincerely, F. Boott.

To the Editor of the Lancet.

Sir, — Having noticed, in several periodicals and newspapers, reports of two operations recently performed by Mr. Liston, at the University College Hospital, upon patients under the anodyne influence of inhaled vapor of ether, in which amputation of the thigh in one case, and evulsion of the nail of the great-toe in the other case, were effected without pain to the patients, I take this earliest opportunity of giving notice through the medium of your columns, to the medical profession and to the public in general, that the process for procuring insensibility to pain by the administration of the vapor of ether to the lungs, employed by Mr. Liston, is patented for England and the Colonies, and that no person can use that process, or any similar one, without infringing upon rights legally secured to others.

I am aware that doubts exist in the minds of some as to the liberality of rendering inventions or improvements, which tend to alleviate suffering, subjects of patents; but I cannot see why the individual who, by skill and industry, invents or discovers the means of diminishing, or, as in this instance, annihilating human suffering, is not full as much entitled to compensation as he who makes an improvement in the manufacture of woolen or other fabrics. Indeed, he is entitled to greater compensation, and for a stronger reason, — he has conferred upon mankind a greater benefit.

With this view, I have accepted from the American inventors, or their representatives, the agency of affairs connected with the English patents, and it is my intention, while I hold the trust, to adhere to such a course, that the charge of illiberality shall rest upon any persons rather than upon the proprietors of the patent, or upon their agent.

James A. Dorr.

Duke Street, St. James,
Dec. 28, 1846.

(*From the* (*London*) *Lancet*)

In another page we insert an important communication, kindly forwarded to us by Dr. Bootт, of Gower Street, describing the important discovery of an apparently harmless means of producing insensibility during the performance of surgical operations. The means of performing operations without pain has, in all ages, occupied the attention of the profession. The realization of such an object, by a means so simple as the introduction of the vapor of sulphuric ether, cannot but redound to the great merit and reputation of the dicoverer, Dr. Morton, of Boston, America, and to the honor of the profession to which he belongs. It is almost impossible to discredit the statements contained in the communication referred to, from which it will be seen that a great number of operations, from the extraction of teeth to the gravest operations of surgery, have been painlessly performed. The discovery seems to have a remarkable perfection about it, even in its first promulgation. We shall watch its development in the various branches of medicine and surgery which may admit of its applica-

tion, and carefully record them. We suppose we shall now hear no more of mesmerism and its absurdities as preparatives for surgical operations. The destruction of one limb of the mesmeric quackery will be one not inconsiderable merit of this most valuable discovery. The operation of Mr. Liston, at University College Hospital, was performed after the inhalation of ether, by means of an apparatus contrived by Mr. Squires, of Oxford street. It appears, from a communication in another column, that the discovery has been patented for Great Britain and the Colonies.

(From the London Observer of Jan. 3d, 1847.

THE NEW MEANS OF RENDERING SURGICAL OPERATIONS PAINLESS.

Mr. James Robinson, surgeon dentist, of Gower Street, has published the result of several cases in which he has extracted teeth with success under the following circumstances. Mr. R. says: "It was on the 17th of this month that I received from my friend Dr. Boott the first intelligence relating to this discovery, and which intelligence had been conveyed to him on that day in a private letter from America, and stated that numerous surgical operations had been performed at Boston, and amongst others numerous extractions of teeth; and I immediately constructed an apparatus for the purpose of testing these remarkable allegations. On the 19th, in the presence of Dr. Boott and his family, at his own residence, I operated upon a young person thrown into sleep by the inhalation, and extracted a molar tooth from her lower jaw. The inhalation occupied a minute and a half, and the patient recovered from sleep in another minute.

Dr. Boott questioned her respecting the tooth and she expressed her great surprise at finding it was removed. She said that all she had felt was merely a sensation of cold around the teeth; a sensation which was caused perhaps by the coldness of the extracting instrument. The apparatus employed consisted of the lower part of Nooth's apparatus, with a flexible tube, to which was attached a ball and socket valve and mouthpiece similar to those used for inhalation.

I repeated the experiment a few days after on other parties, but in several cases little or no effect was produced by the vapor. The fact was that the ball and socket valve though impervious to water was not so to air; moreover, as the patient was becoming insensible and the breathing tranquil and involuntary, he had no longer the power of raising the ball, hence the breath passed into the vessel and diluted the ether vapor and only an incomplete in sensibility ensued.

Instructed by these circumstance I have had another apparatus made by Mr. Elyshick of Oxford street. It consists of a mouth-piece containing two valves, a perpendicular one which permits a perfectly free inhalation but closes when expiration begins, and opens the other, an horizontal valve with a perpen-

dicular action at the top. By this means inspiration and expiration are both allowed with the greatest freedom. To the end of this mouthpiece is attached a pad containing a spring well stuffed, and adapted to the external *contour* of the mouth, also a clip for compressing the nostril and thus preventing the patient from drawing in the air either through the nose or by the corners of the mouth. This apparatus I tried on Saturday last on two patients, from one of whom I removed an upper molar; from the other a deep seated stump. My success was complete. Yesterday I again operated at my house in Dr. Boott's presence, on Mr. Dixon, surgical instrument maker of Tunbridge Place, Newroad.

The account he gave of his *status* during the operation, is extraordinary. He described that he underwent a most remarkable dream, in the course of which all that he had done, and read, and known, and all the events of his early youth, seemed to be "compressed into a circle." He then felt as though an evil spirit was endeavoring to triumph over him; but still his confidence in his own victory was predominant. The actual removal of the tooth seemed to be coincident with the effort of the supposed evil spirit. In half a minute the patient was conscious of the presence of those around him, and in two minutes he was fully recovered. He had been unconscious of the operation.

In conclusion I may remark, that I entertain the most confident hopes that at last a means is provided which, beyond all fear of failure, without any reference to the peculiarity of individual temperament, susceptibility or indiosyncrasy, will be at the service of all who are obliged to undergo the operations of dental surgery.

Another account states that the original discovery is due to two medical practitioners in Boston, America, — Dr. Jackson, and Dr. Morton. The most painful surgical operations were performed by them while the patient was in a state of insensibility, from the inhalation of vapor from sulphuric ether. They were thrown into a state nearly resembling that of complete intoxication from ardent spirits or of narcotism from opium—this state continued but a few minutes, five to ten, but during that time the patient was insensible to pain. A thigh had been amputated, a cancer extirpated, teeth drawn — without the slightest suffering. The number of operations of various kinds, especially those in dentistry, had been very considerable, and few persons resisted the influence of the agent — the effect was not exactly the same on all — in some the insensibility was entire, and the patient was aware of nothing which was going on — in others a certain degree of the power of perception remained, the patient knew what the operator was doing — perceived him for example take hold of a tooth and draw it out, felt the grating of the instrument, but still had no pain. The practice has since been introduced into this country by some of our most eminent surgeons and dentists, with complete success.

DISLOCATION REDUCED BY THE AID OF THE ETHEREAL INHALATION, WITH OTHER NOTICES.

To the Editor of the Boston Medical and Surgical Journal.

Sir, — James Murphy, a laboring man, aged 56, presented himself at the Hospital of the House of Correction on the 9th inst., having his left humerus dislocated into the axilla. The patient stated that the accident occurred five weeks ago, and that it was then seen by a physician of high respectability, who (no doubt by reason of the presence of inflammation and tumefaction) did not detect the true condition of the limb. The nature of the case was evident at the time of his coming here. This shoulder was less in size than the other, as was the whole arm for want of use. The elbow projected very considerably from the body, nor could the arm be rotated. The fingers were numb. The head of the bone could be distinctly felt in the axilla.

The operation for reduction was commenced by placing the patient on a bed. He then began to inspire through the ethereal inhaler. At this moment I observed that his knees were raised, and that there was much resistance of the muscles of the arm when slightly moved. I then, removing my boot, and sitting at his side, placed my heel in the axilla, and waited till the ether should have its expected effect. This occurred in about three minutes. His knees then relaxed and straightened, and as I gradually and firmly (with the assistance of a student) extended the arm and carried it a little further from the body, the head of the bone slipped into the socket. My own part in the operation was performed in less than two minutes. In a moment after the patient awoke from his lethargy, entirely unconscious of what had taken place.

On the afternoon of the same day I amputated the thumb of an old sailor while under the influence of the ethereal gas. He was totally unconscious of the operation, and said when he awoke, that he had been dreaming that he was on board of a man-of-war in South America, walking the deck and chatting pleasantly with a shipmate.

A few weeks ago I amputated the leg of one man, and the foot of another, while attempts were being made to render them insensible to pain by means of this same agent. But from want of docility in the patients, or from fear, or some other unaccountable influence, they failed to be affected by the gas to the desired extent. A very considerable mitigation of pain was, however, experienced by them, according to their own language.

C. H. Stedman.

City Institutions, South Boston, Feb. 12th, 1847.

(London Daily Times, Jan. 21st, 1847).

OPERATIONS WITHOUT PAIN.

Sir,— The exact qualities of vapor of ether, and the precise modes in which it acts on the nervous system, require much investigation. Every day now produces new cases in which surgical operations are performed, under its influence, without pain to the patient; but it is not invariably successful. This day, at the Ophthalmic Hospital, Mr. C. Guthrie completed the serious operation of lithotomy, the patient declaring after it was over that he had not felt the knife. Many other cases are given in the local papers; but it appears that the ether does not equally affect all cases. In one instance reported in London, the patient, a woman, was a long time before insensibility could be induced. It was known that she was a gin-drinker. On Saturday last ether was tried upon a miner whose leg required amputation in consequence of an accident. The patient inhaled the ether for twenty-three minutes, and for the last ten minutes the strength of the vapor was increased by the application of heat, yet no stupefaction, nor even partial insensibility, ensued. The operating surgeons, who had been successful in previous cases, accounted for the fact by the habits of the man, who had been a great smoker and drinker, and had thus impaired the susceptibility of the nervous system to narcotic or other analogous influences. At the Westminster Medical Society on Saturday last, Dr. Snow said that an important point with respect to the vapor of ether, was the great effect of temperature on its relations to the atmosphere. An increase of only thirty degrees in the temperature of atmospheric air causes it to take up just twice the quantity of ether! Another of its qualities should deter ignorant persons from tampering with it. The vapor is highly inflammable, and if used by candle-light great risk of explosion would be incurred. Its weight would induce its accumulation near the floor, and the application of flame would lead to most dangerous consequences. Some French surgeons have even contemplated the possibility of a case in which the combustion induced by ignorance might extend to that portion of the vapor of ether contained in the lungs of the patient. This is, however, very unlikely. Indeed, from some experiments made in London, it would seem that the expired vapor is not inflammable. The dangers, however, are too many to justify the employment of the vapor by uninformed persons, and are sufficient to require the careful investigation of the scientific surgeon. M. R. C. S.

(Bell's Life in London, Jan. 31st, 1847).

PREVENTION OF PAIN BY THE FUMES OF ETHER. MIDDLESEX HOSPITAL.

On Monday last, at the above Hospital, the efficacy of the ether

was put to as severe a test as it has yet been subjected to. A man of 63 had been admitted with symptons of stone and diseased bladder; so much pain, straining, and struggling attended the attempts at sounding, that it was with difficulty satisfatorily accomplished. The vesical tenesmus was incessant, amounting to total incontinance of urine. Endeavors were made for several weeks to allay this extreme irritability, so that some urine might be retained or some water received as an objection, but in vain; neither could be endured, lithotrity was consequently out of the question; and Mr. Arnott determined to perform the operation of lithotomy, unpromising as the case was, but, if possible, whilst the patient was under the influence of the ether. In seven minutes from the commencement, but in reality only two from the effectual inhalation, its influence was obtained. The catheter was then introduced, and some water attempted to be injected, but not above two or three ounces could be borne, and this, retained by pressure, was ejected immediately on the introduction of the staff, which owing to the state of the parts, was effected with some difficulty and consequent delay; the bladder was cut into; the stone was grasped at once, but crumbled under the forceps, requiring their re-introduction several times; the scoop was employed to remove calculous matter like mortar; and, lastly, the bladder was injected four or five times so as to wash it out. During the whole time, from first to last, the patient gave not the slightest indication of suffering; indeed, it was not until he was removed to bed and had been some time in it, and taken some brandy and ammonia, that he did so, and then of soreness merely. Nor was the influence of the ether limited to this, its anodyne effect was maintained during the evening, the man remaining in a dreamy and "very comfortable state," as he termed it. He declares he suffered no pain; he knew that something was being done, but he recollects nothing distinctly "after blowing the horn." Up to Wednesday evening he was going on very favorably. Without ether the pain in this case must have been most severe, and, from the circumstance mentioned of more than ordinary duration, but happily the patient was spared it all. The apparatus employed was one invented by Mr. Bell, Chemist, of Oxford street, who was present, and assisted Mr. Tomes in its application.—*Medical Gazette.*—[The same journal gives an account of the performance of the Cæsarian operation on a crippled woman, with equal success.]

ETHER APPLIED TO VETERINARY SCIENCE.

The vapor of sulphuric ether has, we hear, been employed at the Royal Veterinary College, Camden Town, on a sheep and a horse, with the most decided success. The first-named animal

was affected, and had been for many months, with an incurable disease of the hock-joint. The pain was so severe that the poor sheep was quite unable to put her foot to the ground without experiencing much suffering. On being brought into the theatre she was caused to inhale the vapor of ether through a tube, and in about five minutes after it was evident that she was under its influence. The leg was then amputated by Mr. Simonds at the thigh without the slightest indication of any pain whatever. The operation occupied about six minutes, and within twenty minutes from the commencement the animal was removed from the theatre restored to sensation and consciousness. The horse was laboring under a chronic affection of the near fore foot, commonly known by the name of the "naricular disease," for which the operation of "unnerving" is generally resorted to as a remedy. This is necessarily a very painful operation, and often-times the operator has to contend against the violent struggles of the animal, particularly at the instant when the division of the nerve is effected. In this case the ether vapor was inhaled for about thirteen minutes, when the horse fell forwards, and the nerve on each side of the leg was divided by Mr. Spooner without the least manifestation of pain; a slight convulsive action of the limb, similar to that which takes place when a nerve of a recently killed animal is cut through, alone giving indication of any sensation. Within twenty-three minutes this animal also had perfectly recovered from the effects of the ether. No restraint whatever was resorted to to keep the animals in the required position for these operations, and the inhaler employed was not one invented for the purpose, but an apparatus temporarily adjusted by Mr. Morton until a more perfect one was obtained.

(Douglas Jerrolds's (London) Weekly Newspaper, Jan. 6th, 1847).

SURGICAL OPERATIONS RENDERED PAINLESS.

On Monday Mr. Herapath, of Bristol, wrote a letter to the *Daily Times*, setting forth the importance of the discovery of the inhalation of ether vapor. We give from the *Bristol Mirror* the details of an operation to which Mr. Herapath alluded:—On Thursday, a young man, a patient at the Bristol General Hospital, had his left leg removed above the knee, rendered necessary by a white swelling, of three years' standing. At the suggestion of Dr. Fairbrother, the senior physician to the hospital, Mr. Lansdown, the operating surgeon, was induced to try the effect upon the patient of the inhalation of the vapor of sulphuric ether. By this mode the patient is thrown into a state of utter insensibility, by means of the bladder used in imparting the laughing gas, into which Mr. Herapath introduced the ether, and caused the patient

to inhale the vapor. After one minute and a half the patient was unconscious; the surgeon then commenced his incision. After the lapse of two or three minutes, Dr. Fairbrother again administered the vapor, keeping his finger upon the patient's pulse, and watching his breathing. Alternately wine was administered in small quantities with the vapor, which kept him in a state of unconsciousness for the period of fifteen minutes. The limb was then separated from the body in one minute. During the operation the features of the face did not express the least pain, and the patient remained motionless. After the operation he awoke perfectly quiet and calm, and said he had not felt any pain, either in cutting through the skin, flesh, bone, nipping the bone, or tying the vessels, some of which required to be dissected from the nerves, which is exceedingly painful. This is the second time, we believe, this process in amputation has been used in England. In America it has been resorted to for the purpose of large and painful operations, which are performed rapidly, and do not require any very nice dissection, the effect passing off in from two to three minutes. By the satisfactory experiment now before us, as administered by Dr. Fairbrother, it is manifest that this inhalation of the vapor can be satisfactorily applied to operations of a long and painful charracter, and it may also be employed for the alleviation of pain in the medical cases. The patient has slept better than he had for ten nights, and is going on favorably.

RESULT OF AN OPERATION AT THE RICHMOND HOSPITAL, DUBLIN.

On Friday week, the arm of a girl, whose general health was very bad, was amputated by Dr. M'Donnell. After the proper inhalation of the ether by the patient, the several stages of the operation were proceeded with, the girl all the time evincing no evidence of consciousness. The integuments and muscles were cut through, the bone was sawed across, and the amputated arm laid aside, the patient continuing to all appearance ignorant of the whole proceeding. The several stages occupied something more, we believe, says the *Freeman's Journal*, than a minute and a half, after which more than two minutes elapsed before the patient evinced any symptoms of returning sensibility. When she first became conscious, the operator was tying one of the bleeding vessels. This she felt, and described her sensation accurately, she also complained of a sense of smarting, such as is usually felt after an incised wound, over the surface of the stump. She was perfectly conscious during the dressing of the stump, and her sensations at the time in no way appeared to differ from those of patients operated on in its usual way. She appeared, however, to suffer

less, and was less agitated, than other patients. Since Friday the patient has been doing well. No bad symptoms have appeared — none of any character attributable to the inhalation.

VAPOR OF ETHER IN SURGICAL OPERATIONS.

An accident occurred to a man at the St. Helen's Auckland Colliery, on Tuesday last, requiring the amputation of his leg. The inhalation of the vapor of ether soon produced insensibility, and the operation was proceeded with, the first steps of which were not attended with the slightest pain. Consciousness returned before the operation was quite completed, when the usual amount of pain was experienced. The medical men present, Messrs. Hutchinson, Jobson, and Kilburn, were satisfied with the wonderful effect of the ether, and attributed the partial failure to the imperfection of the apparatus procured on the emergency.— *Newcastle (England) Journal.*

(Extract from a Paris Letter in the Boston Atlas of Feb. 23, 1847.)

The inhalation of ether, preparatory to surgical operations, was fully discussed at a recent meeting of the Academy of Sciences, M. de Beaumont reading two interesting letters addressed to him on the subject by Dr. Jackson, of Boston. "The general opinion seemed to be," says the secretary's report, "and the names of some of the most eminent surgeons of Paris were given as authority for this opinion, that in ninety-nine cases out of a hundred, complete success may be obtained, if a proper inhaling apparatus be used, and the ether be pure and highly rectified, and that with such precautions no danger is to be apprehended, in one case out of ten thousand." The vapor has been used in all the hospitals, and some most remarkable operations have been successfully performed, while the patients were insensible after inhaling it. A Mr. Granier de Cassagnac has published an article in the *Presse*, claiming to have made the discovery seventeen years since, and published an account of it in the *Journal, Politique et Litteraire de Toulouse.*

His pretensions fell dead, without any one even offering to contradict them — even Galignani's Messenger continuing to speak of the new treatment as an "American discovery." Besides, it was first communicated to the French public by a letter from the United States, published in the Messenger, and translated into the morning papers; and first tried here by an American dentist, Dr. Brewster, who continues to use it with great success — thus adding another leaf to the wreath of fame which has been awarded him. He is, undoubtedly, the most popular dental practitioner in Paris.

(London Lancet, Jan. 16, 1847.)

Some hundreds of operations without pain have been performed in America. Capital and minor surgical operations have been performed in this country, at University College Hospital, King's College Hospital, Guy's Hospital, St. George's Hospital, the Bristol General Hospital, Birmingham, and Wolverhampton, and by many individuals in private practice, and the operations are increasing in number daily, so that there can be no reasonable doubt of the reality of the new mode of producing temporary insensibility to pain. Medical men have always been seeking for this priceless treasure to surgery. The greatest members of our profession, in ancient and modern times, have sought, and hitherto sought in vain, for any practicable and safe method of conquering the horrors of the operating-room. Up to this time there were no means of alleviating pain, except the administration of narcotics and intoxicating drinks, the compression of the nerves, celerity in operating, and the division of the nerves at the first stroke of the knife. It at once stands confessed, that the inhalation of sulphuric ether vapor for a few minutes, which is found to produce a transient but total suspension of sensation, without any ill result, is vastly superior to all measures previously devised for this purpose. As to the possibility of fallacy, there can be no doubt that the most terrible operations are much less painful, in reality, than they are imagined to be; that, in fact, the emotion of fear supplies the greater part of the pain suffered under the operating knife. Hence men and women with strong power of will have often had the most formidable operations performed upon them without a murmur. In such cases, it is not merely the heroic endurance of pain, but the emotion of fear being absent, less pain is actually felt. With timid people, an assurance, or perfect faith, that no pain would be felt, would have much the same effect; but in the case of the operation upon etherized persons, they have been too numerous, and the effects have been too uniform, to admit of any valid doubt respecting the reality of our acquisition, in the inhalation of sulphuric ether vapor, of a new anodyne of great and remarkable power.

The respiration of gasses and vapors is by no means a new idea. At the end of the last century, it is well known that what was called pneumatic medicine, or the treatment of disease by the inhalation of gasses and vapors, attracted great attention. Beddoes, James Watt, and Humphry Davy, devoted themselves to the matter with enthusiasm. It was in the Pneumatic Institution founded by Dr. Beddoes, at Bristol, that Davy laid the foundation of his subsequent fame. Again and again the young chemist risked his life, and on some occasions was barely rescued from death, in his reckless inhalation of gasses which we now know to be poisonous. Davy's investigation of the gasses led to some of the most brilliant discoveries in modern chemistry, and gave the world the safety-lamp as a preservation against the inflammable gasses, but it fell short of the present acquisition. Since the time of Davy and Beddoes, the inhalation of vapors and gasses has been little practiced, except by empirics. Thus it has frequently happened in science: when a few eminent men have, with a kind of æstrum, given their intention, at a particular time, to special subjects, they come to be neglected for a while, from the apparent hopelessness of making out any thing fresh, or of finding a harvest in the fields newly reaped.

An eminent philosopher gave it as an axiom — "Always examine what others reject as worthless;" and it has certainly been in what seems the most inconsiderate sources, that the greatest discoveries have been made. Galileo made his great discovery of the use of the pendulum by watching the swinging of a chandelier. Columbus saw the new world in the float-

ing of a sea-weed; Newton drew some of his splendid discoveries in optics from a soap-bubble; Bell's discovery glanced into his mind from a diagram. But simple as all important discoveries seem in their elements, and when they are known, it is undoubtedly one of the highest faculties of the human mind, to strike out from the observation of common things latent truths never before discerned, and to perceive uses and applications in things trifling or hurtful. And though this faculty of the mind may be exercised for the meanest or the noblest ends, there being a kind of chance or fortune in the results, the world has always measured the fame and reward of such achievements by their utility to the human race. The discovery of Dr. Morton, the hitherto unknown dentist of Boston, more striking to the general than to the scientific mind, will, undoubtedly, be placed high among the blessings of human knowledge and discovery. Sulphuric ether has long been used as an anti-hysterical remedy of ordinary power; the inhalation of the weak vapor of ether was known as a toy, and sometimes used by chemical youths for mere frolic; and it was known also in a concentrated state, as one of the narcotic poisons. By a new and happy application and generalization, this drug, or toy, or poison, has been invested with fresh powers, which almost realize the fabled Lethe. From being one of the playthings of knowledge, it has been metamorphosed to one of its greatest triumphs. It has been at one leap, transferred from the pages of toxicology to the latest, and almost the fairest, pages of the healing art. That its discoverer should be an American is a high honor to our transatlantic brethren; next to the discovery of Franklin, it is the second and the greatest contribution of the new world to science; and it is the first great addition to the medical art.

There can be no doubt of its peculiar applicability to surgery. Some have thought of its extension to medicine; and tetanus and hydrophobia have been mentioned as diseases likely to be benefited by its use, any such trials will assuredly end in disappointment; these diseases being diseases of motion, not of sensation, and remaining with an intensity as perfect during insensibility, as in complete consciousness. It may possibly be used hereafter in some cases of operative midwifery; but here it would have to be tried with the utmost caution, owing to the tendency to convulsions belonging to the puerperal state. Etherization, as far as we yet understand it, simply obviates pain. In all operations, pain is one, and the principal, and perhaps the only, source of shock that may affect the spinal and ganglionic systems after the influence of the cerebrum has been entirely withdrawn. This is is a point which must be made out; if it is found that operations produce some amount of shock, even when sensation is withdrawn, it will then come to be an important question, whether an operation performed with great rapidity produces a lesser or greater shock than one performed with some deliberation.

It is by no means impossible but that it may prove that a sudden operation, a sudden shock, performed even during a state of insensibility, produces more injury than a less hasty one. It must be confessed that this question has been in some measure lost sight of, and that celerity has been the prime and great object with operative surgeons. We have said that in surgical operations the great object is to escape the pain; but in some diseases and states of the economy, the presence of pain may produce beneficial results; the existence of physical pain may excite some physiological action beneficial to the patient. We may take an instance of this in parturition. Where there is danger of laceration, the pain excites the patient to cry out, and when the cry opens the glottis and emits the air of the chest, the thorax is no longer a fixed point for the muscular

actions, so that a sudden removal of the pressure, threatening laceration, occurs. This instance is sufficient to show that even pain is not in all cases an unmitigated curse.

ACADEMY OF SCIENCES, SITTING OF JANUARY 25.

Several communications were received relative to the effect of the inhalation of ether, preparatory to surgical operations. Amongst them were accounts of the experiments of Drs. Velpeau and Laugier, which we have already mentioned. M. Gerdy communicated to the Academy the following account of the sensations and results produced by the inhalation in an experiment upon himself. After stating that he inhaled the ether through the tube of a bottle containing about one litre and a half, he says: "The irritation which I felt at first in the throat made me cough; but, being resolved to resist, I soon triumphed over this little obstacle. The irritation and cough gave way as the inhalation continued. I next experienced a numbness of the head, attended with heat, as if the vapor of alcoholic and intoxicating liquor was mounting to the brain. This numbness extended itself rapidly, first to the feet, and then to the legs and arms, and next to the loins, and increased rapidly with each inspiration. In the sensitive organs it was attended with an agreeable sensation of heat, and of vibration similar to that which we experience in touching a vibrating body, such, for instance, as a large bell when struck by its hammer. When these two sensations reached their maximum, I experienced an impression both agreeable and voluptuous, like that of intoxication. It is the numbness of which I speak which diminishes the pain in operations. My sight was not sensibly benumbed; the hearing was more so, and it became more and more feeble as the intoxication increased. I convinced myself, however, that the smell, the taste, and the touch, properly speaking, were not paralysed by the general numbness which came over me, but my eyelids became heavy, and I felt a desire to give myself up to the charms of my intoxication." — *French Paper.*

From the London Medical Gazette.

THE CÆSARIAN OPERATION.

The subject of this case, a dress-maker, aged 27, of a mild disposition, is only four feet one inch in height on account of the great distortion of the pelvis and lower limbs from rickets during childhood. Her general health is good. She was not aware of being pregnant until the seventh month, when she consulted a surgeon, who, conscious of her dangerous position, sent her to Mr. Sakey, unto whose care she was admitted into St. Bartholomew's Hospital. It was recommended no operative proceeding should be adopted until the full period of utero-gestation; and that the Cæsarian section would then be the most proper measure. The nature

of the case being fairly and fully explained to the patient, she readily consented to undergo any operation which offered the best chance of relief. At 2 o'clock in the morning of the 25th January, she was awakened from sleep by the commencement of labor. The operation, therefore, was no longer delayed. The vapor of ether was inhaled by the patient for six minutes before its effects were manifest, an incission eight inches in length was made down to the linea alba, commencing two inches above the umbilicus, and terminating two inches and a half above the pubes. The linea alba was then divided to the same extent on a broad dinetor. Adequate pressure over the front and sides of the abdomen was necessary to prevent protrusion of the intestines. An incision from five to six inches in length was then made into the lower axis of the uterus, from which a well-formed, healthy-looking female child was easily removed. The placenta was extracted shortly afterward. Thus far the operation lasted six minutes. Immediate contraction of the uterus to one-half its previous size followed the removal of the child. The free veneous hemorrhage which took place from its cut surface was arrested by cold water and pressure between the hands. In half an hour the uterus had contracted to such a size as to render its replacement within the abdomen safe. It may be as well to observe, that the inhalation of the ether, produced insensibility to the pain of the first incision. Its prolonged exhibition was not allowed, lest it might possibly interfere with the contraction of the uterus.

Without ether, the pain in this case must have been most severe, and, from the circumstances mentioned, of more than ordinary duration, but happily, the patient was spared it all. The apparatus employed was one invented by Mr. Bell, chemist, of Oxford street, who was present and assisted Mr. Tomes in his application.

VACCINATION AND LETHEON.

When Jenner discovered vaccination, there was the most fearful and sturdy opposition made to its introduction. It was denounced by some as an attempt "at once impious and unavailing, to counteract the visitations of an all-wise Providence," asserting that in adults who submitted themselves to it, "the crime was that of suicide," but to apply it to children "was horrid murder of the little unoffending innocents." Its abettors were denounced from the pulpit as "sorcerers and atheists," and one clergyman declared it was *no new art*, for "*Job had been inoculated by the devil.*" A member of the *medical* profession, Dr. Pearson, (not Prof. W., of the *dental* profession,) *lectured* on the subject, and sent out circulars offering to distribute the matter to all who applied. A pastor in Frankfort, Ehrmann, undertook to prove from Scripture, and the writings of the fathers, that "vaccine was nothing less than Antichrist." The leading physician of Philadelphia pronounced it to be "too beastly and indelicate for polished society." A Dr.

Rowley, of London, the bitterest opponent, said, "the world did not require cow-pox; the cow-pox was *forced* into the world. Earth trembled! and Heaven profusely shed tears." A lady also objected to vaccination because, she said, that since her daughter was vaccinated, "she coughs like a cow, and *has grown hairy all over her body.*" In another place, it was discontinued because the persons vaccinated were said to "bellow like bulls."

The Letheon, in like manner, has been objected to, generally, on equally absurd and frivolous grounds. One man, a *very* distinguished professor in a —— College, Dr. W., of "Sucking Bottle" renown, objects to this new and *unique* agent for alleviating pain, because he himself once sucked a bottle containing ether, *fifteen minutes*, without *going to sleep*. Probably this was before the Professor arrived at his present high standing, at a time when the introduction of the "Sucking Bottle" in "social purposes" would have been quite essential to his anxious nurse. Another, and himself, like his prototype, a "leading physician of Philadelphia," who opposed vaccination, objects to the use of the Letheon because his patients cannot bellow like the "bulls of Bashan," asserting that it was extremely wicked not to let these unfortunates know what was done to them, and to make all the noise they could. This was his objection.

It has ever been the case that narrow minds are jealous of and enraged against those who are so fortunate as to make any valuable discovery by which human misery is lessened, or mankind benefitted in any way. It is very natural that men should feel as the doctor above referred to did when he said, "Cow-pox was *forced* into the world!" There are parallel cases witnessed in Boston, in Philadelphia, in Baltimore, and elsewhere, of men who, too obtuse to "know when good cometh," or too dull to invent any thing themselves, hate or oppose any one who may be more fortunate. But what is the enmity of such men! They will be forgotten as the traducers and opposers of Jenner, of Harvey, and of Gallileo are forgotten, or only remembered to receive the contempt of mankind. Let them rave out their day; and in the mean time this new use of ether will spread over Europe and the civilized world, as it has already spread over Great Britain and France. Or let them parade their arguments in opposition to this use of ether and their memories may possibly be preserved by it, as "flies are preserved in honey." W. R. N.

(From the London Punch.)

Punch, speaking of the inhalation of ether, says: "As the plan is calculated to prevent pain in all cases of *removal*, we should recommend its being tried on the next occasion of a removal from office by her majesty's ministers. This has always

been a most distressing operation, from the suffering it has afflicted on the parties concerned; and all the friends of humanity must be delighted at the prospect there is of its becoming an entirely painless proceeding."

(From the Illustrated London News, Jan. 9, 1847.)

THE NEW MEANS FOR RENDERING SURGICAL OPERATIONS PAINLESS.

Last week, the first experiment was made in this country of employing the inhalation of the vapor of sulphur ether as a means of rendering surgical operations painless. The application is of American origin, and was first introduced, a few months since, by Dr. Morton, a dentist, of Boston, U. S., by whom it was communicated to Dr. Boott, of Gower-street. By this gentleman the discovery was described, on the 17th of last month, to Mr. Robinson, the surgeon-dentist, also of Gower-street; who, on the following day, operated upon a young lady thrown into sleep by the inhalation, during which a molar tooth was extracted from her lower jaw.

The inhalation occupied a minute and a half, and the patient's recovery from sleep another minute. Dr. Boott questioned her respecting the tooth, and she expressed her great surprise at finding that it was removed. She said that all she had felt was merely a sensation of cold around the tooth, a sensation which was caused, perhaps, by the coldness of the extracting instrument.

The apparatus employed consists of the lower part of Nooth's apparatus, with a flexible tube, to which are attached a ball and socket valve and mouthpiece, similar to those commonly used for inhalation. The apparatus has been constructed by Mr. Hooper, of 7, Pall Mall East, according to Dr. Boot and Mr. Robinson's instructions: it is very elegant in appearance.

The apparatus has since been successfully used in operations at King's College Hospital, by Mr. Ferguson; and, on Thursday last, by Mr. Aston Key, at Guy's Hospital: among other cases was the removal of an abscess from the great toe of a female: in this case the means was not entirely successful, for the patient screamed at the moment of the first incision of the instrument, but, on recovery from the effects of the inhalation, was totally unconscious of the operation having beeh performed.

The full effect of the vapor is produced in from one to two or three minutes generally, and, as soon as it is perceived, the operation is performed. The inhalation of the ether may be renewed at the will of the operator.

(From the Atlas of Feb. 24.)

Extract from a private letter by an eminent London Surgeon to a friend in this city:

"The surgical operations without pain form one of the most interesting topics of conversation here; their success seems complete. Dr. Boott was, I believe, the first to receive the information from America, and he instituted experiments immediately. It has been said that our most eminent surgeon, Sir Benjamin Brodie, by some former experiments on the effects of inhaling ether, led the way to this great discovery; but witness a passage in his discourse delivered at St. George's Hospital so lately as the 1st Oct., 1846. He is speaking only of Mesmerism:

"There is no greater desideratum, either in medicine or surgery, than to have the means of allaying or preventing bodily pain, not only in cases of surgical operation, but in other cases, also; but there is too good reason to apprehend that it has not been reserved for the revival of animal magnetism under a new name, to accomplish that for which all physicians and surgeons have been looking in vain, from the days of Hippocrates down to the present time."

(From the London Times, Jan. 21, 1847.)

PAINLESS SURGICAL OPERATION.

The importance of the new discovery by means of which patients about to undergo surgical operations are thrown for a time into a state of insensibility, is becoming more and more acknowledged. The principal surgeons of all the London hospitals have already given in their adhesion to the opinion that, properly regulated, the inhalation of the vapor of ether is perfectly harmless, and scarcely a day passes without operations being performed on persons under its influence. A very important and highly successful instance of its application occurred yesterday at the Westminster Opthalmic Hospital, where Mr. Charles Guthrie, one of the surgeons of that institution performed the operation of lithotomy on a young man with the most complete success. The patient was a man of rather spare figure, and aged about twenty-five: at three years of age he had suffered from a stoppage of the urinary passage, but by the application of the ordinary instrument he was relieved, and until about three years of age he had been free from the disease. Three years since he was again attacked; but wanting courage to undergo an operation, he bore his infirmities for some time, and was at length temporarily relieved.

During the past six months, however, he has been suffering the most excruciating torture, and the presence of a calculus in the bladder having been ascertained beyond all doubt, he was advised

to submit to an operation while under the influence of etheric vapor. Mr. Guthrie having obtained his consent, yesterday was appointed, and shortly before two o'clock the patient was brought into the theatre of the institution, where a large assemblage, including several personages of distinction and eminent medical men had previously arrived by invitation.

Among those present we observed Prince Jerome Buonaparte, Lord Dalmeny, &c. The patient having been placed on the operating table, the apparatus by which the vapor is inhaled was applied to his mouth. For some moments it had no perceptible effect; in about two minutes a want of consciousness became perceptible to the observer, and in less than four minutes the patient was in a perfect state of insensibility. The operation was now commenced by Mr. Guthrie and in about three minutes a rough stone considerably larger than a hazel nut was extracted from the bladder. Another minute and the operation was completed, the patient not having betrayed the slightest symptom of pain from its commencement to the close. On being removed from the table, the poor fellow remained in a state of unconsciousness for a few moments; but after the lapse of about four minutes, during which interval he had been placed in bed, he regained his senses perfectly. On being questioned by Mr. Guthrie as to whether he was conscious of what had taken place during the preceding few minutes, he replied that he was cognizant of nothing save having enjoyed a pleasant dream, in which he had fancied himself at his native village in Norfolk His pulse, it should be stated, remained perfectly calm; and so far as could be ascertained, he had suffered no inconvenience from inhaling the ether. It is needless to say the result was extremely gratifying to all assembled, and to none more so than the operator himself.

(From the London Times, Jan. 29.)

THE NEW ANTIDOTE TO PHYSICAL SUFFERING.

The "Edinburgh Witness" of Wednesday last gives the following remarkable instance of the successful application of ether in destroying the sensation of pain: — "Another experiment with the inhaling of ether was made at the Royal Infirmary yesterday by Professor Miller, and proved eminently successful. The patient was a middle sized Irishman, who had sustained compound fracture of the leg nine weeks before. The fracture had not united in consequence of the presence of a dead piece of bone, and it became necessary to remove this by a painful operation. The patient was seated at a table, and the inhalation was applied by means of a very beautiful yet simple apparatus made by Squires of London, and which we understand had been sent to Professor

Miller by Mr. Lisbon — a very suitable gift, under the present circumstances, from that eminent surgeon to his old pupil.

At first little effect was produced, but after some minutes the patient fell backwards as if in a swoon. The operator was then about to proceed, but the man immediately objected, saying that 'he was n't asleep.' For full twenty minutes more the inhalation went on, the man confused and talkative, but wide awake, and occasionally expressing very emphatically his conviction that 'it would not do.' At length, however, while in this wakeful state the operation was begun. Incisions were made on the skin, and flaps were dissected off so as to expose the bone beneath. A portion of this was sawn and clipped through, and then the dead bone was removed. Only during the clipping the bone with strong straining pliers did any sign of feeling escape from the patient, who was busy inhaling all the while, and now and then protesting that 'it would not do.'

The operations occupied about ten minutes, and from the highly sensitive nature of the parts implicated, must have been attended with excruciating suffering under ordinary circumstances. After it was over, the professor said to the patient, 'I suppose you won't let me operate to-day?' 'Certainly not,' said the patient, 'it won't do, I must be asleep: the thing has not succeeded with me, and I am sure it can't succeed with any body else; for I did every thing I could to get asleep for my own sake, and I'd do any to please you.' 'You won't even let me make a cut in your leg?' 'No, I must be asleep. We can try it another time.'

The plain proof of his utter unconsciousness of the operation having been performed was acknowledged by the spectators in a hearty round of applause. The patient then got up, and seeing the wound, burst into an immoderate fit of laughter, saying, 'No doubt there's blood, or something very like it; but I hav n't felt a single thing done to my leg, that *bates* the globe.' And on being asked decidedly as to his having felt any thing, he repeatedly answered, 'Not a ha'porth.'

He got into amazing spirits, and refused to leave the table until he had 'told all about the toldrums of the business;' and then with the manner of a tipsy man, and very happy, he kept surgeons and students in a roar of laughter for some minutes with a narrative of his condition during the inhalation, which, Irish like, seemed to have been a strange medley of imaginary fights and 'killings' going on around him, but wholly irrespective of his own leg and the operation. On being carried out he declared triumphantly, "This is the very best thing that has ever happened in the three Kingdoms." The Professor stated that he had considered this case quite conclusive as to the powers of the ether, because there was no more painful operation in all surgery and because the patient having been avowedly a hard and habitual drinker of ardent spirits was one of these persons who are the least susceptible to

the ether influence. The whole proceedings seemed to give the greatest satisfaction to the medical and surgical officers of the Institution, and to a large share of the interested spectators. Perhaps the most remarkable thing in such a strange tale is the circumstance of the man being so wide awake and talkative while all the while quite insensible to the cutting of his limb.

From the London Medical Gazette.

MIDDLESEX HOSPITAL.

On Monday last, at the Middlesex Hospital, the efficacy of the ether was put to as severe a test as it has yet been subjected to. A man of 68 had been admitted with symptoms of stone and diseased bladder; so much pain, straining and struggling attended the attempts at sounding, that it was with difficulty satisfactorily accomplished. The verical tenesmus was incessant, amounting to total incontinence of urine. Endeavors were made for several weeks to allay this extreme irritability, so that some urine might be retained, or some water received as an injection, but in vain; neither could be endured, lithotrity was consequently out of the question; and Mr. Arnott determined to perform the operation of lithotomy, unpromising as the case was, but, if possible, whilst the patient was under the influence of the ether. In seven minutes from the commencement, not in reality only two from the effectual inhalation, its influence was obtained. The catheter was then introduced, and some water attempted to be injected, but not above two or three ounces could be borne, and this retained by pressure, was ejected immediately on the introduction of the staff, which, owing to the state of the parts, was effected with some difficulty, and consequent delay; the bladder was cut into; the stone was grasped at once, but crumbled under the forceps, requiring their re-introduction several times; the scoop was employed to remove calculous matter like mortar; and lastly, the bladder was injected four or five times so as to wash it out. During the whole time, from first to last, the patient gave not the slightest indication of suffering; indeed it was not until he was removed to bed and had been some time in it, and taken some brandy ammonia, that he did so, and then of soreness merely. Nor was the influence of the ether limited to this, its anodyne effect was maintained during the evening, the man remaining in a dreamy and "very comfortable state," as he termed it. He declares he suffered no pain; he knew that something was being done, but he recollects nothing distinctly "after blowing the horn." Up to this, Wednesday evening, he is going on very favorably.

(From the Liverpool Mercury)

PAINLESS SURGICAL OPERATIONS AT LIVERPOOL.

Cure of Blindness. — Yesterday, at the Eye and Ear Infirmary, No. 90, Mount Pleasant street, a series of very important and interesting operations were performed by Hugh Neill, Esq., the honorary surgeon, for the cure of cataract and other diseases of the eye, some of the patients being in a state of unconsciousness to pain, produced by the inhalation of ether vapor. With the view of removing the impression which generally prevails, that operations for the cure of blindness are attended with great pain, the gentlemen connected with the press of the town, and a select company, were invited to attend.

The first patient operated upon was John Davies, horse-shoer. He had a cataract in the left eye, which had been injured by a kick from a horse. The ether, which was administered by Mr. Higginson, surgeon, was placed in a bag, the mouthpiece of which resembled that of a speaking trumpet. The patient, who appeared a little excited, inhaled the vapor without producing insensibility, but the operation was skilfully performed in one minute, and a half, the man afterwards stating that he had experienced little pain.

The next patient was William Massey, aged 66, from Runcorn. He had been blind in the left eye for six months, and the right eye had been diseased nearly all his life. When the right eye was closed he could barely see a man standing in the window before him, and it was with difficulty he could discern two fingers held close to his eye. This operation was for a hard canticular cataract. As soon as the patient had inhaled a little of the vapor he called out "You'll have me drunk!" "Oh, you blackguard!" "I know what you are!" The inhalation, which at first produced coughing, occupied two minutes, and the operation only one minute. Although the patient appeared to know what was passing around him, and attended to what was said to him, he did not display the slightest symptom of pain, and when he recovered he stated that he had felt no pain whatever, although the operation had restored the sight of his eye. This operation was considered highly satisfactory by the medical and other gentlemen present.

Jane Evans, a young woman from Runcorn, who had been thirteen years blind in the right eye, was the next operated upon for soft cataract. After inhaling a little, she called out, "O dear, I am falling" and the vapor subsequently produced hysterics. In this case Mr. Neill had to operate with the left hand and break down the cataract. He did so, however, successfully, the operation only lasting one minute, and the young woman stated she experienced no pain from the use of the instrument. After the operation she still retained the sensation of falling, but a glass of wine restored her to perfect consciousness.

Mr. Yanicuicz applied the ether in the next case, that of Robert Maclaughlin, aged thirty-seven, who works under Mr. Jesse Hartley. The patient was a very strong man, and the ether did not appear to take proper effect upon him. After the operation he said he had felt pain, and preferred the old system, thereby intimating that that was not the first time he had been operated upon.

Ambrose Rossiter, aged 25, of Birkenhead, was next operated upon for strabismus or squinting. This is generally considered a very painful operation, the breaking up of the muscle, and the cutting it off, trying the nerves of the stoutest. It was in this instance, however, very skilfully performed in one minute and a half, the patient stating at the close that he had only experienced a slight pain at the conclusion. On being removed from the room, however, he appeared to be still laboring under the effects of the ether, and said no operation had been performed. Upon looking at the eye all present could perceive that it was perfectly straight.

From the London Lancet.

The discovery of Dr. Morton, the hitherto unknown dentist of Boston — more striking to the general than to the scientific mind — will, undoubtedly, be placed high among the blessings of human knowledge aud discovery.

That its discoverer should be an American is a high honor to our Transatlantic brethren; next to the discovery of Franklin, it is the second and greatest contribution of the New World to science, and it is the first great addition to the medical art.

A patent has been taken out for the discovery, the American patent standing in the names of Dr. C. T. Jackson, of Boston, one of the most celebrated physicians in the United States, and Dr. Morton, the discoverer. If it should realize all the present anticipations of temperate and calm-judging men, the thing is far too noble to be clogged with a mere commercial transaction. Dr. Morton deserves, if his discovery stand the test of time, the gratitude and reward of every civilized people and government upon the face of the earth: he will have, we should hope, too strong a claim on their spontaneous gratitude, to need to resort to compulsory reward. How much more imperative would his claim be than the demands of those who have merely invented some new engine of destruction!

SURGICAL OPERATION WITHOUT PAIN.

A successful application of the vapor of sulphuric ether was made on Friday afternoon, at Westminster Hospital, where a part of the thigh bone was removed by Dr. Snow, from a patient suffering from a necrosis. The operation lasted seven minutes, during which time the patient remained unconscious of pain.

PAINLESS OPERATIONS UNDER THE INFLUENCE OF ETHER.

Westminster Opthalmic Hospital. — This institution was again yesterday the scene of three operations on patients while under the influence of etheric vapor. The cases being of a serious nature much interest was excited, and the theatre was very full of medical and other gentlemen. Among those present were Sir Charles Napier, M. P. Hon. H. Fitzroy, M. P., Hon. Rice Trevor, M. P., Sir Henry Hunlake, Bart. Sir Henry Webb, Bart. Captain Otway, Mr. Henry Trenwick, Mr. Hale Thomson, Mr. Lewis Powell, Mr. Guthrie, &c. The first patient was a female suffering

from cancer in the breast. She entered the theatre at a few minutes after two o'clock, and took her seat in the operating chair without any manifestation of fear. Mr. Hooper was in attendance with his apparatus for administering the ether, and the mouthpiece having been properly applied, in a very few minutes the patient was in a complete state of insensibility. Mr. Charles Guthrie, who again operated yesterday, immediately applied the knife, and having laid bare the right breast, in which the cancer existed, proceeded to cut away the whole of the diseased parts, an operation which he performed with remarkable skill and dexterity. During the whole time the patient exhibited no symptoms of pain. Her eyes remained open, and as the ether was now and then applied to her mouth, she called out sharply "Take that away!" "take that away!"

In the midst of the operation she was asked if she felt any pain, when to the utter astonishment of all present, she pointed to a window partially lowered opposite to where she was seated, and said "I feel that window." The sash was immediately raised and the poor creature appeared satisfied. The operation lasted five or six minutes, and at its close, after the wound had been sown up, the patient fainted for a few moments, but soon recovered, and on learning that the cancer had been removed, she said emphatically several times, "I am *very grateful* to you gentlemen, I am *very grateful.*" Several of the spectators, incredulous of what they had observed, pressed towards her, and inquired whether she had not suffered very much during the operation; she replied alike to all that she had been quite unconscious of what had been going on. The poor creature was sufficiently recovered in five minutes to walk out of the theatre almost without assistance. The cancer removed weighed about four ounces, and was one of the most dangerous description. The next operation was the puncture of a very large tumor in the neck of a man, about forty years of age, from which nearly a pint of fluid was extracted. The incision made by the lancet was nearly two inches deep, but the patient was entirely unconscious of the application of the instrument, though he recovered within a few moments after it had been withdrawn. A gentleman suffering from severe toothache next submitted himself, and having been duly prepared, a large double tooth — the seat of his affection — was removed by a professional dentist. This case was not quite so satisfactory as the preceding ones, the patient remaining some time in a state of

sensibility. A fourth case — one of a most serious description, viz. the removal of a tumor attached to the upper jaw and lachrymal bones of a young woman — was brought into the theatre; but Mr. Hooper first, and subsequently Mr. Robinson, refused to apply the ether to the patient, fearing that the operation was of too serious a character to attempt. Mr. Guthrie was evidently surprised, though nothing daunted by the refusal, and without allowing the patient to leave the theatre he at once removed the diseased parts to the perfect satisfaction of all present. — We understand there is every hope that the patient will do well, though she has lost a great quantity of blood, and is not of a healthy constitution. Mr. Guthrie, Sen., was present during the whole time, and had the satisfaction of witnessing his son's success. Mr. Hancock assisted Mr. C. Guthrie in the operations.

(From the Bury Herald.)

On Monday last a large assemblage of the professional gentlemen of this vicinity took place at the Suffolk General Hospital, to witness the operation of removing a tumor from the breast of a female while under the influence of ether. Some difficulty was experienced in bringing the patient fully under the influence of the ether; but this was at length effected, and she was laid back on the pillows in a state of complete insensibility. The operation was then commenced, and the tumor, about the size of an orange, was rapidly removed by Mr. Image, the patient making only an indistinct moaning noise. As some dissection was necessary in order to separate the diseased part, the woman had a second application of the inhaler, so that the insensibility was maintained as long as was required. And now came the most interesting part of the procedure. A towel having been laid over the bosom, so as to conceal the effects of the operation, and the patient having recovered her senses, Dr. Perkins asked her how she felt, and whether she was now ready to undergo the operation? She replied that she was quite resigned and willing; that she knew that it must be painful, but that Mr. Image might commence as soon as he liked. This answer was elicited from her several times by Dr. Ranking, that the spectators might have a full opportunity of ascertaining that she

was perfectly unaware of any operation having been performed. Dr. Ranking then informed her that the tumor had already been removed, and that nothing more was to be done, upon which her countenance put on an expression of delight, and grateful astonishment which it is impossible to depict. In fact, she appeared quite incredulous, until she had raised her head, and herself inspected the wound, when she could not sufficiently thank those around her for having been spared an amount of suffering which she had justly supposed would, under ordinary circumstances, have been extreme. Nothing could, in the estimation of the majority present, have been more demonstrative of the power of this agent than the present case. It was one which required careful dissection, and was not, therefore, so rapid as others. The expression of willingness to submit to the supposed impending operation was genuine, as were also the incredulity and subsequent gratitude. The woman has since positively declared, that "she *felt nothing*, but was in a dream, and taken away from the present world." Her pulse and general aspect were not like those of a person who had so large a portion of the body excised.

The application was tried last week by Mr. Smith, at the Hospital, in a severe case of cancer on the lip, but the symptoms of congestion of the brain were so apparent, that he thought it more prudent to delay the operation. Several successful cases of extraction of teeth have been performed at the same institution, under the influence of the vapor; and it has been repeatedly tried upon a medical student for the purpose of showing the insensibility to pain, which it produces, and the general harmlessness of its operation.

Ether Vapor — The introduction of sulphuric ether is not a new remedial agent, for it was used many years ago to lessen irritation in the chest in the latter stages of pulmonary disease. The late Dr. Daniell, of this City, (Exeter), frequently ordered it, and it has also, we understand, been frequently used by other medical practitioners. It is new as regards operative surgery, and there cannot be a doubt, from the cases recorded in the Hospitals of the metropolis, as well as those in the provinces, that it is one of the greatest dis-

coveries of the age. In this neighborhood it was had recourse to some few days since, previous to an amputation, by Mr. Tucker, and the patient, to use her own expression, "scarcely felt the operation." — *Western Luminary.*

LETHEON, SAFE IN 9999 CASES IN TEN THOUSAND.

During a conversation which took place on January 25th at the French Academy of Science, "the question was started as to whether the direct effect could always be produced, (with the sulphuric ether) and whether in some cases there might not be danger in the administration of the ethereal vapor. The general opinion seemed to be, and the names of some of the most eminent Surgeons of Paris were given as to the authority for the opinion, that in *ninety nine cases out of a hundred*, complete success might be obtained if a proper inhaling apparatus be used, and the ether be pure and highly rectified, and that with such precautions, *no danger is to be apprehended in one case out of ten thousand.*"

(From a Letter in the Boston Atlas.)

This great discovery is making quite a sensation in Europe. It is regarded as next to those of Harvey and Jenner. Its use has been introduced into the Hospitals of London and Paris. The distinguished American dentist in Paris, Dr. Brewster, has tried it with perfect success. A medical gentleman from England, now residing here, informs me that he saw the amputation of a limb this morning, at one of the hospitals, and that the patient was perfectly quiet, and unconscious of any pain, by reason of the use of this new agent. He remarked, that the American Government ought to make a grant to the discoverer of £20,000. I told him that perhaps they might do so, at the present time, considering the measure as having reference to the war with Mexico, and to the great relief which this discovery would give to

officers and soldiers wounded and lacerated in battle! He then added that he thought if the American Government should do nothing, a grand subscription should be set on foot, throughout the civilized world, in behalf of this great benefactor of the human race.

THE EMPLOYMENT OF THE VAPOR OF SULPHURIC ETHER, AS A MEANS OF RENDERING SURGICAL OPERATIONS PAINLESS.

Since the publication of our last Number, a most important and valuable discovery has been made, in using the vapor of sulphuric ether, for the purpose of rendering patients insensible to pain during surgical operations. All the professional journals, and the public press, have teemed with instances in which this great discovery has been tested and applied at most of the large hospitals in Great Britain and Ireland; and although the final conclusion to which the profession will come, as to the precise value of this discovery, the cases to which it is applicable, the constitutions over which it exerts its peculiar influence, the precise mode of administering it, and the exact amount of narcotism or intoxication which it is necessary to produce, cannot yet be stated, still we think the following facts and conclusions may be drawn from the experiments which have as yet been instituted.

I. The stupifying effects produced by the inhalation of vapor of sulphuric ether appear to have been occasionally exhibited at chemical lectures.

Its therapeutic agency in relieving pain was also proved more than twelve months ago. M. Ducros, at a meeting of the Academie des Sciences de France, on the 16th of March last, presented a memoir on the effects which sulphuric ether produces on man and some of the lower animals; his mode of applying it was by rubbing the palate, jaws, and interior of the mouth with the fluid, but no doubt the effects were produced by inhalation of the vapor. M. Ducros described with great accuracy the soporific and anodyne effects of the ether; drew attention to the advantages which might be de-

rived from it in a therapeutic point of view, and pointed out to the Academy the best means of removing the narcotizing influence, which sometimes remains longer than is desirable. This antidote is opium and its preparations (a).

II. Doctor Morton, a dental surgeon at Boston, appears to have been the first to make use of this agent as a means of relieving pain during surgical operations, and he soon acquired great and just celebrity in that city, by extracting teeth without the patients, who had previously inhaled the ether, being conscious of the operation. In October last it was applied in the General Hospital, at Boston, with the happiest results; Dr. Morton administering the ether, and Dr. Warren performing the operation. Upon the 3rd of November Dr. H. J. Bigelow read an account of this discovery (which had by that time been tested by many experiments) before the American Academy of Arts and Sciences. This account, and several private letters having communicated the facts to several persons in Great Britain, it was taken up very warmly in these countries, and the results are already before the public; several capital operations have been so performed by the surgeons of this city; and there has been a public exhibition of its effects at a meeting of the Surgical Society. This discovery has been claimed by R. H. Collier, M. D., but the most which his claim amounts to is that of having published in 1843, an account of the unconsciousness which may be produced by the inhalation of ether; but this, as we already stated, was long since known; its application to surgical operations is undoubtedly due to the American dentist, who, with Dr. Jackson, has, we understand, taken out a patent for its discovery.

III. The mode of application consists in the patient's inspiring the vapor by the mouth, while the nostrils are closed, and expiring into the surrounding atmosphere; or inhaling through the nose, and expiring through the mouth, as practised at some of the Parisian hospitals. To effect this various ingenious contrivances have been invented, which have been described and figured by most of our contemporaries.

IV. On commencing to respire it, the patient generally coughs, and feels at first considerable difficulty in continuing the inhalation, but after half a minute or so becomes more

(a) See Gazette Medicale, No. 12, for 22nd March, 1846.

reconciled to it. Immediately before narcotism or insensibility takes place, there is often some struggles, and the application has to be continued by force. Its effects are various, and are very likely influenced by the peculiarity of constitution in different individuals; in some, producing decided narcotism (as it has been termed) in two minutes from the commencement of the inhalation, and causing insensibility for about the same period of time, from which state the person quietly awakes as if recovering from an ordinary faint, and leaving no other ill effects than slight giddiness and headache, which go off in a couple of hours. During this process the following phenomena occur: — At first the face becomes flushed, the vessels of the head swollen and turgid, and the pulse accelerated, as the narcotism proceeds, and immediately after the person becomes unconscious to every thing but sound, and insensible to pain, the pulse diminishes in frequency, intermits with irregular pauses, and becomes very much slower than it was prior to the commencement of the inhalation, the action of the heart is at the same time labored, and in some cases irregular, the voluntary muscles of the body relax as in sleep, the face becomes dead and clammy and the breathing more or less stentorous. At the commencement of the insensibility the eye-balls are spasmodically affected, and in some cases roll in a remarkable manner. As the insensibility proceeds the pupils are dilated and turned upwards.

What would a physiologist, a practical physician, pronounce such a train of symptoms to arise from? By what term could he designate them? Hysterics, syncope, intoxication, asphyxia or apoplexy?

In other cases it requires to be inhaled for a quarter of an hour before producing its effects. Again, there are persons over whom it exercises no influence whatever.

In a few cases that we have heard of, both here and in Paris, it does not appear to have produced unconsciousness, or any of the effects just described, but it rendered the patient quite insensible to pain. This is the most useful effect we have yet heard of, and if it should be discovered by what means this result may be brought about, then, it will prove one of the greatest blessings conferred on suffering humanity.

Some persons describe their feelings while under its influence as of a most pleasing description, having had pleasant dreams during their state of insensibility. Others again say,

they were conscious of all that was going forward, though they felt no inconvenience from the operation to which they were submitted; almost all say that they were conscious of sound, though unable to distinguish conversation &c. In other instances, however, persons do not recover from their insensibility in the quiet, easy manner we have described; a violent struggle takes place, and even a slight convulsion occurs, and movements of the body, quite involuntary, continue for some minutes after.

Again, although the effects may in some constitutions wear off within an hour or two, as already mentioned, in others they are much more violent and of far longer duration, consisting in great prostration of strength, irregular action of the heart, great restlessness and anxiety, headache, sickness of stomach, depression of spirits, and (as occurred in one case) even convulsions; in fact all the phenemona which some constitutions evince from any great nervous shock, and particularly from an over-dose of intoxicating fluid. It is stated that the blood drawn during the state of insensibility is darker than natural.

In a third class of persons a totally different but not less formidable exhibition of morbid symptoms occur, best described as the incoherent madness of inebriety; the eyes roll, the passions are aroused, and a state little short of frenzy ensues. What proportion these latter class of patients bear to the first remains yet to be decided; and by what test we can discover beforehand (except by experiment) what the probable effects of the inhalation will be, has yet to be stated. But then it must be acknowledged that several other medicines produce in some individuals effects just as extraordinary.

Independent, however, of all idiosyncrasies, the surgeon is daily required to perform painful and dangerous operations, not only when the suddenness of the shock recently received is such as to preclude the use of a remedy so overpowering, but also when the condition of the constitution has been, by protracted disease, reduced to a state that would render the exhibition of this substance, should it prove deleterious, highly hazardous.

V. Supposing the mildest case in which the effects are total insensibility for two or even three minutes, with quiet, easy return of animation, what is the benefit, as far as we yet know, which this discovery has conferred on mankind, and

what facilities does it afford the operative surgeon, and to what operations is it applicable? In capital operations, such as the removal of limbs, lithotomy, and all such operations as can be performed within a minute or two by the great manual dexterity of the surgeon, and particularly, tooth drawing, &c., &c., it appears to be of the greatest value; it has been successfully employed in operations for strabismus, and may be useful in other operations (if they be worth the risk) on the eye-lids &c., but in extractions of cataract (a.) or other opthalmic operations where the globe of the eye is concerned, we should fear that it will be highly hazardous.

In any operation which may occupy a greater length of time than the ordinary duration of insensibility, it is less applicable for the action of receiving, and the involuntary struggle which ensues, might prove very hazardous at perhaps the most critical moment; and few have yet been hardy enough to renew the inhalation so as to prolong insensibility beyond a few minutes: moreover cases have been recorded in which the patient, awaking during the operation, suffered as usual.

To the timid, however, and to those also who would not otherwise submit to any operation, it may prove of very great value.

Finding the subject discussed in the public prints, we lately published some remarks upon it in one of our morning papers. These were offered not for the purpose of decrying this valuable means of relieving pain, and lessening the great nervous shock during severe operations — in some of which being performed on a particular class of patients, and capable of being accomplished within a very short space of time, it is highly serviceable — but in order, if possible, to prevent its indiscriminate use. It is possible that accidents may occur in the inhalation of ether, and when they do the presen trage for its application may receive a check. Its ultimate, perhaps persistent, consequences on the constitution have not yet been tested, as also its value in relieving pain and suffering induced by disease. It may also be found highly useful in the reduction of dislocation. We have here endeavored to present our readers with a brief summary of what really is known upon the subject at present.

(a) A case of extraction has just been mentioned in the Lancet, in which the vapor was used effectually; yet this in no wise alters our opinion on this subject.

HOW THE LETHEON WAS DISCOVERED.

It is well known that, for ages, it has been the desire of the humane in all countries to discover some method of alleviating the suffering of those who were about to submit to severe and cruel surgical operations. And amongst others who had given direct thought and attention to this subject, Dr. Morton may be named.

For more than two years he had bestowed much thought upon this important inquiry. At the commencement of that period he was a student of Dr. Jackson, with whom he often conversed on this and similar topics. But it was not till September 1846, that a direct trial was made with sulphuric ether. About that time, Dr. Morton called on Dr. Jackson to get some information in furtherance of his researches; and during the conversation that ensued, in which the topic of the inhalation of sulphuric ether and nitrous oxide gas by the Students at College came up. Dr. M. inquired why he could not give the ether to his patients. Dr. Jackson said he could, and advised him to get some of Burnett highly rectified, at the same time explaining to him the nature of sulphuric ether and its effects, so far as known, on the system, assuring him it might be safely applied.

Dr. Morton procured the ether and returning home locked himself in his room, when he saturated a sponge with it and began to inhale, noting down accurately when the inhalation commenced. Soon he recollects beginning to grow dizzy, when letting the sponge fall, he fell back in his chair, after which he seems for a time to have been totally unconscious. On coming to himself, he again looked at his watch and found to his inexpressible delight that he had been insensible *eight minutes!* He then left his room anxious to try the ether upon one of his patients, when fortunately a stout healthy man appeared to have a tooth extracted. The ether was administered and the tooth taken out, the man avowed a total unconsciousness of its removal! And *this is the first painless operation ever performed by similar means in surgery!*

Subsequently, attempts were made by the same method, but without any satisfactory results, until, at length, after many trials made to produce a proper apparatus, none of which succeeding but partially and after finding the one recommended by Dr. Jackson entirely useless, Dr. Morton arrived at a result which seemed to be what he desired. And from that day the importance of the discovery began to develope itself and the experiments were perfectly successful.

EDWARD WARREN.

(From the People's London Journal, January 9, 1847.)

THE GOOD NEWS FROM AMERICA.

Hail happy hour! that brings the glad tidings of another glorious victory. Oh, what delight for every feeling heart to find the new year ushered in with the announcement of this noble discovery of the power to still the sense of pain, and vail the eye and memory from all the horrors of an operation. And then to find it acted upon almost on the instant by our first operators, is as gratifying as unexpected. We have conquered pain. This is indeed a glorious victory to announce; a victory of pure intellect. And from America comes the happy news; from our brothers in another land, with whom we were lately going to war. Oh, shame be in the thought! This is indeed a glorious victory; but there is no blow struck, there has been no grappling together in the war of savage impulse, no bloodshed, no remorse. It is the victory of knowledge over ignorance, of good over evil: there is no alloy; all our finer sympathies are enlisted in one universal prayer of grateful rejoicing. Benevolence has its triumph. It is a victory not for to-day, nor for our own time, but for another age, and all time — not for one nation, but for all nations, from generation, to generation, as long as the world shall last.

Yet, hark! there is no firing of cannon from the Tower — no banners waving in the air — no drums and fifes sounding before the conquering hero — no hubbub in the streets — no gazing multitudes thronging the towns to see the illuminations; no, these are for the most part but the instruments of war, the loud rejoicing of the passions of men triumphing over their fellow men. We have nothing to do with that now: but only to stretch forth our hand to soothe the agonising wounds the sword has caused, to allay the sufferings of the afflicted, to still the nerve and sense, whilst the knife performs its friendly office.

The rejoicing here is of the heart, in the smile, the tear of joy for suffering relieved, the still voice of the benevolent soul rejoicing inwardly; for to those who can grasp the full sense of the immense boon which has been given to us, it is, indeed, overpowering — the blessing is incalculable. Oh, let there be no exulting over those who have denied the possi-

bility or the blessing of this good : let that pass. We poor despised mesmerisers have fought the good fight, we have gained our end, no matter for the means ; henceforth and for ever operations shall be performed in our Hospitals without pain. Let the joyous news spread quickly from ear to ear through all the length and breadth of the land, and wing its way over the seas from shore to shore. And you, poor sufferers, who are now lying in our hospitals and infirmaries on the bed of sickness, waiting your time for the dreaded operation, hear you the reprieve which has been sent! — fear no more the pain that you shall endure — a sweet oblivion shall steal over your nerves — and it shall all be to you as though it were not — you shall awake — it is all over, you have felt nothing. Go forward, nurse, from ward to ward, from bed to bed, and announce the glad tidings, and cheer the drooping spirits of the sufferer, and raise a load of fear and anguish from the heart. And see — yes the pulse beats tranquilly again : they smile — they press your hand in thankfulness. They are prepared. They are ready now, when you will : the knife is robbed of all its terrors. Poor soul ! and perhaps your hired nurse the only friend you have by to sympathise in your sad condition.

(From the Medical and Surgical Journal, March 9, 1847.)

Surgical Operations after Ethereal Inhalation. — Dr. J. K. Rodgers has lately performed two amputations, upon patients to whom the ether had been administered by inhalation ; one of these being rendered unconscious of pain thereby, whilst the other is represented to have been a failure. Whether it was because it was simply "inhaled from a sponge," without the apparatus contrived at Boston for the purpose, does not appear. The Annalist seems to rejoice that the pure sulphuric ether was used, "*not* the patented Letheon ;" and he records that Mr. Liston, of London did so too. What if it should turn out that the "patented Letheon" is that identical "washed ether?" Then a question of casuistry, which would puzzle a Jesuit, or a Philadelphia lawyer, will have been mooted. Ought humanity to be deprived of this new method of using ether, because one of our Yankee neighbors unluckily patented his apparatus and discovery? The ethics of the profession in such case might

conflict with the will of their patients, and may possibly have to succumb to the latter.

The successful employment of sulphuric ether by eminent surgeons in Europe has served to moderate the vehemence of tone with which the early experiments with this novelty had been denounced.

(Medical and Surgical Journal, March 10, 1847.)

Insensibility to Pain from a Hot Iron. — An exhibition of extraordinary interest to humanity occurred at the Massachusetts General Hospital on Saturday last. A patient was presented — a man in advanced life — who, we understand, was laboring under paraplegia, having its origin in a caries of the lower dorsal vertebra — for which Dr. Warren proposed the actual cautery. After the patient had inhaled the letheon, Dr. Warren run an iron rod, heated to a white heat, to the length of about two feet, up and down the back, each side of the spine, — burning two lines on one side and one on the other, and then carried it zigzag across, between the spinous processes, the same distance. The patient during this process was wholly unconscious of pain under the severest test to which he could be subjected — that of a hot iron applied to the naked skin.

(From the Boston Post.)

The Great Surgical Discovery. — The most eminent solicitor on patents at Washington, and also Messrs. Webster, Choate, and other legal advisers retained by the patentees, have, we understand from a source to be relied on, given their decided opinions in favor of the novelty of the invention made by Drs. Morton and Jackson of this city, by which pain is prevented in surgical operations, and the entire validity of the patients granted by the United States. We also learn that Drs. Warren, Hayward, C. T. Jackson and Morton, each positively denies that this extraordinary invention was ever made known to them by any person prior to its discovery by Drs. Morton and Jackson in this city. B. D.

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