Smilie (E.R.)

AN

ADDRESS:

DELIVERED BEFORE THE CLASS OF THE

CASTLETON MEDICAL COLLEGE,

ON THE HISTORY OF THE

Original Application of Anæsthetic Agents,

MAY 17, 1848.

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BY E. R. SMILIE, M. D.

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STACY, RICHARDSON & CO., PRINTERS,
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ADDRESS.

In addressing you in accordance with an invitation received from your professors upon the still mooted question of "Who first discovered and tested the power of Etherial Vapor, when inhaled, to produce insensibility to pain during surgical operations," it will be my object to present a condensed view of the origin of the idea, aside from its connection with the agents now used, and the persons who afforded direct and indirect aid in testing their capability of being used for that end, without placing in jeopardy the lives of patients subject to surgical operations; in the second place, to present the claims of each applicant for the honor, as they are supported by facts, subject to disinterested proof; and, in conclusion, I shall offer some general views relative to the merit of the discovery.

For the earliest record of the idea of performing painless operations in surgery, from the direct agency of drugs introduced into the system either from the vapor of decoction, or in substance, I am indebted to Professor Simpson, who kindly forwarded to me his communication to the Medico-Chirurgical Society of Edinburgh, entitled, "Historical Researches Regarding the Superinduction of Insensibility to Pain in Surgical Operations," in which he recorded facts to show that the idea had origin as far back as the thirteenth century, when science and art were restrained in their progress by the bonds of ignorance and superstition; as he quotes a passage from the Surgical Treatise of Theodoric, in which is a recipe for the preparation of a scent, for performing surgical operations without pain, called "Sponga Somnifera," which indicates its character, while the intention is plainly described in words. And Mandragora, chiefly relied upon as one of its components, was used much earlier for the same purpose, as he adduced in proof various extracts derived from works of the Augustine age; and further states, that Bang, or Indian hemp, was used for

the same purpose in India from an earlier period. Although they have failed to transmit an account of a successful operation, during which there was an entire freedom from pain on the part of the patient, still there is abundant evidence to prove that the idea was common at different periods, and that operations were actually performed upon persons under the influence of narcotism, induced by inhalation of vapor arising from decoctions and distillations. But the earliest history of the use of ether for the purpose of inhalation was derived from a pamphlet published by Richard Pearson, in 1795, who ascribed to its use favorable therapeutic results, — while the power of producing effects like intoxication, when inhaled, was first noticed by Dr. Godman, of Philadelphia, who recommended it as a substitute for Nitrous Oxide Gas, from the similarity of effect produced by inhalation. But the first knowledge that we have of a recorded suggestion for the use of any gaseous vapor for inducing insensibility to bodily pain in surgical operations, was obtained from the works of Sir H. Davy, published in 1800. And the first practical application of nitrous oxide gas, the agent suggested, in which the purpose was definite, and the result successful, was from the well authenticated experiments of Horace Wells of Hartford, performed during the autumn of 1844. His first experiments were of a satisfactory description, and after having performed test operations, while patients were under the influence of the gas, without their showing symptoms of suffering, he was induced to subject it to the trial of scientific men, and having received the approbation of some of his own townsmen possessed of judgment and standing, he ventured to visit Boston for the express purpose of having it tested at the Massachusetts Gen. Hospital, under the eye of Dr. Warren and other surgeons, that they might judge of its utility in aid of surgical operations; as he was firmly convinced of his success in its administration and consequent approval by the medical profession, when his views were made known, under the sanction of distinguished reputation. On his arrival in Boston, he communicated the object of his visit to W. T. G. Morton, his former partner, and solicited his assistance, that he might gain an introduction to Drs. Warren, Haywood, and C. T. Jackson, as he required the services of the latter in the preparation of the gas, and permission of the former to address a portion of the medical class, then in session, in their presence, upon the subject proposed: "That of producing insensibility to pain in surgical operations from the over-excitement

induced by the inhalation of Nitrous Oxide Gas," which was obtained with the acknowledgement on the part of W. T. G. Morton and Dr. Jackson,that they had no belief in the success of the experiment,or idea that the effect could be obtained; and of so little interest was the subject to Dr. Jackson that he did not attend the trial, which took place in compliance with the invitation of Dr. Warren upon the day appointed, when Horace Wells presented his views, "laboring to establish the principle, that the system, when wrought up to a certain degree of excitement, by any means whatever, would be rendered insensible to pain, and would admit of surgical operations being performed without any disagreeable sensations." In proof of his theory, which was based in a measure upon that of Humphry Davy, he related his experience in its use, stating, upon the authority of his friends, his success in extracting teeth without pain.

Some time after concluding his remarks, he was offered a subject for experiment, which he gladly accepted, and after subjecting him to the influence of the gas, he attempted the extraction of a tooth, which he accomplished, not, however, without the patient exhibiting signs of pain; but his description gave it a different character from what he had formerly experienced under the same operation, showing, evidently, a modification in severity. The reason why insensibility was not induced in a perfect degree, was attributed by Horace Wells to the premature removal of the gas bag; while the persons present, with the usual want of liberality shown toward those who have made discoveries and desire to have them tried before men of ability and judgment, pronounced the whole a failure, and the attempt as one designed for imposition. This decision, to say the least, was hasty, however slight the grounds may have appeared upon which he based his experiments, he should have been allowed the privilege of repeating them, before judgment was passed, until he was convinced that his want of success did not arise from accident; and from the well substantiated evidence furnished by those who had witnessed his experiments in Hartford, they had no reason to call in question his honesty of purpose, or the success of former trials, aside from the high degree of confidence required in the belief of its efficacy, and the practical ease of application, which should lead him to hazard an exhibition before men renowned for the variety and extent of their acquirements, scientific attainments, and exact powers of discrimination. But he was doomed to meet with accidents which so frequently

arise to mar the success of first public experiments for testing discoveries and inventions, from a lack of confidence in his own ability to present the subject in its most favorable light, which, on account of its novelty, would appear at that period absurd to the casual observer, and the trial dangerous. Thus, from the perturbation occasioned by his novel position, and increased by the sceptical bearing of those called upon to witness a deviation from the beaten track so ultra in its character as the one proposed, he failed in obtaining with his first trial the promised result, and, disappointed in his reasonable expectations, was obliged to leave Boston, with the brand of humbug upon his future prospects. And on returning to Hartford, his place of residence, laboring under the sting of disappointment, he abandoned farther effort for its introduction; not, however, from any lack of confidence in the strength of his former opinion regarding the power of the agent for the production of insensibility,— as we are furnished with the strongest testimony on the part of those, who, from a knowledge of his former success were interested in the discovery, in confirmation of his belief that it would finally be adopted for the relief of pain in severe surgical operations. And in this attempt on the part of Horace Wells to introduce the protoxide of Nitrogen as an agent, when inhaled, for the production of insensibility to pain in surgical operations, all must recognise the first public effort made for that purpose, and with the support that it received from his previous demonstrations of its certain effect in annulling pain from the extraction of teeth, and the experiments which have since been performed in France, under the guidance of distinguished men, none will doubt that the Nitrous Oxide possesses the power to accomplish the end which he ascribed to its use. And when we review the course pursued by him in his investigation of its properties, and for public demonstration, we must acknowledge them as the legitimate steps of discovery; and that he is not the living representative of the discovery as it now stands in relation to ether, must be ascribed to timidity, which would of necessity affect a person, placed under similar circumstances, and would, in a majority of cases, render the first experiment abortive; also to the want of proper patrons, those who would be ready to overlook the first trial, if a failure, and view it in the light of a necessary prelude,— especially when based upon a suggestion derived from the authority of Sir Humphry Davy, whose mind, fitted by nature for invention and discovery in mechanical and chemical

art, had arrived at that point in tracing chemical cause and effect in their relations to our material existence, that his suggestions have often proved true in detail, as they have been subject to test since his day; although he neglected to make absolute trial for the want of time and suitable opportunity, but recorded them for the benefit of mankind, to be wrought out by the chance notice of minds fitted for the work,— as, in the present instance, through the instrumentality of Horace Wells we are indebted for the alleviation of the vast amount of suffering to which the human family were subject, from natural causes incurred by the alleged transgression of special and natural laws, originating the accidents of life, so fruitful in mental and bodily pain. And we are often led, when subject to the strange mutations of life, to accord with the sacred passage which says, that "the ways of Providence are inscrutable and past finding out."— Thus, "when in the full tide of successful experiment" we suppose ourselves upon the eve of accomplishing a long cherished plan, we find it frustrated by a want of due appreciation on the part of the public, or those interested as special agents in securing its welfare.

In order that we may place the proper or relative value upon the claims of W. T. G. Morton, we will now briefly recapitulate those of Horace Wells, that the various concurring circumstances which favored the advent of ether as an agent for the production of insensibility through the instrumentality of W. T. G. Morton, may be perfectly understood.

Dr. Wells, from an exhibition of the effect of exhilarating gas, or protoxide of nitrogen, was desirous of learning its composition, and history, and had recourse to a chemical work containing the recorded suggestions of Sir Humphry Davy, relative to its use for the mitigation of pain in surgical operations, from which he obtained its method of preparation for the express purpose of trying it in relieving the pain attendant upon the extraction of a tooth. His first experiment was successful, and led to a series of trials, which developed its application in a sufficient degree to warrant a public demonstration, which was determined upon through the influence of his friends, who had witnessed his experiments, and in a measure realized the benefits which would arise from its general introduction into our hospitals to aid in severe surgical operations. And, as much depended upon the character and method of introduction in securing it success and reputation, or public confidence, he selected Boston as the place best

calculated for its first exhibition, as, from his previous acquaintance he could gain easy access at the hospital and an introduction to the surgeons, as he was desirous of their approbation in presenting it to the profession at large, being the only legitimate channel to their confidence. When he arrived in Boston, he developed his scheme to his former partner, W.T.G. Morton, and impressed upon him its feasibility, citing in testimony his previous success, and received his aid in gaining an introduction, and an invitation from Dr. Warren to give an address to the class under his direction, and an experiment to sustain his views, which he accepted. And after speaking of its history and theory, or modus operandi, he endeavored to support it by an experiment, but failed of success, from which failure, without the privilege being granted him for another trial, his attempt was viewed in the light of an imposition, and he left Boston disheartened; although he still made use of the agent successfully, and urged his belief that the principle would, in time, be generally adopted by the profession. Here the subject rested, with an occasional experiment in his own practice, until the summer of 1846, without any decisive effort being made either by himself or others for its public revival, when W. T. G. M., his former pupil in dentistry, and aid in procuring him an introduction at the hospital, visited him at Hartford, well impressed with the experiments made with the nitrous oxide gas, requesting him to teach him the method of preparation that he might make trial of it in Boston, and was referred to Dr. C. T. Jackson, with whom they were both well acquainted; as he was a chemist having the necessary apparatus, he could prepare it as he wished to use it, and thus save him the unnecessary trouble of carrying it from Hartford. He accordingly, on his arrival in Boston, acting from the stimulus afforded by a patient who was proof against the persuasion usually employed to aid in the extraction of a tooth, bethought himself of the gas, and immediately determined to make trial of it, and from the advice of Horace Wells, had recourse to Dr. Jackson to obtain it. On applying, found him closely engaged in the duties of his profession, which would not admit of its preparation at that time; consequently, when farther importuned for a small quantity for one experiment, Dr. Jackson, with the apparent motive of the unjust judge, mentioned Ether, and told him to make use of that as a substitute, as its effect when inhaled was similar to that of nitrous oxide gas, which he illustrated by an account of his use of it for the purpose of exhilaration while a student; but endeav-

ored to discourage Mr. Morton from attempting it, as he believed it hazardous in trial, without the prospect of its proving successful in gaining the result he desired, and cited the interdiction of the professors against its use, as supported by medical authority. Notwithstanding this advice, Mr. Morton, acting from the impulse of his accredited peculiarities, procured and made trial of ether by inhalation, on the 30th September, 1846, with the premeditated intention of extracting a tooth while the patient was under its exhilarating influence, acting upon the basis of Horace Well's theory. As, up to this period, there is not furnished any definite evidence that a knowledge of the true characteristic properties of ether, for the production of insensibility to pain in surgical operations, had been discovered by absolute test; and as, from this experiment, which was successful, we are furnished with the first well authenticated date upon record, in which the direct testimony of a person has been given that a surgical operation was performed upon himself, while insensible from the uncombined effect of ether, applied by the inhalation of its vapor; upon this is based the merit of Mr. Morton's claim to the priority of application. Thus, through a fortunate train of circumstances, he became the inadvertent instrument of placing the discovery in the hands of the profession; and any further attempt on the part of his advocates, *interested* or otherwise, to establish for him the reputation of research, either general, or directed to that object, previous to that date, (except those of an irrelative character fitted for an attractive advertisement,) must serve to diminish public confidence in the validity of the equivocal merit which is justly his due. That Mr. Morton first aided in developing the resources of ether to annihilate the pains of surgery, and in advancing it to its present stand with the profession, by affording demonstration of its safety in extracting a tooth, with his effort fully clothed in circumstantial garb, none acquainted with the facts can doubt. But that he expended labor, health or money, farther than in the purchase of material in an investigation directed to the subject of producing insensibility, for months previous to the experiment alluded to, there is not the slightest shadow of proof. Indeed, his constitutional peculiarities, as exhibited in his personal appearance, address, and intercourse with friends and patrons, together with the history of his past career, and his own personal estimation of his ability, offer insurmountable obstacles, which would seem to preclude the possibility of his being

able to pursue a course of thought for the elucidation of a subject requiring the test of absolute experiment in learning the composition of any substance, and through its qualities, its effect upon the animal system — a plan necessary to be pursued in order to secure the safety of the person experimenting, and, if he respects associate life, those experimented upon. That W. T. G. Morton's first impulse was derived from the experiments of Horace Wells, through the information imparted by him with regard to the nitrous oxide gas, and his success in its use, and the further recommendation that he should apply to Dr. Jackson to obtain it — his determination to make trial of it, in accordance with the advice of Horace Wells, and on application to Dr. Jackson, the nature of his engagements preventing his compliance, and the casual offer of a substitute known to possess a similar effect — his acceptance and trial, with consequent successful result,— is fully confirmed in the subsequent train of events ; and is made still more evident by his own statements, and those of his advocates, with the passing events which transpired during the exhibition of his experiments.

The next claim in the catalogue, is that instituted by Dr. C. T. Jackson, which appears from existing evidence to have been urged for the first time, after it had been fully tested by W. T. G. Morton and the hospital surgeons, and proved by repeated trials to be harmless in its after effect and tendencies ; and then, when it became a settled matter that the effect could be produced, with a harmless result, and the agent one that could be brought into universal use, and made of incalculable benefit to the race, constituting, from its adaptation in relieving suffering attendant upon the application of the surgeon's knife and the amelioration of pain in difficult natural processes, by far the greatest discovery of modern times, Dr. Jackson came before the public with the date of 1842, upon which he had engrafted his title to the discovery, neglecting, however, that most essential feature in gaining public credit, the direct testimony of persons having knowledge of his experiments, their direction, the result of absolute trial, and the character of the agents used, but gave his own word, unsupported by the definite coöperation of others, as imperative and all-sufficient for public belief, in defiance of the honorable and just claims of Horace Wells to the title of suggester, and the strongly supported title of W.T.G. Morton, based as it was upon the first accredited public experiment made with ether as the agent ; and in the face

of his own previous assertions, while Mr. Morton's experiments were a subject of question, and his refusal to grant him a certificate, in support, on ascertaining that the subject of his first successful experiment was uninjured, (in support of its harmless character when administered by inhalation,) stating that it was dangerous, and if persisted in, would subject him to censure and ruin, as it could not fail in inflicting injury, Dr. Jackson now states, that he realized, in the year 1842, the full benefit to be derived from its application. If so, why did he neglect the duty incumbent upon him, from that knowledge, to render a public demonstration, or at least, place it in its proper channel of development, and thus clear his skirts from the imputation that must rest upon him should the date of his claim be admitted ? — for he surely must be held accountable under that claim for a large proportion of the physical suffering caused by surgical operations since that period, in ratio with the supposed progress of its introduction. But against his title even as a final participator there is abundant evidence furnished, farther than was admitted in his recommending ether to Mr. Morton as a substitute for nitrous oxide gas, based, as he then specified, upon the generally acknowledged similarity of effect in producing exhilaration; as he then laid no claim to originality in giving a substitute, as it was simply a matter of convenience with him; and he evidently looked upon the application as the foundation of an advertisement; as he afterwards observed,— "he did not care what Morton did with it, if he did not drag in his name." At the time of his application he cautioned him against its use, and after his first experiment, said, "that he would kill some one yet, as its use was productive of injury;" and up to a very late period, repudiated all connection with its introduction, and advised his friends to suffer the pain of having a tooth extracted or an operation performed, without its aid, "rather than subject themselves to the hazard of losing their lives." He decried it in this way until after the safety of its application had been fully established by repeated operations, and a report of their favorable result reached him indirectly, as he held no connection with the parties subjecting it to experiment. At this period, when he began to realize its value, through the strongly expressed opinions of the scientific world, and the overtures made on the part of W. T. G. Morton for him to become jointly interested, to aid with his name in establishing its reputation, which he accepted, he set himself to work in order to retrieve the imagined fortune and reputa-

tion which he was about losing from his counteracting course, and, armed with a bag of oxygen gas, some three months after the first successful experiment, he proceeded to the hospital upon the Quixotic errand of annihilating a giant in the form of asphyxia, which, report said, was about to obstruct its onward passage; but the ardor of his imagination was damped on his arrival, to learn that nothing of the kind existed, and that a knowledge of his interest in the discovery had not reached the hospital; notwithstanding he had, through the influence of a friend, received from W. T. G. Morton, in the form of a fee, for the accidental result obtained from a like suggestion, a bond securing him a per centage until it reached a stipulated amount, derived from the sale of rights, upon his relinquishing his right and title in the suggestion, and vesting it in Mr. Morton, as secured by a joint application for letter's patent, and corresponding grant. Upon finding Mr. Morton's claim so far in the ascendant that it had perfectly eclipsed his own in a quarter so prominent, he was impelled by a frenzied desire of exclusive credit to cast off a rival so dangerous and throw himself upon what he considered his reserved rights, which proved to be a modest claim for the full merit of the discovery; and during the height of partizan and patent warfare, he destroyed the bond which was to secure him a portion of the proceeds arising from the patent; but it was not until after the exclusive right of controlling the agent was proved to be defective, and ether was used by the profession without the purchase of the privilege; while, from the manner of its destruction, and language used, it was evidently premeditated, with the evident idea of enlisting professional sympathy in his behalf, from the impression that it would convey of pecuniary sacrifice, and thus aid in securing his desire through the channel of martyred self-interest. But this has, with other schemes, failed, as the peculiar character of the Massachusetts General Hospital report has given an almost irresistible strength to the favorable tide of Mr. Morton's claims, as in advocating his, they have not neglected to institute a comparison with regard to the nature of their respective operations, which appears very much like beating the bush for Mr. Morton while they make a selection from the game; and the *disinterested* review of that report by his attorney, now so widely spread through the length and breadth of our country and Europe, would seem sufficient to give a permanent quietus to Dr. Jackson's struggles; but, like the dying ember, he is now reviving all his latent material and energy for a final effort to

enliven his claim to the whole merit of the discovery, and although he shadows forth its coming brightness, it would appear from the character of the evidence opposed that it must finally become extinguished, unless he should again betake himself to the stand of participator, now rendered almost untenable from the provocation afforded by his frequent attempts to bring the whole within the control of his capacious maw, dedicated for the reception of inventions and discoveries, founded upon questionable authority, aside from his natural repugnance to a union of interest with a person of Mr. Morton's peculiarities, which would taint his pride of reputation as a scientific man.

Having in the foregoing given, as I believe, a true statement of facts, capable of receiving full support from unquestionable authority, relative to the part each person mentioned had in developing the resources of the specified agents used for the superinduction of insensibility in surgical operations, I will now, acting in compliance with the request of medical friends, received from various quarters, give a detailed account of my own independent use of sulph ether in connection with opium, and consequent production of insensibility, from the period of its first application by inhalation in the spring of 1844 down to the time that I disposed of my right and title in the discovery to Mr. Morton, during the first of November, 1846. But in giving the history, it is not my intention to enter the lists as a competitor for either prize or honor, although the material which it affords might have been wrought, with less trouble than that expended upon the rival claims, now the subject of discussion, into tangible grounds of absolute discovery; notwithstanding that, in the first instance, the cause and effect were attributed to the wrong agent of the combination, still it could not have failed in developing the right, if the experiments had not been interrupted by the advice of medical associates, who, through fear, urged me to discontinue its use, as my reputation and practice would be subject to hazard. And as its power to produce insensibility was thought to reside in the narcotic principle of the opium, I proposed to reduce it to that degree which would ensure recovery if administered in substance; still the supposed risk was so strongly urged, that it deterred me from carrying it to the point of separation which should lead me to detect the power, and trace its different stages from cause to effect, as they are known at the present day. "There was a lion in the way" which served to restrain me

at bay, until Mr. Morton proved himself fitted for the encounter. And, although it is urged by his opposers that he lacked knowledge which should have stimulated his discretion, it is now proved upon their own grounds, that valor, supported by ignorance, is in some instances the better part of discretion, in conferring benefits upon mankind. And in view of my discovery of a power that would overcome painful bodily sensation under the operation of the surgeon's knife, I cannot see that there pertains to it the slightest degree of merit,— but it must be considered an unavoidable sequence of events, which, under a bolder administration, has been perfected, and brought, by the aid of surgeons, to control the severe pain of which they are the reluctant but necessary cause.

My first use of the etherial tincture of opium was while engaged in the practice of medicine at Derry, N. H., for the purpose of allaying bronchial and pulmonary irritation, from the inhalation of its vapor through the medium of an instrument which I had constructed, bringing it directly in contact with the diseased surface of the parts affected — as I had realized but little benefit from the indirect treatment recommended through the influence of the stomach and circulation. And from the evidence afforded of the local character of pulmonary diseases, arising in many instances entirely from local causes, implicating other organs only indirectly, through the influence that the lungs exert from the character of their functions in preparing the blood for nutrition, we cannot reasonably expect to find an agent that will ever impart sufficient power through the stomach and absorbent system to the crude material of blood, to effect a change through its contact with the tissue of the lungs when subject to their renovating ordeal for the final support of the system, especially where the lungs are extensively diseased, and are barred against its influence and the power of separating it from general distribution — thus inflicting a secondary evil, of which we can see the effect whenever the method of general medication is adopted. While, from the evidence afforded of the local character of the diseases of the lungs and passages, I was led to attempt a system of direct medication, by bringing my remedies in actual contact with the diseased surface, suspended in such vapors as would be likely to engender the least resistance from the sensitive apparatus of the lungs, and the irritation which foreign influences usually exert — and first selected ether as a vehicle for opium, from its powerful solvent properties; its

extreme volatility requiring but little heat to reduce it to vapor and character as a diffusible stimulant. My instrument was of crude construction when compared with those now in use, although it answered the intention for which it was designed, by conveying the vapor, with a due proportion of atmospheric air, directly to the lungs, and when rejected, it was prevented by a valve from commingling with that in the receiver, and was conveyed off by another passage.

The first patient who became subject to treatment from this agent was a Methodist clergyman, Mr. Dow,* who was laboring under a fatal attack of phitisis, with which the bronchial tubes were implicated, and from his severe paroxysms of coughing required paliative treatment, to allay irritation; but after trying the various remedies usually resorted to, without effect, he commenced, upon my recommendation, inhaling the vapor arising from a decoction of hops, which for a short time produced a favorable influence, but from the return of his old symptoms he called upon me at my office, desiring something more effective. I then gave him some of the etherial tincture of opium, with directions for inhaling it, and from having seen ether inhaled while a student for a long time without producing any disagreeable result, it did not occur to me that there was any necessity for caution; but on calling at his residence some hours after, I was surprised to learn that while inhaling it he had fainted, falling against the stove with considerable force; but he was unable to give me a tangible account of his sensations, when inquiry was made relative to the cause,— whether he could trace it to the effect of the preparation — although he described the first effect as pleasant and entirely different from fainting, as he had no fear of injury when about to fall; notwithstanding he was perfectly conscious of a change taking place, and a general lassitude coming over him, he had no desire to check it or arrest his fall; which produced a severe contusion, with which he appeared very well contented, as it had caused him no feeling of pain. Attributing the effect to the preparation, I discontinued its use in his case, although he was not averse to its further trial, but rather desired it, as from the pleasurable sensations which he experienced he was inclined to think that it produced a favorable effect; from this impression I thought the unfavorable symptoms might have been induced by a peculiar idiosyncrasy to which he was subject from the effect of

* Who died in a few months after.

opium, and determined to test it by a careful trial, when an opportunity should offer by which I could avoid the fears of friends, who might esteem it a hazardous experiment, especially if subject to the same symptoms which accompanied the first. Some months after, Miss M—— called at my office for the purpose of obtaining relief from a violent pain in her left side, attended with a severe cough, and the usual premonitory symptoms of phitisis. At my request she inhaled the vapor, which at first increased the pain and cough; languor succeeded, accompanied with loss of expression, instability of the eye, and symptoms common to its use; on making the attempt to remove the instrument at this stage, from fear of doing injury, she grasped and held it firmly — and persuasion would not induce her to relinquish it, until finally overcome by nervous lassitude. In restoring her to consciousness, the salts of ammonia were used, with the remedies usually applied for the relief of fainting; after a few minutes of trouble and anxiety she was restored, and described her sensations during its effect as pleasant, and did not appear to suffer, while under its influence, any fear of danger. For several days she imagined that she suffered from debility, although the final effect was evidently beneficial.

With this experiment my confidence increased, and in my next trial, I gave it with less reluctance. In this, my last experiment, made with the intention of overcoming the dread and pain of an operation for opening a sinous abscess which had traced a passage from the muscles of the neck to the lower portion of the sternum, I first realized its benumming effect. My patient was Mr. John Johnson,* who, from the dread of the operation, desired that I should give him opium, or "something, so he would not feel it." I gave him what I called the etherial tincture of opium, by inhalation, so that he became unconscious of pain from the operation, — the pus was discharged, and he recovered immediately from its effect without the supervention of any bad symptoms, which surprised him, as he said that opium administered in any way usually produced a very unfavorable effect and lasted a long time, causing headache and general lassitude. This, my last and most unobjectionable experiment, I ventured to describe to my friends, Drs. Brown of Chester and Brown of Manchester, with the instrument used; but they urged its danger and the consequent hazard I run, and advised me to discontinue its use and employ some

*Since deceased.

other agent with which to fulfil the intention of my instrument, and test the theory which caused its construction. The conversation with the late Philip Brown, of Manchester, was carried on in the presence of Dr. Alvah Blaisdell, who recollects its substance, with the agent used, and the character of the operation performed, with its success, and has given his deposition, with others, in testimony of the facts. From their advice, and other causes, I did not make use of it again for that purpose, until the month of September, 1846, although I had proposed its use to several medical friends, among others to Dr. Clough, during the previous winter, recommending its use for the purpose of extracting teeth; but from the fear of danger, we were deterred from making the trial, until the month of September, when urged by Dr. Blaisdell to prepare some and give it, as Mr. Morton was making use of something with success, which he assured me did no injury, and he supposed it to be the same that I had previously made use of. I accordingly prepared and administered it, successfully, to a patient for the extraction of a tooth. And on the 11th of October I prepared an article for the Boston Medical and Surgical Journal, describing the method of combination and administration, which was published on the 28th, and was the first paragraph ever given to the public, upon the subject of producing insensibility to pain in surgical operations, from the effects of ether. Early in the month of November I relinquished my right and title in the discovery to W. T. G. Morton, by sale, through the instrumentality of R. C. Eddy, Esq., his attorney,—as he was about negotiating for letters-patent — to secure its sole control, which he finally obtained, although they proved of no avail in securing to himself the monopoly of its use. It soon became common property, without his consent by purchase, as the grounds for obtaining a patent proved untenable; and no effort was made, after a few months, to make sale of rights, from its general adoption by the medical profession as their own, "without money or price," on account of its power to mitigate human suffering.

Having, in the foregoing, given a correct history of the rise and progress of the discovery of the power of ether to produce insensibility to pain in surgical operations, in connection with the claims of each person, directly or indirectly interested in bringing it before the public, I will now offer an analysis of their claims, to expose the merit that they are separately entitled to from the character of the aid rendered. In the first place, a question is raised or a suggestion

made, whether the nitrous oxide might not be used for the production of insensibility to pain during surgical operations? But, notwithstanding the high character of its source, emanating as it did from Sir Humphry Davy, it remained a recorded suggestion through the many editions of his works, for the lapse of nearly half a century, and had been read and re-read, by persons of almost every grade of talent in every department of study, from the student to the professor,— long trained in the preparation of its basis for the purpose of experiment. Still it passed through an ordeal so varied without ever being subjected to a single test in that direction, — while the mesmerizer was affording daily stimulus for its trial, by the record of his painless operations upon persons under the influence of his reputed science. But it passed the gauntlet of minds engaged in the various combinations of investigation exercised in different directions, without meeting an organization adapted for its development, by making it the subject of trial, until it fortunately met the eye of Horace Wells, a person possessing qualities of mind of an order required for its development, although deficient in the stamina derived from early education, which led, from the disappointment of cherished and just expectations, to his sadly premature death. From that suggestion, and his acquaintance with Mr. Morton and Dr. Jackson, and the aid derived from them in gaining him an introduction at the hospital, may be traced the studied, motive influence, which directly aided in making the latter the accidental suggester of ether as a substitute for the agent applied in Mr. Well's experiments. And to the former, the adventurer, who with negative merit demonstrated its power and placed it under the guarantee of high authority in the hands of the profession. And if there is to be an award of merit, we cannot consistently bestow it upon Sir Humphry Davy, who, with the evidence which led him to make the suggestion, neglected to test it by actual experiment. Neither can we attach merit to the course adopted by W. T. G. Morton, the accidental instrument in developing the resources of ether, as he acted in his application to Dr. Jackson according to the instructions of Mr. Wells, for the express purpose of obtaining the agent employed in his experiments; and least of all to Dr. Jackson, who, to avoid the trouble attendant upon its preparation, in the press of more urgent duties, gave qualified advice for the use of ether from the known similarity of effect producing exhilaration, — which he directly specified at the time, with the probable

danger incurred by its use. But merit is naturally directed to Horace Wells, who tested an untried suggestion of long standing, from his knowledge of the composition of its basis and harmless effect, and proved its applicability, which directly laid the foundation for the discovery of a more ready and certain agent, derived through the fortunate instruments of chance.

AFFIDAVITS.

Whereas, E. R. SMILIE, of Boston, in the County of Suffolk, and State of Massachusetts, has alleged that he has heretofore applied an ethereal solution of opium, (by inhalation,) in surgical operations, and has made application for a patent therefor and has assigned his interest therein, and in the discovery, so far as it is susceptible of being secured by a patent; now, therefore, in consideration thereof, I, W. T. G. MORTON, do hereby license and empower the said E. R. Smilie to use the said ethereal solution of opium, (as set forth in his specification for a patent,) in the surgical operations of his practice.

In witness whereof, I have hereunto set my signature and seal, this thirteenth day of November, A. D., 1846.

(Signed,) W. T. G. MORTON. [*Seal.*]

Witness,

CALEB EDDY.

BOSTON, April 19, 1848.

I, ALVAH BLAISDELL, of Boston, in the County of Suffolk, and Commonwealth of Massachusetts, Dentist, on oath depose and say —

That, in the spring of 1844, I was present at a conversation between Dr. E. R. Smilie, then of Derry, N. H., and the late Dr. Philip Brown, of Manchester, N. H., at whose office this conversation was held. The subject of this conversation was a surgical operation, which Dr. Smilie said he had recently performed on a man by the name of Johnson, of Derry, now deceased, as I understand. The operation was an incision of some inches in length, upon the chest, near the neck, (I believe,) with a view to the discharge of a deep-seated abscess, and that this was accomplished whilst the patient was in such a state of insensibility as to be unconscious of pain. Dr. Smilie said that this state of insensibility was effected by administering to the patient, before commencing the operation, a preparation of opium dissolved in sulphuric ether; and that his object in administering it was to overcome the dread of the patient, and at the same time to modify the pain. That he had been led to expect such a result from having previously witnessed its effects upon a patient to whom he had given it for a different purpose. This patient — the Rev. Mr. Dow, of Derry, a Methodist minister — was troubled with a bronchial affection, and Dr. Smilie said it occurred to him that if opium could, in any manner, be introduced and

brought in contact with the bronchial tubes, it would be both soothing and healing to the parts affected. In reflecting how this could be done, he thought of ether as a solvent, which would convey the opium along the diseased surface. Upon giving this preparation to Rev. Mr. Dow to inhale, (which was done by means of an instrument constructed for the purpose,) the effect was to throw him into a state of unconsciousness, so that he fell from his chair and bruised his head badly. This circumstance, Dr. Smilie said, suggested to his mind the utility of this preparation as an agent to overcome pain in surgical operations; and that he had accordingly directed his attention to this subject. It was thus, he said, in consequence of beholding its effects upon Mr. Dow, and his own subsequent reflections, that induced him, as before stated, to try it upon Mr. Johnson, as something which would allay sensibility to pain, while under the knife.

I remember that Dr. Smilie spoke of this operation as being a wonderful affair, whilst Dr. Brown, on the other hand, spoke rather doubtingly of the matter. Dr. Brown thought there might be danger of killing somebody by experimenting with this fluid; yet he said that "he might make something out of it after all."

I, Alvah Blaisdell, further depose and say: That I recollect of hearing Dr. Smilie observe, soon after he came to Boston, in the early part of the year 1846, whilst he was associated with Dr. Clough in the business of dentistry, that by means of the ethereal solution of opium, teeth could be extracted without pain. Also, six months or more after this, when I told him that Morton had discovered something which produced insensibility, Smilie said he could get up a preparation which would accomplish the same thing; and this he did do, and administered it to Mr. Ball, a patient of mine, with success.

(Signed,) ALVAH BLAISDELL.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. BOSTON, MAY 3, 1848

Then personally appeared the above named Alvah Blaisdell, and being duly sworn, did declare that his statements contained in the foregoing affidavit, by him subscribed, are true according to his best recollection, knowledge, and belief.

Before me,

H. A. SCUDDER,

Justice of the Peace.

I, JOHN CLOUGH, of Boston, in the County of Suffolk, and Commonwealth of Massachusetts, Dentist, on oath depose and say —

That in the spring of 1846, Dr. Smilie, (at that time my associate in the business of dentistry,) relating to me that he had used a preparation of ether and opium to be inhaled for medicinal purposes, and the result was so peculiar in diminishing sensibility, that he afterwards used it in performing a surgical operation. Dr. Smilie then, in the early part of the year 1846, suggested to me that it might be of great use in overcoming pain in dental operations. I replied to him, at the time, that there might be considerable danger in freely inhaling the vapor, so much so that it would be a sufficient objection to its use.

These remarks were made by us in the course of a conversation upon the advantages which would accrue to the profession, if some agent could be discovered which would annihilate pain.

I remember that Dr. S. gave me an account of the experiments that he had a year or two previously performed with the ethereal solution of opium; but the particulars of these experiments I do not recollect. I only remember that he said he gave it first for a pulmonary or bronchial trouble, and that its effects were such as to induce him to try it in a case of some minor surgical operation, in which it succeeded well.

(Signed,) JOHN CLOUGH.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. BOSTON, MAY 5, 1848.

Then personally appeared the above named John Clough, and being duly sworn, did declare that his statements contained in the foregoing affidavit, by him subscribed, are true, according to his best recollection, knowledge, and belief.

Before me,

H. A. SCUDDER,

Justice of the Peace.