

The invention of anæsthetic inhalation : or, "Discovery of anæsthesia." / by William J. Morton.

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THE INVENTION
OF
ANÆSTHETIC INHALATION;
OR,
"DISCOVERY OF ANÆSTHESIA."

BY
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ETC., ETC.

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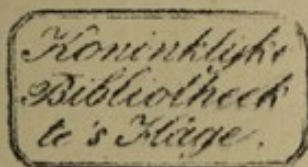
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THE INVENTION OF ANÆSTHETIC INHALATION, OR "DISCOVERY OF ANÆSTHESIA."

"The invention all admired, and each how he
To be the inventor missed, so easy it seemed,
Once found, which yet unfound most would have thought
Impossible."

MILTON.

THAT a new "discoverer of Anæsthesia" has been discovered, at this late date even; that extraordinary and novel claims for him have been recently brought before the medical and general public with energy and persistency by a special advocate;* that, in short, the Ether controversy, long since considered as a *res adjudicata*, has been again reopened, forms in itself a sufficient apology for presenting a fresh review of the subject in a manner which shall include the claims made for this third and latest after-claimant. And whether this

* Dr. J. Marion Sims, "Virginia Medical Monthly," May, 1877, and subsequent editions of reprints. A third position assumed by the same writer, who, in 1861, following the lead of Parker, Mott, Francis, and hundreds of others of the best-known physicians of this city, appended his name to the memorial stating that, "for this discovery, the first great triumph of placing in the hands of the profession an agent capable of rendering the patient safely and at will utterly insensible to the stroke of the surgeon's knife, the world is indebted to Dr. W. T. G. Morton, of Boston"; who again, in 1873, said in a public address, "To my mind it is as clear that Wells was the discoverer of Anæsthesia as it is that Columbus was the discoverer of America"; and who now, in 1877, thinks "that Long was the first man to intentionally produce Anæsthesia for surgical operations," and was therefore "the true discoverer of Anæsthesia."

modern revival of a claim never viable will be found to be based upon an accession of new and reasonably valid proofs and facts, or whether it is a needless resurrection of long-buried antiquarian remains, unwarranted by any new fact developed, and interesting merely in an incidental and historical way, is a point which will best appear upon making a plain presentation of the case.

Before 1846, in all time, surgery was agony.

The universal practice of Anæsthesia, as it is understood to-day, began in 1846. Before this date pain was inevitable. Mankind in hospitals, in homes, on all occasions of pain incident to surgery and medicine, suffered without relief. After this date pain was avoidable. Mankind was offered and accepted immunity, and every physician and surgeon in the world held in his hand the means and the method of annihilating it.

Thus voluntary escape from pain forms an epoch in the world's history, as definite as the beginning of the Christian era, of vaccination, or of telegraphy; an epoch marked, moreover, by results to humanity more important and more enduring than those gained by any single contribution ever made to medicine.* The practice of surgery underwent at this date a striking revolution, brought about by the revelation of the fact that sulphuric ether, properly managed, would produce complete insensibility to the pain of surgical operations.

This revelation to the world was made by Dr. W. T. G. Morton, of Boston;† he was the issuer of the new facts. At

* "If America had contributed nothing more to the stock of human happiness than Anæsthesia, the world would owe her an everlasting debt of gratitude."—Professor S. D. Gross, Address delivered April, 1879.

"It is probable that the American inventor of the first anæsthetic has done more for the real happiness of mankind than all the moral philosophers from Socrates to Mill."—LECKY, "History of European Morals," vol. i., p. 88.

† At the time of the invention of anæsthetic inhalation Dr. Morton was a young man of twenty-six years, industriously making his own way through the world. Early thrown upon his own resources by an unfortunate business venture of his father's, but with a good New England academy education, moderate ambition, courage, and a clear conscience to back him, he had started out, and had met with those obstacles which usually attend the career of the self-made man—obstacles which, while they delay success, at the same time develop character. His final goal was the attainment of a medical degree and the practice of medicine. With this in

hand stood a Bigelow, with the incisive insight to welcome and counsel, and the will and the ability to sweep aside the prejudice and doubt of the hospital surgeons, and within the historic walls of the Massachusetts General Hospital were found a Warren and a Hayward to verify the revelation with judicial fairness, and to place upon it verified the stamp of their scientific and professional approval; and a Holmes suggested the terms *Anæsthesia* and *Anæsthetics*.*

Thus issued, fostered, verified, and christened, the revelation went forth into the world in 1846, perfect at its outset.

view, he had already, in 1844, entered his name as a student in the office of a physician in Boston, and had shortly afterward matriculated in the Harvard Medical School, where he faithfully attended the courses of lectures. While still a student of medicine, practicing the allied branch of dentistry by the way as a means of support, his attention became fixed upon the anæsthetic properties of sulphuric ether. Soon came his announcement of success in its use, and the all-absorbing controversy which ensued of course precluded further medical studies. Afterward the honorary degree of M. D. was conferred upon him by the Washington University, of Baltimore, Md. That Dr. Morton was "ignorant of medicine and without a degree" has been so often repeated by the tireless and bitterly personal detractors of the early days of the controversy, and thoughtlessly reiterated since, justifies this brief allusion to a branch of the subject slightly apart from the points at issue.

* Professors Henry J. Bigelow, George Hayward, John C. Warren, and O. W. Holmes, of the Harvard Medical School. Only lately a distinguished American writer states that the word *Anæsthesia* "was coined and introduced into our medical nomenclature in 1847, by the late Sir James Y. Simpson." The following characteristic letter establishes the fact that the word originated in America. Dr. Morton at first used the term *Letheon*, suggested by the fabled river *Lethe*, to denote oblivion both to pain and to consciousness, but quickly adopted the new word.

"BOSTON, November 21, 1846.

"MY DEAR SIR: Everybody wants to have a hand in a great discovery. All I will do is to give you a hint or two as to names or the name to be applied to the state produced and the agent.

"The state should, I think, be called '*Anæsthesia*'; this signifies insensibility, more particularly (as used by Linnæus and Cullen) to objects of touch. The adjective will be '*anæsthetic*.' Thus we might say, the state of *anæsthesia* or the *anæsthetic* state. The means employed would be properly called the *anti-æsthetic* agent. Perhaps it might be allowable to say *anæsthetic* agent, but this admits of question. . . . I would have a name pretty soon, and consult some accomplished scholar, such as President Everett or Dr. Bigelow, senior, before fixing upon the terms which *will be repeated by the tongues of every civilized race of mankind*. You could mention these words which I suggest for their consideration; but there may be others more appropriate and more agreeable. Yours respectfully,

O. W. HOLMES.

"Dr. MORTON."

The news quickly reached Europe. So sudden was this conquest of pain that, as is well said by Sir James Paget,* in referring to the event, "it might almost be said that in every place, at least in Europe, where the discovery was promoted more quickly than in America, the month might be named *before* which all operative surgery was agonizing, and *after* which it was painless." Anæsthesia came into universal practice; ether remained alone in the field as an anæsthetic for more than a year, when Dr., afterward Sir James Y. Simpson† suggested chloroform as a substitute for it.‡ A number of other substitutions have since been made, but have failed to supplant the original ether. And we may note, in passing, the gratifying fact that the practice of Anæsthesia is wholly of American origin.

Proof that previous to 1846 surgery was agony.

But it may be asked, was this knowledge new to the world? Was it in 1846 for the first time placed in the possession of mankind? That it was, absolutely and without

* "Escape from Pain: the History of a Discovery." By Sir James Paget, Bart. "The Nineteenth Century," December, 1879.

† In sending to Dr. Morton his first publication upon chloroform, Dr. Simpson writes :

"MY DEAR SIR: I have much pleasure in offering for your kind acceptance the accompanying pamphlet. In the 'Monthly Journal of Medical Science' I have a long article on Etherization, vindicating your claims over those of Jackson.

"Of course the great thought is that of producing insensibility, and for that the world is, I think, indebted to you.

"With very great esteem for you, allow me to subscribe myself, yours very faithfully,
J. Y. SIMPSON.

"EDINBURGH, November 19, 1847."

Afterward Dr. Simpson diffused this credit over a great number of observers and experimenters, leaving the main idea ascendant that the settled and fixed practice of Anæsthesia as known to-day did not begin until 1847. The files of all medical journals throughout all countries published between October, 1846, and November, 1847, are sufficient refutation of this view of the case.

‡ This interval of a year is sometimes strangely forgotten, as witness the following recent remark: "The men who taught us had seen the introduction of *chloroform* rendering possible prolonged operations, and an accuracy of surgical dissection which was before unattainable."—"Advances in Surgery during the Past Twenty Years." By Roderick Maclaren, M. D., etc. "Lancet," January 31, 1880. If we say, rather, that they had seen all this by *ether* for a year before chloroform was mentioned as an anæsthetic, we shall utter the fact.

reservation, is established by the common consent of all eminent authorities, tracing them up to the very day even of Dr. Morton's first demonstration.

In 1839 the distinguished surgeon Velpeau wrote: "To avoid pain in surgical operations is a chimera which it is not allowable to pursue at the present day. The cutting instrument and pain are two words which never present themselves singly to the mind of the patient, and of which we must necessarily admit the association." And Orfila, in his "Toxicology," declares "absolute insensibility to pain under surgical operations by etherization to be a discovery entirely new."

Professor J. C. Warren, already referred to, 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. I have freely declared, that, notwithstanding the very large doses of narcotic substances, this desideratum had never been satisfactorily obtained." And again, January 6, 1847: "I hereby declare and certify that I never heard of the use of sulphuric ether by inhalation as a means of preventing the pain of surgical operations, until it was suggested by Dr. William T. G. Morton in the latter part of October, 1846."

Sir Benjamin Brodie, in an address delivered at St. George's Hospital, London, in October, 1846, said: "There is no greater desideratum either in medicine or surgery than to have the means of allaying or preventing bodily pain, not only in surgical operations, but in other cases also; but there is 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.*" What Brodie despaired of became an accomplished fact within twenty-four hours of the delivery of his address.

The facts thus far detailed are fixed and immutable. Not a word admits of discussion or denial; they demonstrate clearly that something novel was revealed to the world in 1846—something not yet in the possession of mankind; in themselves they are *prima facie* evidence that what was new

was a discovery—the discovery of Anæsthesia as applied to surgery—and that this discovery was made in 1846.

The discovery was made in 1846 ; it went forth from Dr. Morton's hands. He alone was known or heard of in connection with it until after its success was established.

And but one man was known as author in relation to these events, and that man was Dr. Morton. He it was who asked for an opportunity to administer the ether, and his hand administered it before a crowded amphitheatre of skeptical witnesses ; his, the responsibility of failure and its attendant ridicule, and his, the risk of an almost certain indictment for manslaughter, in case of the death of any one of the patients upon whom the preliminary experiments were made which led to this public trial. During this trying and crucial period he alone was known or heard of as originator in connection with the use of ether until *after* its safety, efficacy, and utility had been established beyond a doubt. Claimant he was not, for from whom could he claim anything ? No one else had claimed to have discovered Anæsthesia. It did not exist—or the testimony of Orfila, of Brodie, of Warren, and of all contemporaneous and eminent authorities is false. It was not therefore claimable from any one. It originated then and there, in 1846. At that moment it was revealed, announced, verified, introduced, and popularized, and the discovery went forth to the world—issued by Morton, indorsed by the Hospital.

Antiquarian exploration, prompted, whether it be by sophistical or by honest partisanship, assails this position in vain, and on this basis posterity will render that verdict unanimous which promoters of confusion now seek to delay. From this elevated plane Dr. Morton, living, combated assaults with a forbearance not accorded to him in return, but with a persistency which was convincing of his faith in the justice of his cause ; and in his grave he awaits the world's unanimous verdict of confirmation and approval.

After-claimants arise ; their characteristics.

But at this point in the history of Anæsthesia, clear-cut, defined, and impregnable as Dr. Morton's position would seem

to be, we are brought straightway to the unfortunate period of controversy, the inevitable sequel of every great discovery and invention. Numerous after-claimants arose and bid fair yet to arise. The after-claimant, whether with good intentions or with bad, seems to be the natural parasite of the discoverer or inventor. If honest, he claims that certain prior efforts of his own were of a nature sufficiently definite to constitute the discovery or invention. And such a claim may possess a certain amount of merit if these efforts have been put on record at the time, with proper dates and witnesses, it may be; if this has not been done, their value can not be relied upon, for every one knows how easy a thing is to repeat after it has been once accomplished. The puzzle solved, its solution seems ridiculously simple, and each wonders how he failed to do it. But it is obviously unjust, with another's solution in hand, to interpret previous steps and attempts as equivalent. The little misstep on this side or that is set straight, and such an after-claimant comes conscientiously to believe, since he was so near being, that therefore he was, at this prior time, the discoverer. He forgets that, while he paused on the verge, another by chance or intent pushed on, by the same route perhaps, and took the final step of success. But the after-claimant ignores this final step. He substitutes his imperfect results previously obtained for the now perfect ones; exchanges his own uncertainties for the new certainties; and is now said to "antedate" the unfortunate discoverer. The injustice of this is so glaring that the scientific world has been driven to admit the law that an observer can not claim credit for his observations unless they have been submitted to some proper scientific tribunal, and thus at least, if not in print, become published. The reasons for and the elements of every discovery soon to come, for instance, are now working in many human minds. When the prospective discovery is born, each worker may believe that the discovery is his. But the world must honor some one of them, and it has always selected him whose work was coincident with the public birth of the discovery, who both detected the main fact or principle involved and demonstrated its application, and who also issued, announced, and proclaimed it, especially if he did this against difficulties and

prejudices. And such issuer's position is many times stronger if he has had absolutely no relation personally, or in writing or print, with the after-claimant, and if, in addition, the latter has not a scrap of published record to show for his alleged prior discovery.

But there is another kind of after-claimant whom words can not too strongly denounce. With nothing to lose, since he has done nothing, and everything to gain, he makes up in audacity what he lacks in facts. He advances his claims "with a presumption exactly proportioned to his inability to establish them." He thrives in the confusion he creates, and takes advantage of mankind's intuitive love of fair play to inspire a doubt which the world, occupied or perhaps indifferent, may not at once dispel. The inventor and revealer of the Anæsthesia of 1846 was to have an experience of both these classes.

Definition of terms, "discovery of anæsthesia."

But we must pause a moment at this point to ask what is meant by the "discovery of Anæsthesia." The terms in themselves have been responsible for much confusion. Do they comprise the conception—the theory, an attempt to carry out the theory in practice, or the perfected and now familiar result?

The word Anæsthesia (from *a*, *non*, and *αἴσθησις*, sensation) means simply the state of insensibility to pain—an abstract and observed fact as old undoubtedly as the human race. Syncope, the coma of disease, a concussion of the brain, an excess of alcohol, opium, or other narcotic, and the inhalation of noxious or other gases—any and all of these agents or means rendered this condition familiar to the past. This was *accidental* anæsthesia. But we may go still a step further, and find that the state of insensibility to pain, brought about in human beings with a humanitarian and scientific purpose—that of relieving the pain of surgical operations—was equally familiar. This was *intentional* anæsthesia, produced both by ingestion and by inhalation. Not only allusions expressed in the clearest terms in the writings of the older authors, but the record of the very means—the drug or the gas and the detailed method of its employment—leaves us in no doubt upon this

point. Middleton, in his tragedy of "Women beware Women," published in 1657, writes:

"I'll imitate the pities of old surgeons
To this lost limb, who, ere they show their art,
Cast one asleep, then cut the diseased part."

But we do not intend to enter into the past literature of the subject. A word will show how clearly both the conception and the practice of Anæsthesia in surgery were understood. "It," says Pliny, not later than A. D. 79, speaking of mandragora, "is drank against serpents and before cutting and puncturing, lest they should be felt"; and, later, Dioscorides, "It is used to cause insensibility of those who are to be cut or cauterized"; and still again, a century later, Apuleius, "If any one is to have a member mutilated, burned, or sawed, let him drink half an ounce with wine, and let him sleep until the member is cut away, without any pain or sensation"; thus the records run on, up to our own century.

And we pause for no more than a glance at attempts nearer in time to 1846 to establish the practice of Anæsthesia. The modern experimenters have been many: notably Dauriol, Hickman, Esdaille, Haller, Deneux, Blandin, Van Frieten, Juvet, Teden, Wright, Collier, Justine, Dickinson, Nicholson, Collyer, Smylie, Bowne, Long, Wells (Jackson made a suggestion of what was already well known). All these men "intentionally produced Anæsthesia for surgical operations" *—some by one agent, some by another, many of them by inhalation, and several by the inhalation of ether vapor.

Sir Humphry Davy, in 1800, had already recognized the fact that nitrous oxide, or laughing-gas, would annul pain, and suggested its use in surgery. The effects of ether vapor had been generally recognized as analogous to those of laughing-gas, and its properties of mitigating or annihilating pain had become the common property of text-books. Nysten, in his "Dictionary of Medical Sciences," speaks of the inhalation of ether as familiarly employed to mitigate the pains of colic, and figures an apparatus for its administration. In 1795 Dr. Richard Pearson published a pamphlet upon the subject, and

* The wording of the claim of novelty recently set up for Long.

in a work of Dr. Beddoes, published in 1796, the case of a patient is related, in which pain was relieved and sleep immediately produced by inhalation of the ether. Among American authors the stupefying effects of the inhalation of ether were noted by Godman (1822), Mitchell (1832), Professor Samuel Jackson (1833), Wood and Bache (1834), and Miller later.

Among the actual experimenters, some seem to have met with marked success. Dauriol specifies five cases of successful painless operations. Hickman's results, published in 1828, are remarkable. He describes a method of "suspending sensibility by the methodical introduction of certain gases into the lungs," during which "the most delicate and most dangerous operations are performed without producing pain in the individuals submitted to them."

But we forbear mentioning other equally definite results, such as were obtained by Collier, Esdaille, and others. (Long, Wells, and Jackson, from the special prominence given to their claims, will be considered separately.) We have brought forward enough for our present purpose. Our point is, that intentional Anæsthesia for surgical purposes, whether by potion, by inhalation, or otherwise, was perfectly well known up to the very date of 1846, when the "discovery of Anæsthesia" burst upon the world, and was hailed as its greatest boon.

1846 gave to the world a new mode of procedure—a new method—a practice before unpracticed.

But what, then, did 1846 give the world new? Why did this date form an epoch in surgery? In the answer lies the definition of the "discovery." It was simply that the familiar fact took upon itself a new and living form; that what was unreal and delusive became real; that what was impracticable became practicable and available: 1846 gave to the world a practice, a mode of procedure, for annulling the pain of surgical operations, a method, so clearly defined and so definite in characters that others could be taught to follow it.

Surgical anæsthesia an art.

And this gift was an art, according to the definition of the term by the highest authorities—for art implies performance,

practice; while science signifies the underlying principles involved. The practice of music is an art; its theory, a science—the sailing of ships, the art; the fundamental principles involved, the science, of navigation—the method of annulling pain for surgery, the art; the fact so long familiar to the world, i. e., that the entrance of certain substances into the blood would produce insensibility to pain—the science of Anæsthesia: 1846, then, gave to the world the art of anæsthetic inhalation.

Elements of novelty in this art: they consist in proof of the full power of ether, proof of the safe applicability of this power to surgery, and proof of these two points to the world. Dr. Morton alone and first proved (in proving these three points) the existence of surgical anæsthesia; for it only began in 1846, and began with his efforts. "He alone discovers who proves."

And wherein lay the novelty of this art? As we have seen, the past teems with attempts to establish it. What was new consisted (a) in the perfect demonstration of the till then imperfectly demonstrated anæsthetic properties inherent in ether, (b) in the demonstration that the property of producing complete insensibility to pain was applicable to surgery, and (c) in the demonstration of these two points to the satisfaction of experts (physicians) and the public—a triple success involving proof of the full power of ether, proof of its applicability to surgery, and proof of this to the world. Thus public demonstration or proof of the full power and the safe applicability of ether established universal anæsthetic inhalation. The "discovery" was simply success in demonstrating what others had failed to demonstrate. And this triple proof, this demonstration of a new mode of procedure and of its universal applicability to the needs of surgery, constitutes in itself all the novelty that can ever be claimed in connection with the "discovery of Anæsthesia." "He alone discovers who proves," says Dr. Paley. "He," says Sydney Smith, "is not the inventor who first *says* the thing, but he who says it so long, so loudly, and so clearly that he compels mankind to hear him." And, again, Goethe: "He is the inventor who

generalizes the single instance, and who makes the world concede that it is thus generalized."

"He is the first inventor in the sense of the act," writes Chief Justice Story, our highest authority upon the subject, "who has first perfected and adapted the same to use. . . . In a race of diligence between two independent inventors, he who first reduces his invention to a fixed, positive, and practical form would seem to be entitled to a priority of right to a patent therefor."

Surgical anæsthesia an invention—the invention of anæsthetic inhalation.

And this art was an invention rather than a discovery. To discover is to make known what has before existed. The expansive force of steam, the pressure of the atmosphere, galvanism, a new star—these were discoveries. The discoverer in these instances found out and made known previously existing facts. He who first noted that certain agents now called anæsthetic would produce insensibility to pain was the true "discoverer of Anæsthesia." Unfortunately, we can never determine who first noted and made known this fact; as we have seen, it is as old as historical time. But the practice and the performance of annulling pain for surgical purposes, of doing this at will and repeatedly, i. e., the system, the mode of procedure, the art of anæsthetic inhalation as practiced to-day, was new in 1846. No such mode of procedure had ever before become established. It had not previously existed; it was a new creation. It owed its birth to the practicability of the system. Never, up to that moment, had it been in such form that others, to use the words of Judge Story, were able "to produce precisely the result described by using the means specified, without any addition to or subtraction from them." The new mode of procedure was, therefore, an invention—the invention of anæsthetic inhalation.

Special after-claimants.

Who, then, was the inventor and revealer? First in the field was Dr. Charles T. Jackson, a chemist in Boston, who based a claim to the whole discovery upon an alleged sugges-

tion to "try ether," and upon an alleged previous knowledge of its property of producing insensibility, gained in 1842. Then came Horace Wells, of Hartford, who in his first publication, made three months after the Boston announcement, claimed that he had produced insensibility to pain in "twelve or fifteen" cases of extraction of teeth in 1844. And in 1849 appeared a communication to a medical journal* from Dr. Crawford W. Long, of Georgia, stating that he had used ether to produce insensibility three times in 1842, once in 1843, and once in 1845. None of these three individuals, be it noted, had ever, previously to 1846, written or printed a word upon the subject.

It is this latter after-claim of Dr. Long which has been again presented to the medical and general public. Its present status, indeed, is due to the reflected light derived from its modern advocate and exponent, Dr. Sims, rather than to its intrinsic worth. On its own merits, it had already been presented to the scientific world in 1849, weighed and found wanting in any single point of novelty, and had long remained unnoticed and forgotten. And nothing new has since come to light. We have therefore merely a repetition of the original story.

There are also other, less prominent, after-claimants. They are Drs. Esdaille, Collyer, Smilie, Bowne, Justine, Dickinson, Nicholson, etc.

Dr. Jackson's claims briefly analyzed.

Of Jackson's and Wells's claims we need say but a few words. Jackson's casual reply to a question, which he afterward magnified into a suggestion, comprised nothing novel; it had been many years in print; several men had tried ether, and it stood on record that its use was dangerous to life. As Brodie said, when the discovery was announced, "I have heard of this before. I have tried it on guinea-pigs, and it killed them. The question is, is it safe?" And Dr. Morton proved by several distinguished witnesses that at the time of this alleged suggestion he had already been buying sulphuric

* "Southern Medical and Surgical Journal," December, 1849.

ether in large quantities during the three preceding months, and had, moreover, questioned other authorities (Metcalf and Wightman) besides Jackson.

But why did not Dr. Jackson himself "try ether?"* Here, at least, would have been a slight advance, even if he failed in the trial. To meet this objection, he relates an experience occurring four years previously, in 1842, when he inhaled ether vapor to allay the irritation caused by the inhalation of chlorine gas. Here, again, there was nothing new. Pereira, in his famous work, then as now a familiar text-book, states, "the vapor of ether is inhaled . . . to relieve the effects caused by the accidental inhalation of chlorine gas."†

But Jackson says he became insensible to external impressions. Pereira writes: "*If the air be too strongly impregnated with ether, stupefaction ensues.*" But at this point Jackson takes a great leap. He says he drew the inference that a surgical operation could be performed upon a person while in this condition. Well, perhaps he did draw this inference, though one can not help regretting that he did not say so before his inference was proved to be a certainty, four years after, in 1846. I may infer that it is going to rain to-morrow. But it may not rain. If I wait till it rains to state my inference, I am not a little ridiculous. And, after all, an inference is no more than a theory—a guess; it needs demonstration, proof, before it becomes knowledge. Every recorded experimenter in the past, and, as we know, they were many, was possessed of this inference, and this, too, more strongly than Jackson was, for each of them acted upon his inference, theory, or guess, and attempted to produce surgical anæsthesia, which Jackson did not. Thus Jackson's claim is clearly based upon an hypothesis—a supposition, and that not one original with himself nor ever made the subject of a demonstration by

* "Did you make one little experiment?" said the late Professor Louis Agassiz to Dr. Jackson at a meeting of the Boston Academy of Arts and Sciences, adding dryly, after receiving a negative reply, "It would have been better if you had." On another occasion Professor Agassiz said, "If Dr. Morton had killed his first patient, would you [Jackson] have accepted the blame just as now you ask for the honor?" Dr. Jackson was silent.

† "Elements of Materia Medica," etc. London, 1839. Cited from Dr. H. J. Bigelow.

him. Not only had he never performed an experiment with the view of annihilating pain for a surgical operation (the inhalation of ether as prescribed by Pereira as an antidote to the fumes of chlorine can scarcely be claimed as such), upon himself, upon any one else, or upon an animal, but he had never even witnessed an operation until a month after Anæsthesia left the Massachusetts General Hospital as a perfect and demonstrated fact. A week after this test operation at the Hospital, he was thus interrogated by the Hon. Caleb Eddy: "Dr. Jackson, did you know at such time" (October 16th) "that, after a person had inhaled ether and was asleep, his flesh could be cut with a knife without his experiencing any pain?" He replied, "No, nor Morton either; he is a reckless man for using it as he has; the chance is he will kill somebody yet." And the Hon. Edward Warren states that at about the same time Dr. Jackson told him that "the new use of ether was dangerous," etc., "and would, he feared, be attended with fatal consequences, and that he (Dr. Jackson) was not answerable for the results, and that therefore he would refer me to Dr. Morton for further information."

This was after Morton's demonstration at the Hospital. Therefore what Morton and the world *knew*, Dr. Jackson, as shown by sworn testimony, declared that he did not know—in fact, denounced as unsafe in strong language. But Dr. Jackson was equal to the occasion. The discovery assumed an unexpected magnitude, and his ingenuity grew apace. He now stated that Dr. Morton had made all his experiments under his instructions, that he acted simply the part of a "nurse," and that therefore, on the grounds that "*qui facit per alium facit per se*," he alone deserved the credit. This claim received but little credence here in America where the facts were known; but, submitted on the as yet unimpeached authority of Jackson, to the French Academy of Sciences, preposterous as it was, it found, in the absence of denial and the presence of Milne Edwards, a warm personal friend and advocate of Jackson, a wide credence, whose influence is yet felt, not alone in Europe, but also, by reflection, here in America.

The conversations with Warren and Eddy, above quoted,

in themselves disprove that there was any harmony of action between Jackson and Morton. He denounced Morton, and disclaimed any connection with the use of ether. There is not a scintilla of evidence to prove that Morton worked under Jackson's directions. The latter was not even aware that Dr. Morton had asked Dr. Warren for a public test; much less had he suggested this course. This "nurse theory" is proven by a most overwhelming mass of evidence to be a fabrication. At a later period, when the subject of a patent was mooted, Dr. Jackson's name was inserted in it, in deference to his strenuous claims, and to secure him the payment of the five hundred dollars which he charged for his unnecessary piece of advice when he said "try ether." Of this patent we will speak further on.

Dr. Wells's claims briefly analyzed.

We will take less time with Dr. Wells's claim. He advanced upon the hypothesis of Jackson—the hypothesis in fact of the long line of experimenters, both ancient and modern, but most clearly expressed by Sir Humphry Davy, in 1800, and made the attempt to establish a method of painless surgery. His first statement, made some months after Dr. Morton's announcement, was that he had used nitrous oxide gas in "twelve or fifteen" cases of extraction of teeth in 1844. We will not enter into particulars. The final answer to him is that he established nothing, left nothing behind him, as a result of his experiments. More than this, he himself absolutely abandoned his researches for two years, or until the events of 1846 reminded him of what he had lost. And when at this date Dr. Morton wrote him of his success, instead of replying as the true discoverer would have done, "But, Dr. Morton, there is nothing new in what you write—I myself found this out two years ago," he writes: "If the operation of administering the gas is not attended with too much trouble, and *will produce the effect you state*," etc. Now the "effect" Dr. Morton stated was exactly what Dr. Wells saw fit some months later to claim as his discovery. This letter, still preserved, is in itself fatal to Wells's claim. Many, in short, had used anæsthetics as effectually as Wells did in 1844, and, fol-

lowing Wells, no one used anæsthetics in 1845. There was no sequence to Wells's efforts. Surgery still was agony.

There remains a single point which needs a little clearing up. So vividly was Dr. Wells impressed with the idea that the long-sought-for Anæsthesia could be made practicable, that he went to Boston, in 1844, and administered his nitrous oxide to a patient at this same Massachusetts General Hospital. This was a bold step, and deserved success. But the patient screamed with pain at the first touch of the knife, and Wells returned in disappointment to Hartford, abandoned the subject, and went into other business. But to-day Anæsthesia by nitrous oxide gas is a simple and available process. In Wells's hands at this test experiment it was not. With his apparatus and limited amount of gas, he was forced to fail, and, under the same circumstances, he would fail to-day. Wells himself seems never to have been able to produce the nitrous oxide anæsthesia of to-day. It is not generally known, but it is a fact, that after 1846, when all the world rang with the praises of ether, Wells made many futile efforts to produce anæsthesia with the gas, hoping thereby to supplant ether. So late as 1847 he repeated the Boston experiment in the amphitheatre of the New York Hospital before distinguished physicians and surgeons, among whom were Mott, Francis, Parker, Van Buren, and others, and, notwithstanding that he now possessed all the established experience of the ether anæsthesia, he again absolutely failed. If he produced anæsthesia in 1844, he could have repeated it in 1847. Here are two well-attested public failures, proving that nitrous oxide anæsthesia, as Wells understood it, did not work. How, then, reconcile the success of to-day in the use of this gas with the failure of 1844-'47? The explanation is simple. Nitrous oxide anæsthesia did not begin until 1863. The process, as now known, came into practice then; and the step from failure to success was a short but a vital one. It had already been pointed out in 1848.* It was the substitution of the large gas-bag—

*The credit of substituting a large and efficient volume of gas for the usual small supply of the "traditional exhilarating gas-bag" is due to Professor Henry J. Bigelow, of Boston, who in a breast excision, performed at the Massachusetts General Hospital, April, 1848, used successfully about sixty gallons of the gas.

the large volume of gas—for the small gas-bag and deficient supply used by Wells. Wells did not give enough gas.* Whatever credit may be due to his intentions, it would be manifestly unjust to accord to him a success which he never attained. Nitrous oxide to-day, and since 1863, produces anæsthesia, but it never did this in the hands of Wells.

Decisions in favor of Dr. Morton.

As against the claims of Jackson and Wells, a cumulative mass of decisions has been given in favor of Morton. In our own country, where there is no ultimate scientific tribunal of appeal, such decisions are of great value. The Board of Trustees of the Massachusetts General Hospital, composed of distinguished citizens familiar with every detail of the controversy, to whom Jackson was well known and Morton unknown, decided with one voice in favor of Morton in 1848; and subsequently, in 1849, after reviewing their decision, at the request of Jackson, unanimously confirmed it. This decision, rendered as it was by a competent "jury of the vicinage," should be final. Further, no fewer than six† committees of the United States Congress have unqualifiedly affirmed the justice and the validity of Dr. Morton's title as the real discoverer or inventor.

But legislation upon these reports of committees, when they were presented to Congress, was obstructed in each instance by partisans of one after-claimant or the other. At last, two more committees, on different occasions, reported simply "to grant relief generally," the bills being thus worded, at Dr. Morton's request, in order that after-claimants should submit their claims to judicial investigation and verdict. This invitation they never could be brought to accept; they courted darkness, not light.

* The reason usually assigned for the Boston failure is, that the gas-bag was removed too soon. The true cause here, as well as in New York, in 1847, of failure was clearly the inadequacy of the process, as above detailed.

† Reports of Select Committee, H. R., 30th Congress, 2d Session; Naval Committee, H. R., 32d Congress; Military Committee, Senate, 32d Congress; Naval Committee, Senate, 32d Congress; Select Committee, H. R., 32d Congress, 1st Session; Military Committee, Senate, 37th Congress, 3d Session.

Furthermore Dr. Morton has been sustained by the almost unanimous attestation of the medical faculties of Boston, New York, Philadelphia, and other cities, and by the great mass of the medical profession generally, by a host of eminent men of science and letters, by the chief authorities of the National Government, and by institutions of learning in America and Europe.

Soon after the announcement of 1846, the French Academy of Arts and Sciences, to which Dr. Morton's case was scarcely presented, while Dr. Jackson's was engineered by a personal friend and a member, made a mutual award—to Jackson for the observation, to Morton for the application. Could the Academy repeat its investigation at this day, it would find it difficult to locate the observation that ether might produce insensibility to pain. Before Jackson, this observation had been made and recorded by Townsend, Nysten, Pereira, Orfila, by Godman, Mitchel, Professor Samuel Jackson, Wood and Bache, and others. Unlike these observations, Jackson's was an after-thought; his inference had never been recorded until it was no longer an inference. If the credit lies in the observation, it certainly does not belong to Jackson. The application of this observation was the only novel thing about the discovery, and with that the Academy credited Morton.

Much as Dr. Morton was honored by this award (since the vital point was granted to him), he actually refused to accept any decision in which his name was joined with Jackson's; and finally, after two years' delay, the Academy forwarded to him the Montyon prize, in the form of a gold medal, without consulting him.

The patent.

At this stage, in a *résumé* of the "History of Anæsthesia," the patent taken out chronologically belongs. Much unkind language has been used about this patent; it has been the weightiest weapon of attack possessed by after-claimants. No opportunity has been lost to bring it forward in a manner derogatory to Dr. Morton, as covering a "secret remedy," "the Letheon," "a patented compound," etc., etc. In the first place, this proves nothing against Dr. Morton's title to discovery; on the contrary, it is the strongest point in his favor,

that the Government, counseled by such men as Webster, Choate, and Curtis, and after much deliberation, granted him a patent.

And it is untrue to speak of the patent as implying a "secret remedy." The very word, from *pateo*, to be open, signifies the opposite of secrecy; letters patent give certain privileges to the holder, but are open to the inspection of every one. There was no secrecy about the ether patent. The agent ether and the various steps necessary to its successful application to the alleviation of pain, as then known, were specifically detailed. The patent did not imply secrecy, but protection to a citizen for the product of his brain. And "Letheon" was probably as good a name for an agent applied to a process of producing oblivion as one would suggest to-day for the same process, did it now arise—quite as expressive as *Anæsthetic*, now applied to the same class of agents, or as *Nepenthe*, an older term.

When one recalls the great fact that in the anæsthesia of 1846 surgery and medicine secured an ally which more than doubled their usefulness, that, in fact, a world got relief from pain, it seems somewhat hypercritical to elevate into importance the side-issue of a patent.

And, after all, this matter of a patent is simply a question of medical ethics. It may be looked at in two lights—the one, as regards the medical profession; the other, as regards the Government that granted it. As regards the former, it was an unfortunate mistake. It created at first in medical circles a prejudice against the invention—not because the remedy was secret, for the veil of secrecy was instantly dropped so soon as Dr. Morton was sure of its success and of its not being pirated from him*—but because it is against the accepted "code of medical ethics" to patent anything. The medical profession, it is said, gives its labors, its time, the product of its brain, to humanity; and so it does, to a certain extent, and it is to its honor that it does. But extremes of sentiment are not always borne out in practice. Physicians are paid for their services, when those benefited can afford to pay. And certainly the world could afford to pay for its

* How necessary his caution, later events verify.

greatest boon : the world is not a poor patient. But, again, physicians do take out certain patents. Those who set their knowledge down in books copy-right their works, are paid for the product of their brains, and are protected in an exclusive right to the results of their labor. This is no less than a patent. But, after all, discussion upon this point, as regards Dr. Morton, is neither here nor there, for at the time of the discovery he was not a member of the medical profession,* and therefore was not amenable to its code of ethics; he was an experimenter, and entitled to different views. His real intention was to protect his invention during its infancy, to keep it within control until its use had become established, to publicly verify his right to it, and properly to derive some profit from the gift of what was his own to give. In certain respects it was fortunate that the application of the ether at the outset was protected by a patent. At the time of its announcement its marvelous power was discredited; it was inhaled from an instrument then considered essential to success; many, even under skillful direction, failed to carry the inhalation further than the exhilarating stage,† and, had it been used indiscriminately before its capacity and its dangers had been fully tested by scientific authorities, there is but little doubt that some accident occurring in ignorant and unskillful hands would, for the time at least, have delayed its general use.

As against the Government, the case is a remarkable one. There is no question of taste or propriety here. If Dr. Morton violated the code of medical ethics (an artificial code at best), in taking out a patent, the Government which gave the patent violated the very soul of ethics, which is honesty; struck at the root of all ethics, by itself using without any repayment the article and its application—the process, whose exclusive control and ownership it had guaranteed on its

* The degree of Doctor of Medicine was conferred upon him in 1849.

† “I placed some sulphuric ether in the instrument, and gave it to a gentleman to inhale; the effect was to cause him to laugh heartily, but there was nothing like sleep. What should be done in such a case?”—*Extract from a letter from a well-known physician of Philadelphia, dated November 12, 1846.*

honor to the patentee.* The Government, during fourteen years (the term for which the patent was issued), stultified its own acts of protection. After that, what citizen would respect the rights of the inventor of the anæsthetic art?

But it has been urged in favor of the Government that the dimensions of such an invention were of too great magnitude to be the subject of a patent; that it was like patenting the air we breathe or the water we drink, and that, therefore, it was justified in disregarding its guaranteed protection and using it itself. If the Government were called upon to pay full value for what it received, this argument would hold good, for the payment of such a price would be impracticable; but it was asked to pay a reasonable sum, and it paid nothing. The discovery had both an immeasurable and a compromise value, and this latter an honest debtor could pay. It is a curious anomaly, that reward should be in inverse ratio to the magnitude of the service rendered.

Dr. Long's claims analyzed at length, and refuted by his own words: his claims based upon five experiments scattered over five years.

We now come to what has been termed a foot-note to the ether controversy; an addendum dating mainly from a publication made in 1877. That, in reading an analysis of this claim, a friendly critic may say *labor superabat opus*, is freely granted; but, on the other hand, it seems worth while to make and preserve a public protest against even so foolish a claim, since it has an act, however ill-considered, of a State Legislature to rest upon, and since, moreover, thus far but one side of the question has been heard either by the general public, to whom the claim has been assiduously presented, or in the legislative proceedings in Georgia just referred to, by which, by a snap judgment, the claim was recognized.†

* "I consider a patent-right as sacred as private property," said the Hon. Alexander H. Stephens, of Georgia, in alluding to this subject in 1854, "and would exert my influence as far as any one to prevent the Government from pirating."

"Private property" should not be "taken for public use without just compensation."—"Constitution of the United States."

† On the occasion of the presentation to this body of a combination portrait of Dr. Sims and of Dr. Long, in honor of the latest discovered alleged discoverer.

It seems that, among other after-claimants, one, an estimable physician of Georgia, Dr. Crawford W. Long, woke up to the fact only so late as 1849, three years after anæsthetic inhalation by ether (1846) had been in universal practice, that it would be well to record in some medical journal the statement that he had "used sulphuric ether by inhalation in surgical operations on several occasions" (as many as five in the course of as many years) prior to 1846. He accordingly, in December, 1849, published "an account of the first use of sulphuric ether by inhalation as an anæsthetic in surgical operations." This communication, tardy as it was, Dr. Long very properly made, in simple justice to himself. No special attention was paid to it, for reasons which will soon become apparent. He seems indeed merely to have desired to place himself on record, in connection with this subject, in 1849. And now, in 1877, this forgotten record is dragged from its obscurity, and amplified and adorned into a patent of discovery. The interests of truth will be best served by referring back to Dr. Long's original text. We shall then find opportunity for comment upon this extraordinary revival.

Dr. Long unheard of until the world had enjoyed exemption from pain for three years.

"For nearly three years," writes Dr. Long, in this his first public utterance (1849) upon the subject of anæsthesia, "the various medical journals have contained numerous articles on the employment of sulphuric ether by inhalation," etc., etc. Dr. Long had, up to this moment, contributed none of these "numerous articles." The process of anæsthetic inhalation—Anæsthesia—had sprung into life and reached its perfect growth through no word of his. No one had yet heard of him. He had not, therefore, contributed in the minutest degree to the revelation, hailed with universal astonishment and acclamation, and adopted at once into practice in 1846. His claim, such as it is, must stand or fall by itself. He was an isolated observer, isolated from the world, and isolated as regards Morton, Wells, or Jackson. Neither he nor his experiments were known to any of these three. There is in his case no question of mutual acquaintance, suggestion, or the like. And yet we

are told by a distinguished Georgian Senator,* on the occasion of the recent legislative proceedings, that "it was reserved for one of our own fellow citizens, . . . to confer not only a signal triumph upon Georgia, but a blessing upon the human race, which is beyond the power of language to express or the imagination to conceive." But Dr. Long conferred nothing; that is just the point. "The human race" never heard of him until it had enjoyed exemption from pain for three years. How little information Dr. Long had conferred upon the subject of the inhalation of ether in the South may be gathered from the comments of the leading medical journal of a neighboring State (the "New Orleans Medical and Surgical Journal"), which, in the January following the Boston announcement, said: "That the leading surgeons of Boston could be captivated by such an invention excites our amazement. . . . Why, mesmerism, which is repudiated by the savants of Boston, has done a thousand times greater wonders. . . . What shall we hear next?"

Dr. Long's original claim and its recent amplifications.

It is certain, then, that Dr. Long had no share in the events of 1846, the hitherto recognized era of painless surgery. What, then, did he do? The whole Long claim resolves itself into two parts: the one, what Dr. Long says of himself; the other, what Dr. Sims says of him. We shall show that the former is not a basis for a claim to discovery, and that the latter is a claim built up from insufficient data.

Dr. Long states that he "was the first to use ether as an anæsthetic in a surgical operation," and this in 1842, adding then in detail the five instances in which he had "used" it (three times in 1842, once in 1843, and once in 1845). Dr. Sims states that Dr. Long "was the first man to intentionally produce anæsthesia for surgical operations, and that this was done with sulphuric ether in 1842." The one states his "use" of ether, and later on confesses that his method in itself could not have produced anæsthesia, accidentally even; the other maintains that anæsthesia was produced—two claims as differ-

* United States Senator Gordon.

ent as black and white, for the first constitutes failure, the second, success.

We shall soon see that Dr. Long expressed his claim correctly; that Dr. Sims has made an unjustifiable assertion. Dr. Long shall prove that Dr. Sims has made an erroneous deduction.

Originally a claim of mere "use" of ether: in this Dr. Long had been forestalled.

Here naturally arises the question of what Dr. Long means by the "use" of ether. This word is a misleading element in his claim. That he used ether, that he gave it by inhalation—this much of course is admitted. But what was the result? Mere use is inadequate to constitute discovery or invention. The past teems, as we know, with records of attempts to produce insensibility to the pain of surgical operations—whether with this gas or vapor or that makes little or no difference. And sulphuric ether by inhalation had already been used for this purpose. Wright, as early as 1829, records it as an habitual practice of his to give ether by inhalation in a surgical operation upon the ear.* Men *used* steam to propel boats before Fulton, electricity to convey messages before Morse, vaccine virus to avert small-pox before Jenner,† and ether to annul pain before Morton.

The vital point is, how and in what manner did Long use ether? We shall show from Dr. Long's own words that he did not use it successfully; that he did not produce insensibility to pain—Anæsthesia, as we know it to-day, the Anæsthesia that convinced the hospital surgeons and the world; that he did not advance upon the attempts of the past; that he did not therefore uncover a hitherto unobserved fact or law, i. e., discover anything, nor combine well-known facts or laws into a new mode of procedure—i. e., invent anything; that he did not himself believe in his experiments; and that, moreover,

* "The Medical Record," New York, August 2, 1879. Communication by Dr. SAMUEL SEXTON.

† Benjamin Jesty is claimed to have vaccinated his wife and two sons in 1774, twenty-two years before Jenner introduced vaccination.—Dr. THOMAS F. WOOD, "North Carolina Medical Journal," October, 1879.

he absolutely abandoned them; that no one else used ether because he used it (he found no followers); and that, finally, not only on the evidence of well-known facts, but also on his own confession, the world is under no obligation to him for any single item of information.

"He discovers who proves," we may again quote from Paley; but of the three proofs, essential to the establishment of practical Anæsthesia—proof of the full capabilities of ether, proof that these were applicable to surgery, and proof of this to physicians and the world—Dr. Long did not accomplish even the first.

Dr. Long's confession that his "use" of ether was a total failure, and that he, therefore, gave up experimenting.

A few quotations will establish these points. We shall be straightway brought to the very pith of his case by the following summary, as given by himself, of his communication of 1849, already referred to:

"The result of my second experiment in etherization was such as led me to believe that the anæsthetic state was of such short duration that ether would only be applicable in cases in which its effects could be kept up by constant inhalation during the time of the performance of the operation. Under this impression, up to January, 1847, I had not used ether in but one case in extracting teeth, and thus deprived myself of experimenting in the only class of cases which are of frequent occurrence in a country practice."

Now, in the first place, the remarkable admissions contained in this sentence would be valueless if any subsequent experiment had taught Dr. Long more than he here enunciates. But he never of himself learned more than this, for he distinctly states that he "was under the impression" embodied in this quotation until January, 1847, three months after the announcement of universal and practical Anæsthesia in 1846.

What, then, was Dr. Long's impression? What was the exact condition in 1842, which, seen through the glasses of 1846, he names Anæsthesia? Dr. Long arrived at the conclusion that the "anæsthetic state was of such short duration

that ether would only be applicable in cases in which its effects could be kept up by constant inhalation during the time of the performance of the operation"—a state, in fact, so short in duration as to cause him, as he says in the next breath, "to deprive himself" of experimenting in even the extraction of teeth, the simplest, and most accessible of cases which occur in a country practice. Now, the extraction of a tooth is a very short operation. Dr. Long's "anæsthetic state" must have been over in a twinkling. If it did not last long enough for tooth-pulling, it would hardly do for surgery.

This, then, is the condition of affairs which Dr. Long dignifies with the title of Anæsthesia. It was easy enough in 1849 to apply the then familiarized terms to this crude "state" occurring in 1842; to write upon the tablets of the past the records of the present, teeming with new and fruitful demonstrations. But the anæsthetic state of to-day and since 1846 is of long duration—as long as the surgeon chooses to make it. In Dr. Long's experiments it was short; but why short? Evidently because he found "constant inhalation," i. e., constant breathing of the vapor, impossible. If this had been possible to him, he would have resorted to it. There was no more difficulty in 1842 than there is to-day in producing an anæsthetic state of long duration, if Long had known that this could be done. Why limit his cases to a minimum, and deprive himself of experimenting in such simple cases as tooth-pulling, if constant inhalation were known to him? Clearly, he did not know it.

Erase at this minute from human knowledge all that was taught and learned of Anæsthesia in 1846, all that is known of Anæsthesia to-day, and let the reader put himself in Dr. Long's place—let him repeat in the hospitals of the land Dr. Long's process without taking from or adding to it; let him produce with ether an "anæsthetic state of short duration," incapable of maintenance by constant inhalation—a condition so transitory, so inapplicable as to cause the experimenter himself to deprive himself of its use in the very simplest of minor operations which were constantly at hand—and we submit that this is an inadequate basis on which to rest a claim to being an inventor or discoverer of ether Anæsthesia.

There was something wrong, something unsuccessful, about such a process as Dr. Long describes. It does not express what ether is capable of; does not constitute the Anæsthesia of to-day, as known and practiced all over the world—a state of long duration, prolonged at the operator's will by constant inhalation, and applicable to all cases. Can it be believed that by this process a single capital operation could be performed? Dr. Long had never tried ether in such an operation, and, more, refused to continue it in minor operations. Repeat his process to-day, and no doubt some ready mind would take the ether in hand, prolong the inhalation, and cause *forced* Anæsthesia. But Long did not do this. Wilhite did it accidentally—Long, never. Indeed, his process was not Anæsthesia at all, as we shall soon see. It was failure.

Causes of Dr. Long's failure; in his five experiments he never got beyond the exhilarating effects of ether common to the "ether frolics" of the time.

It becomes interesting at this point to know why Dr. Long failed; why he deprived himself of its use in more than five minor operations, and why he abandoned his experiments. We shall find the explanation of this equally explicitly narrated, though in a light, as is natural, none too unfavorable to the narrator. Let us look more closely at this second experiment, which impressed Dr. Long so vividly over the whole period of time (1842–1847) during which there is a chance of a claim for originality—this experiment which, as he confesses, embodies his whole knowledge upon ether inhalation.

Venable, the subject of it, was an expert in breathing ether. He says, "The young men of Jefferson and the adjoining counties were in the habit of inhaling ether for its exhilarating powers, and I inhaled it myself frequently for that purpose, and was very fond of its use"—i. e., he administered it to himself. "Ether frolics" seem to have been very common at this time in Georgia, as well as elsewhere. Dr. Long and Venable often participated in them, and the former describes how they originated in his vicinity: "The subject of the inhalation of nitrous oxide gas was introduced in a company of young men, . . . and several desired me to prepare

some for their use. I informed them that I had a medicine (sulphuric ether) which would produce equally exhilarating effects." There was nothing novel in this. The similarly exhilarating properties of nitrous oxide and ether were stated in the text-books of the time, and had been tested in most of the medical schools of the land. But Venable and Long agreed between themselves ("had some conversation about the probability that the tumors, small wens upon the neck, might be cut out while I was under the influence of ether, without my experiencing pain") to test the point as to whether ether would annul pain. There was nothing novel in this. This attempt had been made at frequent intervals since the beginning of historical time; it had, moreover, been accomplished with considerable success by the use of ether.

But we will proceed slowly. We must know who is giving the ether. Of the first operation, Venable deposes under oath, "*I commenced inhaling the vapor before the operation was commenced, and continued it until the operation was over.*" Then Venable kept his eye on the whole affair, knew just what was going on; otherwise, how could he know and swear to it that he continued the inhalation until the operation was over? And of the second he says: "In this operation *I stopped inhaling the ether before the operation was finished. . . . I inhaled the ether in both cases from a towel, which was the common method of taking it.*" And Dr. Long says of the same experiment, "The *patient* continued to inhale ether during the time of the operation." Now, surely, Venable administered the ether to himself, and remained conscious all the time. And Dr. Long recognizes that his patient retained consciousness. Speaking of this same crucial second experiment, he says, "In this operation the inhalation ceased before the first incision was made; since that time" ("up to January, 1847") "*I have invariably desired patients*" (three more during three years), "*when practicable, to continue its inhalation during the time of the operation.*" This instruction implies coöperation in the process on the part of the patient. It is just such an instruction as would be given to a person administering ether to himself. Addressed to the etherized and unconscious patient of to-day, it would be ridiculous. This

point, as to whose hand administered the ether, is studiously left in doubt by Dr. Long; but we see that it must have been Venable's. And we now, for the first time, understand clearly why the "anæsthetic state" was of "short duration"; why "constant inhalation" was impracticable. Venable was administering the ether to himself, and Dr. Long did not know that there was any other method of giving it. No wonder that under these circumstances the state was brief, evanescent, and incomplete: it would be equally so to-day.

In Dr. Long's crucial and most successful experiment, the patient, as both testify, felt pain.

But now comes the damnatory point of this second experiment. *The patient felt pain.* This both Long and Venable confess. Dr. Long says the patient "exhibited signs of slight suffering, but asserted after the operation was over that the sensation of pain was so slight as scarcely to be perceived." Venable says, "I felt a little pain." Here, then, is positive failure. Dr. Long's anæsthetic state of short duration was nothing more nor less than the fleeting peripheral numbness often associated with the first or exhilarating stage of the complete anæsthesia of to-day. Certainly, Long could not have performed a capital or prolonged operation. His state was not the familiar stupor of to-day, an utter annihilation of both consciousness and pain; it was, as we have said, simply a momentary peripheral numbness of the skin—then, as now, inadequate to the simplest needs of surgery—inadequate, as Long found it, for the extraction of teeth even, much more so for the painless extraction of a wen from Venable's neck.

But why did Dr. Long not take the towel into his own hand and force the ether? Why not make his patient insensible to pain, if he knew that this could be done? Why not give more ether, and make the "state" of long duration? He did not know that this was possible.

Dr. Long paused on the very threshold of discovery.

Knowing what medicine knows to-day, how wonderful this halting of Long—this pause at a most critical moment—on the very threshold of discovery! So nicely balanced is

the situation that it almost seems as if he would topple over into discovery ; but he falls the other way. It seems almost inexplicable that he did not seize the towel, force the Anæsthesia to the stage of stupor, perform the operation, and proclaim the discovery to the world. In doing this he would have at least proved the inherent power of ether, as we now know it. But he failed in the first step. Naturally, no other step followed, and this barren experiment remained meaningless to Dr. Long, and unknown to the world, except as an after-thought. Place Long, with his process, as he himself describes it, in his hand, in Morton's position in 1846, in a crowded amphitheatre of skeptical witnesses, and can any one believe that he would have been greeted as the "discoverer of Anæsthesia" ?

Dr. Long admits that the publication of etherization did not bide his time ; that he made nothing whatever known to the world. He could not, then, as is claimed, have been "a world's benefactor."

It now only remains to show, on his own admission, that the world got no knowledge of Anæsthesia from Dr. Long, and that on that ground alone it owes him no gratitude. He writes : "While continuously experimenting with ether as cases occurred" (there were intervals of more than a year between some of his five cases), "with a view of fully testing its anæsthetic powers, and its applicability to severe as well as minor surgical operations" ["I had no opportunity of experimenting with it in a capital operation" *], "others more favorably situated engaged in similar experiments, and consequently *the publication of etherization did not bide my time.*" This was exactly Dr. Long's misfortune.

We have proved beyond a doubt that Dr. Long never produced a true state of Anæsthesia, and now we have the proof that he never made any of his knowledge, such as it was, public. Dr. Long, then, gave the world absolutely nothing. "The publication of etherization did not bide his time." He had not yet "fully tested the anæsthetic powers" of ether.

* Quotation in brackets taken from another place.

At the rate of an average of one case a year of the kind he has described, how long would the world be in getting possession of Anæsthesia? And yet the enthusiastic Legislature of Georgia has declared that he is "a world's benefactor," and on this ground has selected Dr. Long as one of its two representative Georgians who are to be placed in the National Picture Gallery, at Washington. May we modestly ask what benefaction the world received from Dr. Long?

Dr. Long confesses that he was uncertain whether his transient "effects" were due to the imagination, peculiarity of the patient, mesmerism, or ether.

Dr. Long leaves us in no doubt as to why he made no publication. Not only had he not fully tested the anæsthetic powers of ether, but he was by no means certain that his "anæsthetic state" was due to ether. He writes: "The question will no doubt occur, Why did I not publish the results of my experiments in etherization soon after they were made? I was anxious, before making any publication, to try etherization in a sufficient number of cases to fully *satisfy my mind that Anæsthesia* [sic] *was produced by the ether, and was not the effect of the imagination, or owing to any peculiar insusceptibility to pain in the persons experimented on.* At the time I was experimenting with ether, there were physicians 'high in authority' who were advocates of mesmerism, and recommended the induction of the mesmeric state as adequate to prevent pain in surgical operations."

Here we have the whole story. Dr. Long's method in itself could not have produced a valuable Anæsthesia. We know on his own admission and his patient's that it did not do so, and Dr. Long himself now tells us that he did not know exactly what the "state" was; that he was uncertain about the true nature of his results. He was *waiting* "to fully satisfy his mind that Anæsthesia was produced by the ether," to test this. He was uncertain whether the effects obtained were due to imagination, to idiosyncrasy of the patient, to mesmeric influence, or to ether. In fact, he never learned more than this until informed by the "numerous articles" published after 1846. No wonder he did not publish his five experiments to

the world—that at his rate of progress the “publication of etherization did not bide his time.” His was an “ether frolic,” rather than the Anæsthesia of 1846.

This, then, was Dr. Long’s “use” of ether—an after-thought recital of five scattered experiments, not novel in their scope, unappreciated and abandoned by their author, unpublished to the world, unrecognized by any scientific authority, wholly imperfect and unsatisfactory in their results, and not connected by the slenderest thread to the beginning of practical Anæsthesia in 1846. In short, so far as Anæsthesia is concerned, Dr. Long need never have drawn breath.*

Modern amplification of Dr. Long’s claim refuted; its sophistry.

Such is what Dr. Long says of himself. We now come to the second part of the Long claim—what Dr. Sims says of him. And we take up at once Dr. Sims’s main assertion. It is “that Long was the first man to intentionally produce Anæsthesia for surgical operations, and that this was done with sulphuric ether in 1842.”

In the light of historical facts already cited, and of Dr. Long’s own utterances, already quoted, this broad assertion falls flat in every direction. For, in the first place, Dr. Long was *not* “the first man to intentionally produce Anæsthesia for surgical operations.” Hundreds of men had preceded him, notably Esdaille, Hickman, Dauriol, Wright, and many others in modern times, to say nothing of the far past. Nor, in the second place, was he the first to use ether; its stupefying effects by inhalation had been noted and recorded by many authorities; these effects had been utilized to annul pain by several of these; and, more than this, Wright, in 1829, had habitually employed ether vapor by inhalation to annul the pain of an operative procedure upon the external ear. If we ask why he did not push the matter, and extend the applica-

* “Those only are here reckoned as discoverers from whose work may be traced, not merely what might have been the beginning of the discovery, but the continuous history of events consequent on the evidence of its truth. Long, it is true, might under this rule be excluded; yet his work can not fairly be separated from the *history*.”—Sir JAMES PAGET, *op. cit.*

tion of ether, we may ask with equal reason the same question as regards Long. And, thirdly and finally, Dr. Long did not produce Anæsthesia at all. He had no right to this word, borrowed from later and another's demonstrations. The word does not apply to the ephemeral "state" produced by the self-administration of ether common in "ether frolics." Dr. Long confesses that his anæsthetic state thus produced was too short for tooth-pulling even; for this reason he abandoned it, "deprived himself" of its use, in these cases. And he saw no way out of his difficulty; he had no idea of the forced Anæsthesia of to-day; he simply knew what every well-informed medical man knew, that ether in small amounts by inhalation allayed sensibility to external impressions.* He might have read also that in large doses it produced stupefaction;† but he never tried the large dose.‡ The very foundation falls out from Dr. Sims's anæsthetic superstructure. At all points where well-known historical facts do not confute him, he is confuted by Dr. Long's own statements. But Dr. Long's advocate pays little attention to the facts in the case. The object of his exposition for Long is apparent. His appeal is to the uninformed, to the new generation, too indifferent or too occupied to do more than accept his fiat. His argument apparently is an attempt to befog the public mind, to so confuse and intermingle dates, actors, and results in the history of Anæsthesia as to cause the reader to doubt that there was any one central figure in the discovery far overtopping all others. He affects to distribute a certain amount of credit to all the parties to the ether controversy—to make them all in some

* "I have in these cases put a teaspoonful of ether into a cup or evaporating dish, floating in a basin of warm water, and caused the patient to inhale the vapor, by merely breathing over the dish, which in almost every case will *allay* the irritation."—"Diseases of the Ear," &c., by William Wright, Esq., Surgeon Aurist to her late Majesty Queen Charlotte. London, 1829. Cited from Dr. Samuel Sexton, New York.

† Pereira, and others.

‡ Wilhite was a student in Long's office. The latter knew of a supposed dangerous stupor of an hour's duration, produced by Wilhite in 1839 by a forced administration of ether, and this no doubt deterred him from repeating the process. Wilhite seems to have suggested ether to Long: he was, indeed, Long's Jackson.

way related and dependent, one upon the other. He drags down those who are prominent, and elevates those who are otherwise. He ignores the fact that the perfect demonstration of 1846 differs from any other experiments made in the same direction, and reduces all the parties to the controversy to one common level of experimenters. The whole affair is thus reduced to a simple question of priority—of who was the first experimenter. It is no longer a question of results, but a simple question of time—of date. Here is the opportunity to insert Long, and we find him straightway included. Then, with the adroitness of a juggler, Long, Wells, Jackson, and Morton are well mixed up, truth merges into fiction, facts become distorted into new relations, and suddenly, with a few clever passes, Long looms up from out the confusion, labeled as the “discoverer of Anæsthesia.” And the effect of the pose is heightened by the apparent air of truth which gives weight to the false impressions conveyed. “The labors of Long and his co-workers” is the new description which we get of the discovery of Anæsthesia. We are asked to believe that, in some mystical way, Long was a “mutual laborer”; that he contributed as a “co-worker” to the invention of 1846; and, finally, he is called a “co-discoverer.” This is pure sophistry. Dr. Long was no more a “co-worker” than Dauriol, Hickman, Wright, and hundreds of the experimenters of the past. Either he invented or discovered anæsthetic inhalation for surgery in 1842, or he did not. No claim of his contribution to or participation in the result of 1846, which is the date of the world’s real knowledge and practice of painless surgery, can for a moment be entertained, however ingeniously it has been presented; and, finally, it may be remarked that, if Dr. Long had made a discovery in 1842, he deserves the execration of mankind for taking no measures to give it to the world. His silence for four years (up to 1846, and indeed up to 1849) is irreconcilable with the claim now made for him of being a discoverer.

Several of Dr. Sims’s misstatements corrected.

Several grave misstatements of fact contained in Dr. Sims’s communication remain to be pointed out.

Dr. Long's own statement of his "experiments in etherization," as he terms them, is that they numbered five—three in 1842, two of which were upon Venable, one in 1843, and one in 1845. In two minor operations, in which Dr. Long specifically states that he did not use ether, Dr. Sims states that he did use it, thus wrongfully adding to the scant record this number—an addition of no inconsiderable importance, constituting as it does forty per cent. of the whole. Here is the evidence of this. Dr. Sims states that "on the 9th of September, 1843, Dr. Long exsected without pain *three* small tumors from the head of Mrs. Mary Vincent." In recording this same incident of the 9th of September, 1843, Dr. Long himself writes: "From one of these patients (Mrs. Vincent) I removed three tumors in one day; the inhalation of ether was used *only* in the *second* operation."

Again, much pains is taken to create the impression that Dr. Long "published" the results of his experiments to the world. A sort of quibble in the use of the word quoted is conveyed; this apparently for the purpose of keeping from view the fact that Dr. Long really published nothing in print until 1849. "He," Dr. Long, "published it [the discovery] before all men," writes Dr. Sims, though we have this modification added, "True, his was a very contracted world. He lived in an obscure little town, where there were no railroads," etc., etc. But we may ask, Was there no post-office in this vicinity by which communication with the outer world could be attained?

However, Dr. Long himself contradicts this idea of publication, whether by print or public utterance. In the first place, he says: "The question will no doubt occur, Why did I not publish the results of my experiments in etherization soon after they were made? I was waiting to fully satisfy my mind," etc., etc. And again, more explicitly, "The publication of etherization did not bide my time"; or again, "Had I been engaged in the practice of my profession in a city where surgical operations are performed daily, the discovery would no doubt have been confided to others who would have assisted in the experiments." Compare with this Dr. Sims's rendering: "Dr. Long's operations under ether were witnessed

and known by all medical men in his neighborhood, and by the whole community." The statement, therefore, that Dr. Long published the discovery before all men is manifestly an exaggeration. The inconsistencies between Long and his expounder are irreconcilable; and these and what follow are but passing samples of their whole tenor as compared with Long's original text.

A most inexcusable statement is the following: "In Boston, Mass., a monument has been erected to the 'discoverer of Anæsthesia.'" This statement is untrue. The monument itself stands a silent but inexorable witness of its untruth. The inscription reads, "To commemorate the *discovery* that the inhalation of ether causes insensibility to pain. First proved to the world at the Massachusetts General Hospital, in Boston, October, 1846." "A citizen of Boston has erected this monument." The word "*discoverer*" is not upon the monument. Furthermore, not one of the parties to the ether controversy went to this hospital in October, except Dr. Morton. His hand administered this ether referred to; he suggested the experiment, and it was made at his request, backed by the efficient aid of Professor Henry J. Bigelow; and whatever knowledge of ether the surgeons of this hospital got in October, 1846, they got, as they have all sworn to, from Dr. Morton. But, evidently, it is not wished in this instance that this matter should be understood. The inscription is first falsified, and then the reader is further deluded by these words: "But no man is thereon designated by name," the implication being that the matter was left in doubt. Any citizen of Boston may erect, we suppose, a monument, putting thereon his own inscription. The monument, therefore, does not express the opinion of the city. But "first proved to the world, etc., *in October, 1846*," at any rate, excludes Long. It can obviously refer to no one but Dr. Morton. His deeds, though not his name, stand written thereon. No other name would fit into this inscription. It has never been claimed by any one that either Long, Wells, or Jackson was present at this hospital demonstration in 1846. Dr. Morton *was* there. The inscription, then, refers to him, if to any of the four. And yet, with pleasant effrontery, it is suggested "that the

names of Long, Wells, Morton, and Jackson be inscribed on the Boston column, one on each side, as co-discoverers of Anæsthesia."

But, of many misstatements by implication, none is unkindier than to have drawn Dr. Morton into a comparison with the mental misfortunes of two of the claimants to the discovery. We quote: "Jackson has been for some time in an insane asylum, hopelessly incurable." "Wells, disappointed in carrying off the honor of the great discovery of Anæsthesia, became insane, and committed suicide in New York, in 1848." "Morton, disappointed at not receiving a pecuniary recognition from Congress, fretted himself into a congestion of the brain. In July, 1868, he returned to New York from Washington, in the wildest state of excitement," etc., etc. As regards Morton, this is pure romancing. He had not been in Washington for four years—not since 1864. Then follow other details, one of which is, that Dr. Morton was taken moribund to St. Luke's Hospital, "where he died an hour or two later." "How mournful the fate of these men!" adds the chronicler. The first fruit of such a presentation of the case was a statement in public print that Dr. Morton had "died half deranged in St. Luke's Hospital"—the truth being that he died from an ordinary attack of cerebral congestion, accompanying acute rheumatic fever, while driving in Central Park.* His mind had never been disordered in the slightest degree up to the day of this attack. Simple justice demands this statement in a case where the commonest instincts of humanity should have forbidden an intrusion, particularly an erroneous and disingenuous one.

* "DEAR DOCTOR: I am happy to be able to aid you in correcting the report you refer to, viz., that your father, Dr. W. T. G. Morton, became insane, and died in St. Luke's Hospital. . . . It is, of course, evident from these facts that the affection of the brain from which he suffered was one incident merely—like the ordinary attack of delirium in fevers—to the natural course of an acute disease (acute articular rheumatism). I may add that I had frequently met your father previously, and had never noticed any signs of mental disorder.

"Very truly yours,

"(Signed)

LOUIS A. SAYRE.

"NEW YORK, April 5, 1880."

Absurdities connected with the question of priority.

So much for the Long claim, old and new. It is the oft-repeated story of "priority—the story of the host of after-claimants who first dabbled in an invention, not who first made it; and, in this instance, it has not even the advantage of being recorded priority. The common consent of the world has already decided this question as regards other great inventions and discoveries. Who, for instance, first discovered and invented vaccination? The young countrywoman of Sudbury, who said of small-pox: "I can not take that disease, for I have had cow-pox"; the Duchess of Cleveland, who said that she had no fear about her beauty, for she had had a disorder which would prevent her from ever catching the small-pox;* Benjamin Jesty, "noted for having been the first person known that introduced the cow-pox by inoculation, and who made the experiment from the cow on his wife and two sons"†—and this twenty-two years before Jenner gave the world vaccination—or Jenner? The countrywoman, the Duchess, and Jesty were familiar with the isolated fact; but Jenner had the genius and the perseverance to demonstrate that the fact held good, not only once, but always—that the practice was safe, useful, and applicable to the necessities of humankind. And he both proved this, and found followers; and the world properly honors Jenner. Jenner made vaccination what it is. Morton made anæsthetic inhalation by ether what it is. Both generalized from single instances and popularized their inventions. Consecutive anæsthesias followed Morton's efforts, just as consecutive vaccination followed Jenner's.

Again, Hull, Arnal, the Earl of Stanhope, and Franklin experimented with a view of propelling boats by steam. Fulton demonstrated (what they failed to do) that the process was practicable. And, when aërial navigation becomes a fixed fact, who shall we say invented it—a King, a Wise, or what not aëronaut; the Montgolfier brothers, who sent up the first balloon; some one else who, before their time, will be alleged to have flown a paper balloon; or, indeed, Icarus himself

* Cited from Professor Henry J. Bigelow.

† Cited from Thomas F. Wood, M. D.: "North Carolina Medical Journal," October, 1879.

with his wax-fastened wings? Or shall we give the credit to the man whose air-ships make daily trips between New York and Boston?

But does not this question of "priority" carry its absurdity upon its face?

Admit the claims made for Long to be tenable, and other prior experimenters will come forward and unseat him from his short-lived glory. And where is this retrogressive search for the paternity of painless surgery to cease? Already we have a Bowne, a Wilhite, a Smylie, and Esdaille: we will not repeat the long roll. And when their day, each in turn, is done, shall we next proceed to summon up, in chronological order, all the prominent figures in the far past who have intentionally endeavored to annul pain for surgical purposes? Such a search would lead us back to Adam himself, who was cast into a deep sleep to undergo the removal of a rib. Here, surely, priority may historically rest. And we may, then, accept Anæsthesia as a good gift from God, first exercised upon Adam, and then lying, in crude form, in the lap of time until rediscovered in Boston, in A. D. 1846. And there is nothing to prevent any individual, or any State that desires to do so, from erecting any monument they please, or from sending to Washington an oil portrait of anybody. We suggest the retrogressive plan above delineated to the expounder of Long's claims, who has already taken the three steps backward of Morton, Wells, and Long.

But dreams, unverified theories, inferences, guesses, failures, imperfect results, unrecorded and fruitless experiments do not constitute discovery. "He is not the first discoverer or inventor who first recognizes a fact, but he who, having recognized it, proves it and publishes it to the world."* The highest authorities confirm this view.

"While," says Sir James Paget,† already once quoted, "Long waited, and Wells turned back, and Jackson was thinking, and those to whom they had talked were neither acting nor thinking, Morton, the 'practical man,' went to

* C. S. Briggs, M. D., "Nashville Journal of Medicine," October, 1879. Editorial against claims made for Dr. Long.

† "Escape from Pain."—"Nineteenth Century," December, 1879.

work, and worked resolutely. He gave ether successfully in severe surgical operations, he loudly proclaimed his deeds, and 'compelled mankind to hear him.' His claim was very clear."

Dr. Morton the true "discoverer of anæsthesia"; tests which prove this; finality of his contribution.

Dr. Morton had faith in his convictions and in his results; he had the courage both to speak and to act; what he said, he proved. He demonstrated that sulphuric ether would produce complete, safe, and repeatable insensibility to pain (before unproven by ether or by any agent), that this state was applicable to surgery (before inapplicable), and this he made plain to experts and to the world.

His contribution was in itself final; his effort brought all previous knowledge upon the subject to a focus; the past (up to 1846) had brought forth only aborted results; the future added but detail and substitution. His work by reason of its extent, its sufficiency, and its completeness, then first constituted invention, by reason of its novelty and publicity was a veritable revelation.

And his labors stand the true test of invention or discovery—that of a "consecutive and continuous history," dating from the truth which he made evident. The world uses anæsthetics to-day, not because Long or Wells or Jackson used them, but because Morton used them. His work and the beginning of the knowledge and the practice of anæsthetic inhalation are, therefore, not alone coincident in time, but are also inseparably related as cause and effect. He is, then, the true inventor and revealer of anæsthetic inhalation, the true discoverer of Anæsthesia, and his the exclusive honor.

"He found," writes Professor Henry J. Bigelow, "the practice of ether inhalation an amusement of chemical lecture rooms and schools; he left it the sovereign anodyne of the human race in its moments and hours of agony. He found ether stupor as hazardously uncertain as was the narcotism produced by pouring down the opium '*a boire*' of Canappe; he left it as manageable and safe as the sleep that follows a dose of laudanum."

It is much to be regretted that Dr. Morton's request, often

privately, and twice publicly repeated in the form of a bill submitted to the United States Congress, to submit the controversy to some competent and final tribunal, was not accepted. Eloquently as these bills were urged, and much as they were desired by Dr. Morton, they were in each instance defeated by the joint efforts of after-claimants. With a Government placid in its spoliation, and after-claimants who shunned investigation, justice, reward, honor, or thanks were not to be his lot. This, hard to bear in itself, was made harder by the tireless attacks of bitter controversial opponents. Beaten at all points in argument and fact, they changed their mode of warfare to personal abuse and detraction of character. Dr. Morton did not reply in kind; in this respect he was ever almost too scrupulously considerate, for it appears that his very silence and forbearance became their vantage-ground. And so tenacious of life have such utterances * been that even at this date an obviously impartial critic,† while awarding to Dr. Morton fullest credit for the discovery, is, at the same time, led to reflect in his words the coloring derived from these early and unwarranted personal hostilities.

The acerbity of controversy did not come from Dr. Morton; what he wrote and said was courteous, dignified, and firm, and infused with a calm confidence of right. Seldom have equal persecutions and misfortunes been the fate of inventor or discoverer; seldom have they been more patiently borne and withstood, until life itself, after twenty years of strife, was quietly crushed out beneath the load. It seems strange that he, whose mind evolved repose for all human suffering, should himself give way under the pressure of injustice and mental distress. Science, civilization, had given with too free a hand, and required a compensating sacrifice, whose lot was his. Though his misfortunes were the foundations of countless fortunes to others—his sorrow inexpressible happiness to a world—his life the one single life unblessed by what was to others blessing, he never complained, but pursued his way, simply, patiently, and honestly, humbly thank-

* "A lie has no legs, and can not stand; but it has wings, and can fly far and wide."—WARBURTON.

† Sir James Paget. *Op. cit.*

ful to have been a benefactor of his race. If in aught he offended (that, unconscious of its far-reaching beneficence, as indeed was everybody else at the time he took out a patent, in which there was no secrecy it may be noted, for his new method, constitutes his offense), have not his misfortunes made atonement? And, if he had enforced this patent, could he have received any less thanks than he has?

Dr. Morton's family still hope that the United States Government may be induced to appoint a competent scientific tribunal, who shall examine the respective merits of all—both those of Dr. Morton and those of the after-claimants—and thus, in a national and official manner, award at least the honor to whom honor is due. A bill now prepared, and possibly presented to Congress, asking for an appropriation of money and its “equal distribution” among the “discoverers,” is the publicly declared object of this latest agitation of the subject. In this request they have no voluntary share; their name has been included without their consent, and in the face of their protest;* they have often been asked to join in such a combination, and as often refused. They will not be inconsistent with their past; will not sacrifice a lifetime's contest to a bargain; will not barter their birthright, though it be but an abstract point of honor, for an easement, gained at such a price; for “equal distribution” means equal merit in the discovery, and this to them would seem a preposterous admission. They ask first for arbitration, confident that justice for them, though dormant, lives; to accept, under any

* “I propose, then, that the whole medical profession—North, South, East, and West—unite in asking Congress at its next session to appropriate this sum as an ‘Anæsthesia Fund,’ to be divided equally between the families of Long, Wells, Morton, and Jackson.”—Dr. J. MARION SIMS, “*Virg. Med. Monthly*,” May, 1877. This use of Dr. Morton's name is an assumption unjustified by any usages of right or privilege, for only one year previously, in January, 1876, Dr. Sims had addressed a letter to Mrs. Morton, saying that he was organizing a plan “to introduce a bill into Congress asking an appropriation of two hundred thousand dollars, to be divided equally between yourself and Mrs. Wells, as the representatives of the two men who were instrumental in giving to the world one of its greatest blessings—Anæsthesia.” “I wish to lay my plans before you, and get your assent and coöperation.” This proposition, among others, was, as has been said, refused, grateful and necessary as such an award would have been. The grounds of refusal are stated above.

circumstances, a mutual award would be a sacrilege and a betrayal.

There is yet another monument, a simple marble shaft, erected in Mount Auburn Cemetery by citizens* of Boston. From its surface is reflected the verdict of posterity. Upon its four faces may be read this inscription: "W. T. G. MORTON. INVENTOR AND REVEALER OF ANÆSTHETIC INHALATION. BEFORE WHOM IN ALL TIME SURGERY WAS AGONY. BY WHOM PAIN IN SURGERY WAS AVERTED AND ANNULLED. SINCE WHOM SCIENCE HAS CONTROL OF PAIN."†

Summary.

I. Universal practical Anæsthesia by inhalation began in 1846. Before this date, pain in medicine and surgery was inevitable. After this date, pain was avoidable, safely, efficiently, and consecutively.

Thus voluntary escape from pain formed an epoch in the world's history, dating from 1846—an epoch marked by a striking revolution in medicine, and by inexpressible relief to the human race. This epoch owed its birth to the revelation made to the world that sulphuric ether, properly managed, would produce complete insensibility to pain. This revelation was made by Dr. W. T. G. Morton, of Boston. He issued the new facts. Immediate adoption and practice were a consequence of his announcement. The world's knowledge of the subject came from him. The very word was coined to meet his new facts.

II. After-claimants now arose, none of whom before this date (1846) had made any printed or written claim before scientific societies or the general or medical public of ever having discovered anything in regard to Anæsthesia. These claims were after-thoughts, born of ether's success in Dr. Morton's hands.

III. The first after-claimant was Dr. C. T. Jackson, of Boston. His claim was that of suggestive science. He claimed to have said, "Try ether." The knowledge conveyed in this

* A tribute of respect and gratitude from names the most honored and most respected in Boston.

† This inscription was written by the late Dr. Jacob Bigelow.

suggestion was common to text-books, and, further, superfluous to Dr. Morton, who had already been "trying ether" during many months. Dr. Jackson himself had never tried ether with a view of annulling pain, nor performed a single experiment.

Dr. Jackson then claimed that Dr. Morton had worked under his directions. This statement is totally disproven by the facts and by incontrovertible evidence. Neither Jackson's hand, nor influence, assistance, nor advice, was recognized, heard of, or suspected, by any of the participators in the early decisive test operations, or, indeed, any other operation, first or last.

IV. The second after-claimant was Dr. Wells, of Hartford. His claim was that of unrecorded priority. He referred back to 1844, to "twelve or fifteen" experimental cases of tooth-pulling. His results were variable. There was no sequence to his experiments. In the next year even (1845), there was no such thing as Anæsthesia known or practiced. Dr. Wells's method was insufficient. He himself abandoned it. No one else at the time pursued it. After ether Anæsthesia became world-wide, he made several public failures to produce Anæsthesia by nitrous oxide, particularly in 1847. The secret of nitrous-oxide Anæsthesia was not discovered until 1848, and then not by Dr. Wells, and was not practiced until 1863.

V. The third after-claimant was Dr. C. W. Long, of Georgia, a claim also of unrecorded priority; not advanced, indeed, until 1849, but revived with additions in 1877. He referred back to "five cases of minor surgery," occurring in 1842-'46. Long, on his own admissions, did not produce what to-day is termed Anæsthesia; his "effects" depended upon the voluntary self-administration of the ether by the patient to himself; his method was insufficient; his results indecisive; and he also distinctly abandoned his use of ether, as being of too "short duration" for tooth-pulling even, and incapable of maintenance by constant inhalation. His attempts, like Wells's, had no sequence. In the mere use of ether by inhalation to allay pain—to a greater extent, even, than he used it—he had already been anticipated by others, notably by William Wright, Esq., surgeon aurist to Queen Charlotte of England, 1829.

Dr. Long had absolutely no relation with the event of 1846 which constituted the Anæsthesia known to-day. The revival of his claim in 1877 as "the true discoverer of Anæsthesia" was not warranted by the facts, and was unnecessary. If, finally, he had really made the discovery in 1842, he deserves the execration, rather than the praise, of mankind for not having made it public; for he is then responsible for the sum-total of human agony endured from 1842 to 1846. It is impossible to believe that, if he had been successful in his five experiments, he would have been cruel enough to have kept his knowledge to himself, or, on the other hand, so unconscious of the value of his success as not to have published his knowledge in some medical journal.

VI. There are also numerous other after-claimants whose claims are not at present especially urged, and not therefore alluded to.

VII. Dr. Morton's contribution to Anæsthesia was in itself final; his effort brought all previous knowledge upon the subject to a focus; the past (up to 1846) had brought forth only abortive results; the future has added but detail and substitution. His work, by reason of its extent, its sufficiency, and its completeness, now first constituted invention—by reason of its novelty and publicity, was a veritable revelation. And he had faith in his convictions and in his results; he had the courage both to speak and to act; what he said, he proved and made public. He demonstrated that ether would produce complete, safe, and repeatable insensibility to pain (before unproven by ether, or by any agent); that this state was applicable to surgery (before inapplicable), and this he made plain to experts (physicians) and to the world. His labors stand the true test of invention or of discovery—that of a "consecutive and continuous history" dating from the truth which he made evident. The world uses ether and other anæsthetics to-day, not because Long or Wells or Jackson used them, but because Morton used them. Dr. Morton and the beginning of practical Anæsthesia are, therefore, not alone coincident, but inseparably related as cause and effect. He is, then, the true inventor and revealer of anæsthetic inhalation—the true "discoverer of Anæsthesia," and his the title to the exclusive honor.

