

Memorial to Dr. Crawford W. Long : an account of the unveiling of a bronze medallion in the medical building on March 30, 1912.

Contributors

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Special Bulletin

UNIVERSITY OF PENNSYLVANIA

PHILADELPHIA, PA., U. S. A.

Memorial

TO

DR. CRAWFORD W. LONG

OF THE CLASS OF 1839, MEDICAL



Founded 1740

AN ACCOUNT OF THE CEREMONIES

OF THE UNVEILING OF A

BRONZE MEDALLION IN THE MEDICAL BUILDING ON MARCH 30, 1912,
TO THE MEMORY OF CRAWFORD W. LONG, WHO FIRST USED
ETHER AS AN ANESTHETIC IN SURGERY
ON MARCH 30, 1842

PHILADELPHIA

PUBLISHED BY THE UNIVERSITY

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APRIL, 1912

IN the summer of 1910, at the British Medical Association meeting in London, Mrs. Frances Long Taylor presented original documents proving that her father, Crawford W. Long, gave ether as an anæsthetic for surgical purposes in 1842, four years before any other claimant for the discovery. While this had been known by authorities on anæsthesia, she felt that her father's memory should have wider recognition, and it has been her self-appointed and filial task to place the facts before the profession lest her father's modesty and self-effacement should result in their being neglected or forgotten.

This made his fame secure in England, and when the University of Pennsylvania decided in the same year to celebrate the seventieth anniversary of this great medical discovery made by her graduate, by unveiling a memorial bronze to his memory Mrs. Taylor felt that her life's ambition had at last been gratified and that the whole world would now recognize his undisputed claim.

The form of the memorial is a medallion, which enabled the artist to put on record the story of the first operation in plastic form and also to use as a decoration an appropriate inscription, neither of which would be possible in a bust.

The only available pictures were a crayon drawing of Dr. Long at twenty-six and a steel engraving showing a man of sixty. They have little in common so far as likeness is concerned, but as he was a graduate of only two years' standing when his first operation was performed, the crayon drawing, crude as it was, formed the basis on which the head was modelled. Work was started in the autumn of 1910 and has been continued throughout both winters, passing through many vicissitudes and changes of arrangement and composition.

The completed medallion shows the young doctor bending forward over a recumbent patient, dropping ether from a bottle held in the right hand on the towel that partly covers the patient's face and watching intently the patient's respiration. A spray of poppy leaves and pods rise from either side of the plate, bearing the words, "*Class of '39 Pennsylvania*," while the circular inscription above his head runs in two lines, "*To Crawford W. Long, First to Use Ether as an Anæsthetic in Surgery, March 30, 1842*," "*From His Alma Mater*." In the field to the left is the date of his birth and death, 1815 and 1878.

R. TAIT MCKENZIE, M.D.



BRONZE MEDALLION UNVEILED IN THE MEDICAL BUILDING ON MARCH 30, 1912, TO THE
MEMORY OF CRAWFORD W. LONG, WHO FIRST USED ETHER
AS AN ANESTHETIC IN SURGERY.

The Medallion was Designed by Professor R. Tait McKenzie.

MEMORIAL TO DR. CRAWFORD W. LONG.

The Ceremonies at the Unveiling of the Tablet.

Dr. Crawford Williamson Long, who first made use of ether as an anesthetic for surgical purposes, on March 30, 1842, was memorialized on Saturday afternoon, March 30, 1912, when a handsome gilt bronze medallion was unveiled in his honor. The exercises were held in the Medical Building of the University of Pennsylvania. Addresses were made by Dr. J. William White, of the University, and Dr.



CRAWFORD W. LONG, '39 MED.

Age 26.

This etching is made from the original loaned by his daughter, Frances Long Taylor; the picture was made shortly after Dr. Long had performed the first surgical operation on a patient anesthetized by the use of sulphuric ether, March 30, 1842.

J. Chalmers Da Costa, of Jefferson Medical College. The medallion was modeled by Dr. R. Tait McKenzie, of the University, and represents Dr. Long as a young man administering ether for the first time to a patient about to be operated upon.

Provost Edgar F. Smith presided and introduced the speakers, after a brief invocation of Deity offered by Rev. Robert Johnston, of the Church of the

Saviour, of this city. The tablet was unveiled by Mrs. Florence L. Bartow, a daughter of Dr. Long, after the address of Dr. J. William White. Dr. J. Chalmers Da Costa followed and the ceremonies closed with a brief reply by Hon. Samuel J. Tribble, who thanked the University on behalf of the family and the State of Georgia, for the honor the University had conferred upon its illustrious graduate. The presence of three distinguished Southern ladies, Mrs. Frances Long Taylor, Mrs. Alexander O. Harper and Mrs. Florence L. Bartow, the daughters of Dr. Long, added great interest and dignity to the occasion. They came from Athens, Georgia, for the express purpose of attending the ceremonies, and during their stay in Philadelphia were the guests of the University.

The addresses follow:

THE RELATION OF THE UNIVERSITY OF PENNSYLVANIA TO THE EMPLOYMENT OF ANESTHESIA IN SURGERY.

By J. William White, M.D., LL. D

We have come here to-day to do honor to the memory of a son of Pennsylvania who was the pioneer—who actually led the world—in what was, perhaps, the most momentous attack upon pain and suffering—and, indirectly, upon disease itself—ever made in the history of mankind. That specific subject I shall not undertake to deal with in detail. But, as a preface to it, I should like to call attention to the way in which the labors of others, and especially of other sons of Pennsylvania, helped first to prepare the field for the introduction of anesthesia, and later to profit by it and by the discoveries that followed and largely resulted from it. The interdependence of the sciences has long been recognized, as has the often surprising way in which what is called "pure" science has led to practical results as beneficent as they were unexpected. It seems a far cry from the experiments of our founder, Benjamin Franklin, with his celebrated kite, to the time, nearly one hundred years later, when mankind

"Mid deepening stillness watched one eager brain,
With Godlike will, decree the Death of Pain."

And yet these two occurrences, of such tremendous importance to humanity, are connected—and not remotely—by a chain of scientific events; and some of the most important links of that chain were forged by our teachers and alumni.

If we study the history of the great scientific achievements of the past we shall be struck with the fact that their true origin is almost always to be found in efforts usually distant in time and place, and often made in some other field of human endeavor.

The only addition of the nineteenth century to medical science that can be compared with anesthesia as a boon to humanity is the recognition of asepsis as a surgical principle. It is easy to show that Lister's grand conception of the relation of bacteria to the diseases of wounds can be traced directly to the attempts of a provincial French chem-

ist (Pasteur by name) to determine why a certain fungus affected the two varieties of tartaric acid differently. In fact, to that piece of chemical work and the further researches to which it gave rise, may also be traced not only the magnificent development of aseptic surgery, but likewise our present positive knowledge of the microbic character of infections and our modern treatment of those diseases by vaccines, serums and anti-toxins.

Examples might be multiplied. The X-rays, now absolutely essential to both surgeon and physician, were found by Roentgen while investigating the effect of electricity upon gases, with not the slightest idea of discovering anything of use in the diagnosis or treatment of disease. Bacteriology, itself the foundation of medicine and surgery, is largely based on the reaction of bacteria to certain aniline dyes which were originally isolated merely to establish their chemical properties and commercial uses. The compound microscope, without which medicine would be where it was in the middle ages, came from experiments by physicists on the refraction of light, with no adequate thought of the new world it has revealed to us. Some entomologists who, for purposes of classification, were studying the wings and the skin covering and appendages of mosquitos, accumulated facts, that applied by others, brought the death rate from yellow fever in Havana from 36,000 in a single epidemic (1878) to zero in the years 1902, '03 and '04. M. and Mme. Curie, in searching for radium, had no thought that it, like the X-rays, might cure superficial cancers. Metchnikoff, a biologist, when he studied the swallowing and destruction of microbes by the living cells of a small crab, did not foresee the manifold applications of the principle of phagocytosis to the cure of disease, and never dreamed of the opsonin treatment and tests of to-day. When (in 1846) Joseph Leidy, afterwards for many years our Professor of Anatomy, and until his death the greatest American naturalist, found in a slice of boiled ham, from which he had partly made his dinner, the little immature worm, the *trichina spiralis*, he did not for a moment suspect the significance of the discovery, or that it would ultimately involve hundreds of millions of money and even the peace of nations.

And so, it might be illustrated, almost indefinitely, that the piling up of facts by those born with the impulse to delve into the unknown, or by those with the instinct to bring order out of confusion, and to group, arrange and classify physical truths and living beings, has always gone on, as it is going on now, and that the great "discoveries" that constitute the milestones of medical and scientific progress, are always the result of the gradual accumulation of material usually made with no reference to its beneficent employment.

But there is something else than "facts" needed before the discovery comes. Ether may stand—as it did stand—for three hundred years on the chemists' shelves while the tortures and agonies of injury, of disease, even of physiological processes like parturition, go on unalleviated. Men there may be during those centuries with minds as keen and abilities as great as those of any who follow them, but the two—the physical substance and the minds cognizant of its existence—remain as relatively alien and unproductive as flint and steel in the absence of contact, or as the two poles of a battery without a uniting medium. That medium is difficult of precise definition. For want of a better term, it

may, for my present purpose, be spoken of as a favoring intellectual—in this case a scientific—atmosphere. This is always of slow formation. The facts are there; the men are there. But the currents of thought, the connecting medium, are absent. By the time the "atmosphere" has formed, when the world is as it were, ready for a discovery, there have been almost invariably (perhaps under unconscious telepathic influences of which we as yet know nothing), several minds turning or groping in the same direction.

One single example must suffice. The crowning intellectual achievement of the nineteenth century was the enunciation—with convincing proofs—of the doctrine of evolution by Charles Darwin. The way had been blazed for him by Goethe and Erasmus Darwin and Lamarck, but their somewhat vague ideas had been allowed to fade into forgetfulness. When, however (in 1858), after spending fourteen years in collecting evidence, he was almost ready for publication, he received from a friend, Alfred Wallace, living at the antipodes, who had no knowledge of Darwin's work, a manuscript that contained observations, reasonings and conclusions, that precisely paralleled his own. In November, 1859, he gave his immortal work on "The Origin of Species" to the world. On October 11th, of the same year, a month previous, Prof. Joseph Leidy, in his introductory lectures to the Medical Class of this University, said: "We are accumulating facts from which our successors may, perhaps, derive positive opinions in relation to the earliest history of organized beings, whether their species or various forms had a unique or plural origin, and whether or not the race of one age is the descendant of that which preceded it."

As we look back, with these ideas in mind, we find that our predecessors at Pennsylvania certainly had their share in the accumulation of the facts and in the formation of the atmosphere that jointly led to the use of ether in surgery.

In justifying this statement, I must begin (as we always begin here) with Benjamin Franklin, the greatest American of all time. That he founded the University (1740), advanced in every way the cause of general education, built and started the first American Hospital (1755), and did all the work as a statesman, a scientist, and an experimentalist with which the world is now so familiar, may not seem to have much direct relation to our subject, except that it was all undoubtedly effective in fostering every sort of intellectual advancement. His most valuable work, however, in preparing the field for the introduction of anesthesia, was in the vigorous and successful fight he waged against the bigotry, fanaticism and ignorance which then, as now, were opposed to inoculation for smallpox, the greatest scourge of that and of many preceding centuries. Although inoculation had been introduced into this country in 1721, it was still bitterly inveighed against, partly, to our shame be it said, by the reactionaries, the "stand-patters," in our own profession, and largely by the clergy, who preached against it—as they did a century and more afterward against the abolition of pain—as "subverting the decrees of Providence and resisting the punishments of God." In 1732 a Reverend Mr. Massey preached from the text of Job 2: 7: "So went Satan forth from the presence of the Lord, and smote Job with sore boils from the sole of his foot unto his crown," concluding that "the cutaneous disease of Job was produced by inoculation from the hands of

the devil, and the whole art was of infernal invention."

One hundred and more years later a clergyman wrote to Sir James Simpson, who was employing anesthesia in childbirth, and characterized it as "a decoy of Satan, apparently offering itself to bless women, but in the end destined to harden society and rob God of the deep earnest cries which arise in time of trouble, for help."

In breaking down by precept, example and widespread proclamation of his views this biased and besotted antagonism to a great public benefaction, Franklin was as surely aiding in the discovery of anesthesia and its use as if he had foreseen it.

The "most notable American medical essay of the eighteenth century," according to an unprejudiced Bostonian, was the Discourse at the Commencement of this University in 1765, given by Dr. John Morgan, which led to the immediate establishment of this Medical School, the first in America. The same historian calls Morgan the "grandfather," as Benjamin Rush was the "father" of American medicine.

No single agency contributed more to the preparation for anesthesia than Morgan's teachings as to medical education with its fundamental relation to the natural sciences, chemistry, anatomy and physiology. It was begun on that basis in this country and in this school in the same year (1765) and has been carried on through all the intervening years on the same broad principles, through the period of Dr. Long's attendance here and down to the present day. Its influence has been nation-wide—often world-wide—and as a factor in bringing about the condition of medical science to-day, it can never be ignored.

In 1768 Benjamin Rush was elected a professor in this University. He was not only, as Mumford has called him, the "Father of Medicine," in this country. He was the father of Experimental Medicine, the founder of Scientific Medicine, almost the first distinguished practitioner to evince, in the midst of the fog which then enshrouded our profession, the desire to discover the underlying principles of disease and treatment. He was the most brilliant teacher of the day, and it can be readily understood that the man who, during the great epidemic of yellow fever, in 1793, when thousands were fleeing from this stricken city, could write to a friend: "I have resolved to stick to my principles, my practice, and my patients to the last extremity," was not without influence on those who surrounded and on those who followed him. He wrote, in 1812, that he had reached the conclusion that "pain does not accompany child-bearing by an immutable decree of Heaven," and that he hoped "that a medicine would be discovered that should suspend sensibility and leave irritability or the power of motion unimpaired, and thereby destroy labor-pains altogether." It may well be that the echoes of such teaching reached and directly inspired Crawford Long, who began the study of medicine only twenty-five years after the expression of this prophetic hope. Contemporaneous with or following Rush, came Woodhouse (1792), who helped to break down the old phlogistic theory which stood in the way of all chemical advance, and who demonstrated that oxygen was given off by living plants—a fact of immense importance in the later studies of animal heat and respiration, and, therefore, in all our present views of the processes of both health and dis-

ease. We cannot claim Joseph Priestley, the discoverer of oxygen, as a "son of Pennsylvania," but as he was offered the chair of Chemistry in 1794, and declined only on account of advancing years, and as he was in frequent correspondence with the professors and alumni of that period, he may, perhaps, with propriety, be associated with the men I have described. Robert Hare (1818) added the Voltaic pile and the oxyhydrogen blowpipe to the equipment, first of the physicists and then of the manufacturers of the world. Young, in his graduation thesis, in 1803, determined the presence of a digestive acid and the ferment action of the gastric juice thirty years before the classical experiments of Beaumont upon St. Martin. John Redman Coxe (1809), though a medical man, was the first of all Americans after Franklin, to propose a plan for electrical telegraphic communication; while Philip Syng Physick (1805) was the first surgeon in the world to use absorbable animal ligatures. George B. Wood (1835) built a still-existing monument to his memory by putting forth the Dispensatory of the United States; Chapman (1816), Gibson (1819), Barton (1789) and others, made the school still more famous by their work and their teachings. In 1838, when Dr. Long came to us, the reputation of the School had so extended, that our Alumni—the pupils of the men I have named—were filling the most important chairs in the chief medical colleges of the country, two at Harvard, two in New York, two in Winchester, Virginia, two in Lexington, Kentucky, four in Baltimore, six in Charleston, and, as has always been the case, some of our very best with our younger sister, the Jefferson Medical College. There were then eighteen medical journals in America, and ten of them were originated and edited by our graduates. With almost no exception the systematic treatises then in use in Medicine, Surgery, Obstetrics, Materia Medica and Therapeutics, had been written by our professors. In 1838 there had been put forth from this School textbooks on Anatomy, 11 (the last, published that very year, having been "Practical Lessons in Anatomy," by D. Hayes Agnew); on Surgery, 11; on Medicine, 15; on Midwifery, 12; on Materia Medica and Therapeutics, 18, including the Dispensatory. In addition may be named one of the first American Medical dictionaries, one of the first compendiums, and 31 important American editions of European authors with notes and comments intended to make them more useful to American students.

It may certainly fairly be said that when Crawford Long came here at the age of 23, he found, as he could have found nowhere else in America, the scientific traditions, the intellectual stimulus to original thoughts and deeds, the "atmosphere," in other words, that was favorable, probably essential to his later achievement.

It is tempting to continue and to try to show by our records that, while Crawford Long's name, and, therefore, the name of this School, are identified with the greatest contribution to Medical Science yet made by America, there has been done here during the seventy years that have elapsed since that memorable March 30th of 1842, much work that has already notably increased the sum of useful knowledge, and much more that will doubtless prove to be the foundation of some now unforeseen and unimagined addition to Medical Science.

Gerhard, who first clearly differentiated typhus

and typhoid fevers; Pepper, with his fundamental examination of the pathology of pernicious anemia; H. C. Wood, who first led the profession of the country to the intelligent study of the physiological action of drugs; Wormley, with his classical work on the micro-chemistry of poisons; Mills, with his researches into cerebral localization; Flexner, with his fruitful investigation of the cause of bacillary dysentery; Osler, with his study of the hematozoon of malarial fever; Guiteras, with his description of filariasis; Allen Smith, with his discovery of the hookworm disease; Leo Loeb, with his experiments in tumor-transplantation,—these are but a few—not one in twenty—of the names and achievements that jostle one another for recognition, some of them belonging to the generation just reaching scientific maturity. The list would, however, be inexcusably incomplete without mention of that great contribution to general science made by Reichert and Brown, and recently published by the Carnegie Institution—a work which extends the doctrine of evolution to the physical construction of the protoplasmic molecules of animals and plants, and opens an endless field of application to the difficult problems of specific growth, cellular and sex differentiation and to the explanation of metabolism, immunity, tumor growth and the most intricate phases of physiology and pathology. The great teachers, the distinguished practitioners, the writers of textbooks that have been the guides and consultants of thousands of medical men extend in an unbroken line from Rush, Wistar, Horner, Barton, Chapman, through Stillé, Carson, Agnew, Pepper, Leidy, Penrose, Wood, Goodell, to the present day.

It is a gratification to think that we are participating in exercises destined to add beyond cavil or future question the name of Crawford Long to that list of distinguished Pennsylvanians, who have well and faithfully served their profession and their country. There it rightfully belongs, and we may feel that his never-to-be-forgotten act will be more than ever an example and a source of pride to successive generations of our students and alumni. So great a feat may never be duplicated. It is not given to many to take the first step in wiping out immeasurable agony and suffering. And yet—who knows? Lord Lister told me that in his very earliest days in Edinburgh, when he was still uncertain whether to remain there or begin his work elsewhere, he consulted Mr. Syme, who was then the leading surgeon of Great Britain. The latter told him that he would probably do well to stay there, but remarked that it really seemed as though there were not much left to do in the way of advancing surgical science, little thinking at the time that the young man he was talking to, his future son-in-law, would almost, alone and unaided, effect the greatest revolution in surgery, and bring about the greatest step in advance, which has been made since Harvey discovered the circulation of the blood.

It would be presumptuous folly to assert that we are as yet beyond the threshold of our science. With each addition to human knowledge comes the possibility of some new, perhaps some overwhelming revelation of usefulness to humanity. The keenest foresight, the most daring imagination cannot penetrate the first and nearest of the endless vistas that stretch before us. Some day anesthesia and asepsis—immeasurably the greatest advances of this age—may have only historic interest. But it is well to think that in looking back, the names of

Crawford Long and of the University of Pennsylvania will always be associated with the first of these and that, if we look forward, there is every reason to hope and believe that those names will be an inspiration to the thinkers, the investigators, and the discoverers of the future.

CRAWFORD W. LONG.

By John Chalmers Da Costa, M.D., LL.D., Gross Professor of Surgery in Jefferson Medical College.¹

Now and then a real leader, an original force, a truly great man comes into the world, and moves us as one inspired. He dares to lift the veil which hangs before the mysteries, the veil which lesser men are too ignorant to observe, too indifferent to regard, or too cowardly or incapable to displace. Such a man seeks truth and scorns wealth—courts labor and forgets ease—fights dragons and slays giants—is the slave to duty, is contemptuous of popularity, and finally wrings

“the secret of deliverance forth
Whether it lurk in hells or hide in heavens.”

He originates. Every institution, says Emerson, “was once the act of a single man.”

All such men have earned the reverent love and the eternal gratitude of humanity. Love and gratitude are the debts men owe to the memories of the heroes of progress, because of their labors, pains, perils and sacrifices. What would have become of the world without such men?

“Men
Perished in winter-winds till one smote fire
From flint-stones coldly hiding what they held,
The red spark treasured from the kindling sun.
They gorged on flesh like wolves, till one sowed
corn,
Which grew a weed, yet makes the life of man:
They mowed and babbled till some tongue struck
speech,
And patient fingers framed the lettered sound.
What good gift have my brothers, but it came
From search and strife and loving sacrifice?”

The world is often ignorant of its greatest men. Men, to us nameless, made some of the grandest discoveries and perfected some of the most remarkable inventions.

“Who found the seeds of fire and made them shoot,
Fed by his breath, in buds and flowers of flame?
Who forged in roaring flames the ponderous stone,
And shaped the moulded metal to his need?
Who gave the dragging car its rolling wheel,
And tamed the steed that whirls its circling round?
All these have left their work and not their names.”

When a man has found a radiant truth, has done

¹ In the preparation of this address I have quoted freely from many sources, especially the following: “Crawford W. Long, Discoverer of Anæsthesia,” by Rosa Pendleton Chiles (“*Munsey*,” August, 1911); “Long and his Discovery,” by Isham H. Goss (“*Journal-Record of Medicine*,” November, 1908); “Long, the Discoverer of Anæsthesia,” by Hugh H. Young (“*Johns Hopkins Historical Bulletin*,” August-September, 1897); “Crawford Williamson Long: the Pioneer of Anæsthesia,” by Dudley W. Buxton (Proceedings of the Royal Society of Medicine, January, 1912). I am greatly indebted to Mrs. Frances Long Taylor, Dr. Long’s daughter, for several interesting and important communications.

some gleaming deed, but has received no tribute of praise or glory, it is a peculiarly grateful thing to see the conscience of the world awoken, and to find men place the name of their long neglected benefactor

"On Fame's eternal beadroll."

Seventy years ago to-day, on the 30th of March, 1842, and in the little village of Jefferson, Jackson county, Georgia, anesthesia was first intentionally produced to permit of the painless performance of a surgical operation. This discovery was one of the greatest in the history of science and ranks in importance with the discovery by Harvey of the circulation of the blood—by Franklin of phenomena of electricity, by Jenner of vaccination, by Pasteur of bacteriology, and by Lister of antiseptic surgery. The giving of ether as a surgical anesthetic was not a haphazard accident, but was reasoned out from observations.

The man who first gave ether for surgical purposes was Crawford W. Long, a native and resident of the State of Georgia, and a graduate of the University of Pennsylvania in the class of 1839. There seems a peculiar adjustment to the eternal fitness of things in the fact that a son of the University founded by the great practical philosopher, Benjamin Franklin, should have made one of the greatest practical discoveries of all time.

Long's great discovery was not made in a splendidly equipped institution of world-wide fame, nor by a professor whose lecture room was packed with eager students, but by a modest, unassuming country doctor, dwelling in an isolated village. Truly! greater things for mankind have come from the hut than from the palace, from the peaceful country than from the roaring town.

We meet to-day in commemoration and celebration: in commemoration of the 70th anniversary of the discovery of ether anesthesia, and in celebration of the noble achievement of a great son of this grand old school.

We will strive to:

Part the mists which almost hide
A man of former days
And spin upon the Wheel of Truth
Some golden threads of praise.

No one disputes that Long gave ether for surgical purposes over four years before Morton did, and at least two years before Horace Wells pulled the tooth of a patient who was under the influence of Nitrous Oxide Gas. There is no claim that Morton knew anything of Long's observations. It is freely admitted by all that Warren, in the operating room of the Massachusetts General Hospital, gave to Morton the opportunity to dramatically impress the world with his views. Morton and Warren made the world hear, Long made the discovery, and would also have made the world hear had he had a great City Hospital as a forum from which to speak, and a celebrated surgeon as a spokesman and advocate. Long has been criticised for not publishing his discovery at once. Jenner waited twenty years to publish his and after twenty years had only made twenty-three observations. Suppose someone had published about vaccination after Jenner had worked nineteen years, would Jenner any the less have been the discoverer?

Long made no official claim to the discovery until 1849, when he told his story to the Medical Society of Georgia. He did so then only because his friends thought he would be doing himself injustice to keep silent. His intention had been to collect enough

cases to thoroughly test the method. This was slow work in a country district in which surgical operations were few and far between. He used ether seven or eight times in four years. In December, 1846, he read of Morton's success. Soon after Morton, Jackson and Wells became involved in a bitter controversy and Long shrunk from such things and abhorred the patenting of ether.

In the statement to the Georgia Medical Society, Long presented an affidavit of James M. Venable, then living, stating that ether had been given to him by Long on two occasions in the Spring of 1842—an affidavit of Andrew J. Thrumond stating that he saw Long do one of the operations on Venable—affidavits of E. S. Rawls and Wm. H. Thrumond declaring that they witnessed one or both operations, and other conclusive evidence. The original affidavits still exist.

Morton patented ether in 1846 under the name of "letheon." Wells opposed Morton's patent, went insane, and committed suicide in 1848. The government never enforced the patent right and army surgeons used ether freely in the Mexican war, Morton getting no return for it. In 1849 Morton applied to Congress for a grant of \$100,000 as compensation for his losses and reward for his alleged discovery. Jackson opposed Morton's claim. Jackson claimed that he had suggested ether to Morton.

The controversy was acrimonious and protracted. In 1852 the French Academy of Sciences granted a prize to Jackson as the discoverer of ether, and a like amount to Morton, as the first to apply it.

In 1854 Dr. Long was persuaded to write a letter to Senator Dawson of Georgia telling the story of the discovery in 1842. Jackson had a conference with Long and finally withdrew his own claim in Long's favor. In the "Boston Medical and Surgical Journal," April 11, 1861, will be found a letter from Jackson giving Long the credit. No money was ever granted by the government.

Jackson, like Wells, went insane, and died in 1880. Morton died in 1868, getting an apoplexy while enraged at learning of attempts to deprive him of the glory of the discovery. Long, free from such heart-burnings, pursued the calm ways of a country doctor, and made no further attempt to establish his claim. He led a useful and happy life and died in 1878. Morton, probably because men thought that the government had treated him shabbily, came to be regarded as the real discoverer, and until 1877 there was no one to say nay. In that year, Dr. J. Marion Simms published an article in the May number of the "Virginia Medical Monthly" claiming that Long had made the discovery. There is one serious mistake in the article of Dr. Simms. He stated that S. C. Wilhite, a student of Long, suggested to his preceptor the use of ether.

Wilhite was not with Long in 1842, in fact did not go to him until 1844. Wilhite corrected this error in a letter to Dr. Long, dated June 27, 1877. Professor Gross in commenting on Simms' paper (System of Surgery), says: "Although he (Long) may have been, and probably was, the first to use this drug as a means of preventing pain, he failed to interest the profession in it and has thus lost all just claim to the honor of one of the greatest discoveries ever achieved by human genius." Professor Agnew must have felt as Gross did, for in his book (Principles and Practice of Surgery), he gives Morton the credit for the discovery and does not even mention the name of Crawford Long. The claims of Long have since

found able champions in Sir James Paget, Dr. George Foy, of Dublin; Dr. Hugh H. Young, of Baltimore; Dr. Isham H. Goss, of Athens, Georgia; Dr. Luther Grandy, and Rose Pendleton Chiles. Dr. Frances R. Packard tells the story very impartially in his admirable "History of Medicine in the United States," which was published in 1901.

Frederick W. Hewitt in his work on "Anesthetics" (1901) says: "There seems to be no reasonable doubt that in 1842 Dr. Crawford W. Long, a country practitioner of Jefferson, Jackson County, Georgia, United States of America, administered ether vapor with the distinct object and fortunate result of producing insensibility to pain during a surgical operation which he performed, and that he subsequently employed the same means with equal success." Henry M. Lyman in Ashhurst's International Encyclopedia of Surgery (1889) says that Long gave ether in 1842, but as he "resided in a remote and isolated portion of the country, and as he published no statement of his experience, his discovery remained unknown."

Of late years Long's claims have been more and more regarded until justice at length prevails.

The Medical Society of Georgia has erected a monument to Long in Jefferson, where ether was first used as an anesthetic. The Legislature of Georgia has resolved to place his statue, with that of Alexander H. Stephens, in the statuary hall of the National capitol.

On December 1, 1911, Dr. Dudley W. Buxton, the distinguished English anæsthetist, presented to the Section of Anæsthetics of the Royal Society of Medicine an article which seems final and conclusive. It is written with that literary grace and painstaking accuracy which characterize all of Dr. Buxton's productions. In this article will be found a resumé of Long's life—the story of the discovery and reproductions of various convincing documents; among them are: A letter from Dr. Long to R. H. Goodman (dated February 1, 1842), ordering the ether for the first operation, and a covering letter from Goodman—affidavits of James M. Venable and others, previously referred to—Long's bill to Venable charging twenty-five cents for the ether used and two dollars for the operation—extract from Long's record book of the operation done on Venable and charge for the operation and ether used. It is dated March 30, 1842. Certificate of Mary Vincent and her husband, declaring that Long gave Mrs. Vincent ether in 1843. There are also copies of other important and interesting papers. Buxton's complete and masterly study may be read in the published Proceedings of the Royal Society of Medicine, January, 1912. It gains greater emphasis by coming to us across the sea from a gentleman free of any possible prejudice or partiality. It is the unvarnished truth, and the world now regards Long as the real discoverer. Hence I do not stand here courting controversy. I am not obliged to search dusty records in order to clear up controverted points. I do not need to delve deep in obscure mines after the nugget of Truth. Simms, Young, Buxton and others have found that nugget and the gleaming metal may be seen and can be tested by all men.

Crawford Williamson Long was born in Danielsville, Madison County, Georgia, November 1, 1815. His family was prominent socially and in public affairs.

Crawford's grandfather was Captain Samuel Long, an Irishman by birth and an adopted son of Penn-

sylvania, who resided in Carlisle. He married Miss Williamson of Ulster, Ireland; served in the army of Washington and at the Yorktown surrender, was a captain in the command of the Marquis de Lafayette. At the termination of the war with the Mother Country, he became a citizen of Georgia. His son James Long was a planter and was for years Clerk of the Supreme Court. He sat in the State Senate for two terms, and was the intimate and trusted friend of the celebrated statesman, Wm. H. Crawford, a man who was successively United States Senator, President pro tem of the Senate, Minister to France, Secretary of the Treasury, and candidate for President of the United States in 1824, against John Quincy Adams, Andrew Jackson and Henry Clay. The subject of this address was named Crawford, after the great statesman and Williamson after Captain Long's wife. Dr. Long's mother, Eliza Ware, was a Virginian, and an energetic, warm-hearted, ambitious, sympathetic woman, of refined taste and much literary ability.

As a boy Crawford was educated in the Academy of his native town. He was bright, interesting, studious and lovable. He was an entirely normal boy and loved dogs, horses, fishing, shooting, and out-door sports. He entered Franklin College (now the Department of Liberal Arts of the University of Georgia) and graduated when only nineteen years of age, taking the second honor. At college he formed a friendship, which was to last a life-time, with Alexander H. Stephens, a man destined to become Vice-President of the Southern Confederacy.

After graduation he studied for a time under a preceptor, and then took a course of medical lectures in Transylvania University. This school was in Lexington, Kentucky. Long rode on horseback from Georgia to Kentucky, crossing rugged mountains and passing through regions not yet free from treacherous Indians. In the fall of 1837, he went to Philadelphia and entered as a medical student in the University of Pennsylvania, from which institution he graduated in 1839. Agnew graduated in 1838. The two boys must have known each other and have often ridden out together from the University to Blockley Hospital. While Long was in Philadelphia he resided in a Quaker household at the corner of 19th and Market streets. When Long went up to college seventy-five years ago the United States was a small country compared with the mighty nation which now reaches into the very portals of the distant sunset. There were twenty-six states and two territories (Florida and Wisconsin). Most of the vast region beyond the Mississippi, out of which twenty imperial commonwealths have been made, was a wilderness haunted by wild Indians and infested by savage beasts. Much of it belonged to Mexico. Texas was a republic and Samuel Houston was its president. The population of the country numbered about fifteen million people and approximately one-sixth of them were slaves. Martin Van Buren was President of the United States, and Richard M. Johnson was Vice-President. The navy list still held the names of those old heroes, Rogers, Barron, Stewart and Hull. Winfield Scott was a brigadier-general in charge of the department of the East.

Roger B. Taney was Chief Justice of the Supreme Court and Joseph Story sat by his side. There was no national debt and the government was preparing to distribute a surplus of thirty-seven million dollars among the states. There were 1,600 miles of railroad in operation in the country and 120 miles in Pennsylvania.

In the United States Senate sat Franklin Pierce, Daniel Webster, Silas Wright, James Buchanan, Thomas Clayton, William C. Rives, John C. Calhoun, Wm. R. King, Robert J. Walker, John J. Crittenden, Henry Clay and Thomas H. Benton.

In the House of Representatives were John Quincy Adams, Caleb Cushing, Millard Filmore, John Sergeant, Henry A. Wise, John Bell, James K. Polk and Thomas Corwin.

To send a one-sheet letter for over 400 miles cost twenty-five cents—from Philadelphia to New York ten cents—not over thirty miles six cents.

Truly it is a far cry from the United States of the time of Van Buren to the United States of the time of Taft.

The University of Pennsylvania was first in renown among the twenty-eight medical schools of the country, and possessed the ablest faculty in the United States. The buildings were at 9th and Chestnut streets, where the Post Office now stands. On the rolls of the University were 400 medical students over one-seventh of the entire number in the land.

Philip Syng Physick, the pupil of John Hunter and the father of American surgery, died during Long's first course. At the time of his death he was Emeritus Professor of Surgery and Anatomy. He was the first to use catgut as a ligature material—devised the stomach tube and many useful instruments—and advised the treatment of ununited fracture by the seton. A specimen of a fractured humerus successfully treated by Physick is to be seen to-day in the museum. For months after his death and by his direction his grave was guarded to keep away resurrection men, as he had a great horror of being dissected.

William Gibson, the pupil of Sir Charles Bell, was the Professor of Surgery. He had served under Wellington in Belgium and was wounded at Waterloo. He was the friend and correspondent of Lord Byron. In 1819 he was called from the University of Maryland to succeed Physick in Pennsylvania. He was the first man to tie the common iliac artery (1812). He twice did a successful Cæsarean Section on the same patient, and saved the mother and both children. Nathaniel Chapman the wit, critic, booklover, social light, jovial companion, and scientist, was Professor of Practice of Physic and Clinical Medicine. He stood without a peer as a practitioner and in spite of a congenital speech defect, was one of the greatest teachers in America.

Chapman's book on therapeutics was widely celebrated.

George B. Wood, the profound scholar, the keen observer, the original thinker, taught *Materia Medica*. With Franklin Bache he edited the *United States Dispensatory*. For many years he practically determined the views of the whole profession on ethics and practice. His lectures were the pride and glory of the University and had immense influence in moulding the minds of the students. No man who has held a chair in the University brought to it greater reputation than did George B. Wood. His condemnation of the premature reporting of cases and drug actions may well have decided Long a few years later to delay in publishing a report of the actions of ether. Wood spoke of immature views and premature judgments as *ignes fatui*. He insisted that observers must never be content with a single experiment. (See Introductory lecture 1840.)

William E. Horner, he of the feeble frame, melancholy temperament, scholarly faculty and original

bent, was Professor of Anatomy. He is particularly remembered as the founder of St. Joseph's Hospital and the discoverer of the tensor tarsi, which is still called Horner's muscle. Samuel Jackson, who did so much to introduce the principles of Laennec and Louis to the American profession, was Professor of Institutes of Medicine.

Hugh L. Hodge, who had been forced to abandon a surgical career because of impaired sight, was Professor of Midwifery, having defeated Charles D. Meigs for the chair. Hodge's forceps and pessaries were known all over the world.

Robert Hare was the celebrated Professor of Chemistry. He had been a fellow-student of Silliman, and when only twenty years of age, had invented the oxyhydrogen blowpipe. He was called to the University from William and Mary College. He was one of the ablest chemists and electricians then living, was a most impressive lecturer and a highly successful experimenter.

Such were the men of the Faculty of '38 and '39, the men to whom the young Georgia student listened, the men who helped to guide and direct his mind. The session began November 1st, according to the catalogue; it ended "about the first day of March ensuing." Commencement was evidently a movable feast, for the catalogue states that it is "held generally about the first of April." No text books were recommended in the catalogue, but we know that students used the "Syllabus of Wood's Lectures," "Chapman's Therapeutics," "Gibson's Surgery," "Horner's Anatomy" and "Hare's Chemistry."

Blockley stood where it does now, and some of the buildings are very little changed externally. Agnew says that at this period, Blockley was "the great clinical school of the country." Every Saturday morning many busses gathered at Ninth and Chestnut, and crowds of students rode out to clinical lessons within those grim walls. Lectures were given by Samuel Jackson, Robley Dunglison, Joseph Pancoast and William Gerhard. J. M. DaCosta speaks of Gerhard as "the greatest observer and clinician America has produced."

In those days, William Norris, George B. Wood, John Rhea Barton and John K. Mitchell were at the Pennsylvania Hospital.

Samuel D. Gross had not yet gone to Louisville from Cincinnati, and George McClellan was serving his last year as Professor of Surgery in Jefferson. Students of those days were far more turbulent than now, and fierce combats were common between the students of the rival schools.

During Long's student days, Dickens' "Pickwick Papers," "Oliver Twist" and "Nicholas Nickleby" were published. Thackeray, whose very name was unknown, was a contributor to "Frazer's Magazine." Oliver Wendell Holmes, who later suggested the term, "anæsthesia," was trying for practice in Boston. Washington Irving was engaged in active literary work at his home, Sunnyside, in Tarrytown. Nathaniel Hawthorne was in Salem writing "Twice Told Tales." Motley was writing his first book, "Morton's Hope." The weird tales of the sombre genius, Edgar Allan Poe, were taking hold of the public imagination.

Longfellow was teaching modern languages in Harvard and writing "Hyperion." James Russell Lowell was a student at Harvard. Andrew Jackson was at the "Hermitage," in serene retirement after stressful and turbulent years.

The world, now recovered from the great conserva-

tive reaction which followed the French Revolution, was full of ferment, investigation, speculation and novel ideas.

Railroads were reaching out their tentacles on all sides, and the whistle of the locomotive had become the proclamation of civilization.

The steamboat "Great Western" had crossed the ocean from Bristol to New York in thirteen days and eight hours. Itinerant lecturers were showing to amused audiences the curious antics of persons who inhaled nitrous oxide gas, or, as it came to be called, laughing gas. Such exhibitions were called nitrous oxide frolics. Men were on the tip toe of expectation as to the supposed beneficent powers of hypnotism. It was learned with amazement that a hypnotized subject could feel no pain, and that Ward, in London, and Cloquet and Lysel, in France, had performed painless operations upon people sleeping the "magnetic sleep." Everybody felt that we were on the threshold of great events and that the first few, hesitating words of truth, had, as yet, but scarce been lisped by the baby lips of science.

Medical students must, of course, have heard of these things, discussed them with each other, asked questions of their professors and speculated as to the possibility of painless surgery. Every visit to the surgical clinic must have impressed on their minds the tortures inflicted by operations, and what a beneficent change it would be could a victim sleep under the knife. Neither Gibson, Wood or Chapman had a word to say in favor of "animal magnetism," or Braidism, as it came to be called. Gibson's book says nothing at all about preventing pain in surgical operations. He certainly followed the usual custom—drugged the patient heavily with opium, and had him forcibly held or firmly strapped during the dread tragedy of the operation.

Nitrous oxide was a well-known drug and was lectured on by teachers of chemistry and therapeutics. Sir Humphrey Davy, in the year 1799, found out that, if inhaled, nitrous oxide would subdue pain, and suggested its use in surgical operations. In 1800 he published his experience and suggestion. Davy's recommendation was never acted on until Horace Wells used the gas as an anesthetic in 1844. Hare taught that when nitrous oxide is inhaled, it produces "a transient, peculiar, various and generally vivacious ebriety."

Pareira, in his *materia medica* (1839), states that he had given nitrous oxide to about 100 persons, that it produces temporary and usually pleasing delirium, which subsides in three or four minutes—that the delirium takes different forms, causing some to dance and some to fight. In some few cases stupor is produced. He recommended it for spasmodic asthma.

Ether had been known for several centuries. Hare, in his chemistry, speaks of the internal administration of ether, but says nothing of the effects of inhalations. Wood does speak of ether inhalations. I find a reference to it in the Syllabus of his lectures. He says it may be inhaled, tells what inhalations are advised for, and explains how they are given. It was used in very small doses for spasmodic conditions. Dr. Wood states in his *Therapeutics*, written at a much later date than this, that "Ether has been long used by this method (inhalation). The late Dr. P. S. Physick was much in the habit of employing it in pulmonary affections, and invented

a small, extemporaneous inhaler for the purpose." Dr. Physick died in 1838.²

Pareira discusses the stomach administration of ether, and says that large doses cause intoxication, and excessive doses, stupefaction. He also speaks of ether drinkers, and refers to a chemist suffering from cancer of the colon, who drank a pint of ether a day to relieve his pain. Pareira speaks of inhalations as follows: "When the vapour of ether, sufficiently diluted with atmospheric air, is inhaled, it causes irritation of the epiglottis, a sensation of fullness in the head and a succession of effects analogous to those caused by the protoxide of nitrogen. —. If the air be too strongly impregnated with ether, stupefaction ensues. In one case this state continued, with occasional periods of intermission, for more than thirty hours: for many days the pulse was so much lowered that considerable fears were entertained for the safety of the patient. In another case, an apoplectic condition, which continued for nine hours, was produced." The case of lethargy for thirty hours, spoken of by Pareira, was originally referred to in an article published, in 1818, in the "English Quarterly Journal of Science and Arts," and supposed to have been written by Faraday.³ Pareira was evidently fearful of the effects of ether by inhalation.⁴ He used it by dropping some of the drug on a lump of sugar and holding the sugar in the mouth, or by dropping ether in hot water and inhaling the vapour mixed with steam. It was recommended for chronic catarrh and dyspnoea, whooping cough, spasmodic asthma, and to relieve the effects produced by the accidental inhalation of chlorine.

* * *

We may conclude that when Long left this school he understood the agony caused by surgery and realized what a great thing it would be to be able to operate without causing pain, that he had no belief in the value of "animal magnetism," as a surgical anesthetic—that he knew that nitrous oxide, when inhaled, would produce delirium—that he knew that ether inhalations were given therapeutically and sometimes taken for sport, and that large doses would produce unconsciousness. He had been taught, and probably at that time believed, that only small doses were admissible and that doses large enough to produce unconsciousness would bring deadly peril to the patient. He likewise took with him the council of Wood regarding the necessity of being ever cautious in reputed results.

After graduation he went to New York City and "walked the hospitals." In that city he had the opportunity to hear Valentine Mott, J. Kearny Rogers and Willard Parker. He wished to enter the

² Over forty years before Long came up to college Beddols used inhalations of small quantities of ether to relieve pain. Soon after Beddols' practice began, Pierson used ether inhalations for consumption, and so did Warren, of Boston. Several years before 1837, Dr. J. D. Mitchell, of Philadelphia wrote (quoted from "Anæsthetics: Ancient and Modern," by George Foy): "Some years ago a practice obtained among the lads of Philadelphia of inhaling the vapor of sulphuric ether by way of sport. . . . In some instances the experiment excited mere playfulness and sprightly movement, but in several cases delirium and even phrenitis was induced, which ended fatally."

³ Foy states that Faraday "acknowledged the authorship of the article" ("Anæsthetics: Ancient and Modern").

⁴ Foy quotes the "Edinburgh Medical and Surgical Journal" as saying that, beyond question, "the inhalation of air much loaded 'with ether' will prove highly dangerous" ("Anæsthetics: Ancient and Modern").

medical corps of the U. S. Navy but his father vetoed the plan, so he returned to Georgia in 1841, and began general practice in Jefferson, a village in Jackson County.

The year 1841 was the very year that Esdaile, in India, performed so many operations upon hypnotized subjects, that Braid, of Manchester, began to set forth his views on induced trance, and that Elliotson began to warmly advocate hypnotism as a surgical anesthetic.

Here is the story of Long's discovery, and in his own words:—"In the month of December, 1841, or in January, 1842, the subject of inhalation of nitrous oxide gas was introduced in a company of young men in this village; several persons present desired me to produce some for their use. I informed them that I had no apparatus for preparing or preserving the gas, but that I had a medicine (sulphuric ether) which would produce equally exhilarating effects: that I had inhaled it myself, and considered it as safe as the nitrous oxide gas. One of the company stated that he had inhaled ether while at school, and was then willing to inhale it. The company were all anxious to witness its effects. The ether was introduced. I gave it first to the gentleman who had previously inhaled it, then inhaled it myself, and afterwards gave it to all persons present. They were so much pleased with the exhilarating effects of ether, that they afterwards inhaled it frequently and induced others to do so, and its inhalation now became fashionable in this country, and, in fact, extended from this place through several counties in this part of Georgia."

We may note that R. H. Goodman, one of the persons who participated in an ether frolic in Jefferson, made an affidavit in 1853, stating this fact and also that he removed to Athens, January 20, 1842, and introduced ether frolics in that community. It is interesting to observe that Long had inhaled ether before the first ether frolic, and that, repudiating the teaching he had received as a student, he regarded it as being as safe as nitrous oxide. To continue Dr. Long's narrative: "On numerous occasions I have inhaled ether for its exhilarating properties, and would frequently, at some short time subsequent to its inhalation, discover bruises or painful spots on my person, which I had received while under the influence of ether. I noticed my friends, while etherized, received falls and bangs, which I believed were sufficient to produce pain on a person not in a state of anesthesia, and on questioning them, they uniformly assured me that they did not feel the least pain from these accidents. These facts are mentioned that the reasons may be apparent why I was induced to make an experiment in etherization."

"The first patient to whom I administered ether in a surgical operation was Mr. James M. Venable, who then resided within two miles of Jefferson, and at present (1849) lives in Cobb County, Georgia. Mr. Venable consulted me on several occasions in regard to the propriety of removing two small tumors situated on the back of his neck, but would postpone, from time to time, having the operations performed, from dread of pain. At length I mentioned to him the fact of my receiving bruises while under the influence of the vapour of ether, without suffering, and as I knew him to be fond of and ac-

customed to inhale ether, I suggested to him the probability that the operations might be performed without pain, and proposed operating on him while under its influence. He consented to have one tumor removed, and the operation was performed the same evening. The ether was given to Mr. Venable on a towel, and when fully under its influence, I extirpated the tumor. It was encysted and about one-half inch in diameter. The patient continued to inhale ether during the time of operation, and when informed it was over, seemed incredulous, until the tumor was shown him. He gave no evidence of suffering during the operation, and assured me after it was over that he did not experience the slightest degree of pain from its performance. This operation was performed on March 30, 1842."

When Long finished that operation he must have felt a sense of combined wonder, exultation and responsibility. It was a brave thing to operate under the full influence of a drug when all professional teaching was that it required large amounts of the vapour to produce unconsciousness, and that large amounts were dangerous. Had the patient died, the doctor would have had a lifelong self-reproach and would possibly have been sued or prosecuted for manslaughter.⁶ It was brave of Venable to take the chance. Wonder would naturally arise in Long's mind as he thought of the agonies inflicted by the surgery he had seen in Philadelphia and New York, as compared with the perfect tranquillity of the patient just operated upon. Exultation would be inseparable from the accomplishment of what the masters of surgery regarded as impossible. A sense of grave responsibility would be in a man who believed he had done a mighty thing, but felt the necessity of proving it thoroughly in order that he might not mislead others and do harm.

He saw the beneficent light break into the dark dungeons of pain. He must have felt as did Sinbad, the Sailor, when, from the living tomb in which he was immured, he saw the glad rays of the sun. He and his companions might well have exclaimed with the ancient Mariner:

"We were the first that ever burst, into that silent sea."

That is the story of the first use of ether inhalation to still the pains of surgery.

* * *

What of the personality, the character, of the man who discovered anesthesia? In August, 1842, he married Mary C. Swain. It was a peculiarly happy union. His wife was an intellectual woman and a thoroughly congenial helpmate. She was the inspiration of his life. She fitted herself to understand and sympathize with all his wants and needs. They were real lovers when they married and remained lovers until death parted them. He remained a resident of Jefferson until 1851, when he removed to Athens, Georgia. He lived in Athens until his death, in 1878, and practiced there continuously except during his service in the Confederate Army.

For nearly thirty years he was in very active practice, was in the habit of riding miles through the country, and endured all the hardships of a busy

⁶ Quoted from Buxton's article on Long in the Proceedings of the Royal Society of Medicine, January, 1912.

⁶ Many of Long's friends begged him not to administer ether again, telling him that if anything happened to a person under ether the doctor responsible would be mobbed. But Long did give it again.

country practitioner. No man was ever loved more. All his patients were his devoted admirers. His personality impressed itself upon them. He was counselor and friend as well as physician. He always placed the welfare of his fellows before his own. He was more than a great man, he was a good man. He was one of those rare individuals who really practice their religion. The words of his faith were not mere empty formulas, as with so many, but were mandates to fine deeds. He carried with him through life no ignoble rancor. Disappointment there must have been but there was never hatred of his fellows. He had been excluded from honors that were justly his but he never kept the thought of it as "something bitter to chew on when feeling Byronic." He in no sense became that desolating human calamity, an embodied grievance. A grievance wearies out sympathies and tires out our appreciation. There was nothing morbid in his temperament. He never scoffed at Destiny or denounced Fate. He never claimed to be an unappreciated spirit or a misunderstood soul. He calmly went his useful way, tending the sick, aiding the needy, caring for his own, sure of himself, confident of the future, never boasting, never brooding, kindly and fair to all, generous ever to opponents, courteous even to critics, and making no struggle for stained wreaths or for tarnished rewards. He was a complete man, a rounded character, a true physician, and when we honor him we find no apologies necessary. He never tried to patent and thus coin into dollars a discovery which has brought and will bring comfort unspeakable to countless thousands of the race. He thoroughly loved his profession. He said: "I am as much called to practice medicine as a minister is to preach the gospel!"

He accepted all medical tasks as commands which he was glad to be thought worthy to receive and fit to execute.

He had that splendid combination, strength and tenderness. He inspired trust. Surely he must have done so, else Venable would never have taken ether to unconsciousness. He was wise and self-confident, else he would never have given Venable ether to unconsciousness when all the leaders of medicine taught that such doses were highly dangerous.

He was full of sympathy for suffering and cared for the lowliest as for the richest. He was gentle, forbearing, faithful to every duty and every instinct. He was always dignified and usually reserved, relaxing at times into gaiety in his family circle among those who knew him well. He had a vein of humor, was given to jests when by his own fireside, and now and then sent humorous sketches to the local newspapers. He was simple of heart, and pure in word and act.

He was a close observer; a hard worker; was honest in thought, word and deed—hated all lies and anything that even savored of deception. His life was lived in the light of day without any stratagems or pretenses. He was straightforward and unsuspicious, hated to hold ill opinions of anyone, and only a native ability to judge character saved him from frequent impositions. His family adored him. He liked to read aloud to his children and brought them up on the works of Scott, Dickens, Shakespeare and other master minds. He was particularly fond of Hamlet. At bed time he followed the old time custom of reading the Bible to the as-

sembled family. He was fond of whist and was one of the best of players. He was devoted to farming, was a good business man and an excellent executive.

In slavery days he was, as were most Southern gentlemen, a kind master to his slaves. He believed that slavery was a plan of Providence to civilize the negroes. He thought that to own slaves was a great and terrible personal responsibility, a responsibility which he ranked close after the one owed to his wife and children. In an old journal he writes: "God grant that I may be a tenderer husband and father and a better master." When his slaves had become free he still watched over their welfare, cared for them when sick, relieved their necessities and gave them useful council. The blacks loved and trusted him as much as did the whites.

He had a great reverence for womanhood. He would carry a basket for the lowliest woman with the courtly air others might show to a princess. A veritable termagant used to haul wood into town to sell. Again and again when he met her he bought the load and took it to his own house. On one occasion Mrs. Long said to him: "We have plenty of wood, why do you always buy that woman's," and he said, "because I hate people to see a woman doing man's work." He would go any distance and attend the poorest negress in labor because of his sympathy for those in the pains of childbirth and his reverence for maternity.

At the unveiling of the monument in Jefferson, Dr. Woods Hutchinson said that Long was in many respects in advance of his day—that he treated and cured consumption by food, fresh air and tonics—that he treated typhoid fever practically as we do now—that he treated that very dangerous disease bilious fever by quinine when few did so—and that he operated many times very successfully for cancer of the breast, always clearing the ribs and removing the axillary glands. (Munsey, August, 1911.)

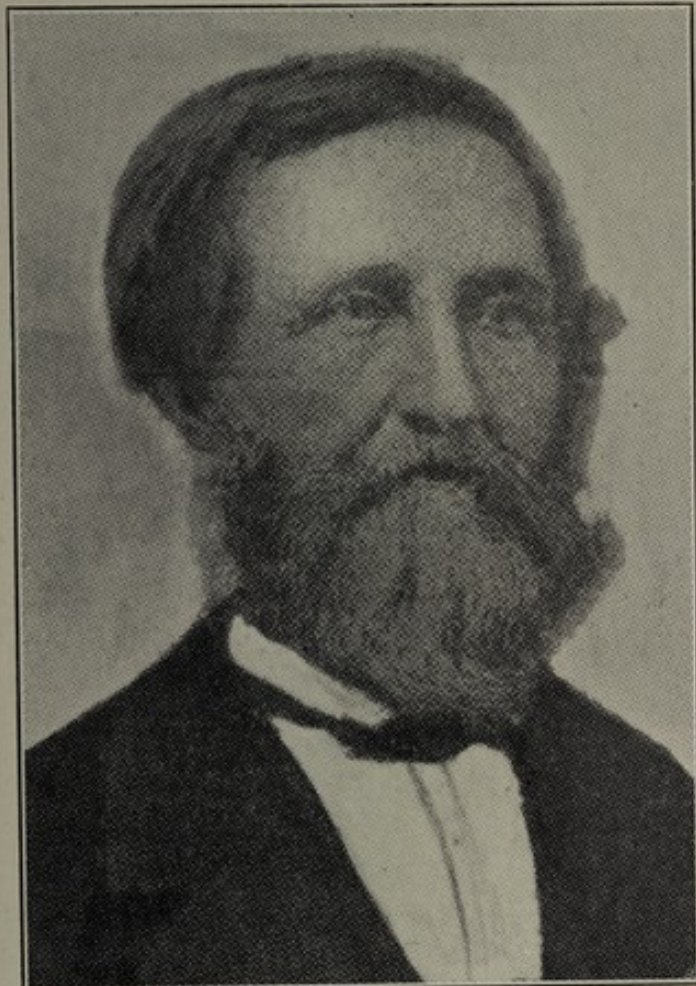
It is interesting to note that he never charged more than one hundred dollars for a "breast operation," even if the patient was very well off.

He was a Whig in politics and strongly opposed to secession. When Georgia resolved to go out of the Union Long said: "This is the saddest day of my life." Naturally he stood with his own people and went with his state. He entered the Confederate army and served through the war. Like all his friends he lost everything by the war, and he suffered along with them the horrors of reconstruction and the infamous tyrannies of carpet-bag rule. Soon after the war Long was offered the position of United States Contract Surgeon to help care for the many sick and wounded soldiers in Georgia. He was not even asked to take the oath of allegiance. The fifty dollars a month, paid him for his work, came as a blessing in those dark days of poverty. After some years he again became prosperous.

Once, when his health was impaired by over-work, his friends and family urged him to take a holiday, but he said, "my sick need me."

In his 63rd year he was struck by apoplexy when at a sick woman's bedside. The moment he recovered consciousness he asked how she was. Before he passed into the unconsciousness which was to end in the long sleep and the silent house, he gave directions for the sick woman's care. He was faithful to duty to the last. He died June 16, 1878.

Such was Crawford W. Long. The University of Pennsylvania this day hangs his likeness in the Hall of Fame with her noblest sons. He was an honor to his alma mater, an ornament to his profession, a glory to his country, and a benefactor of the human race.



CRAWFORD W. LONG, M.D.
Of the Class of 1839 Medical.

REPLY BY HON. SAMUEL J. TRIBBLE.

At the conclusion of the ceremonies, Hon. Samuel J. Tribble, United States Congressman from Georgia, spoke as follows:

In behalf of the family of Dr. Long and the State of Georgia, I thank you, Mr. Provost, for the honor conferred by the University of Pennsylvania on the distinguished son of my State. This tribute to a great man with no military or political renown is a high testimonial of the progressive thought of this University. History loves to honor the hero.

The boy, the man, yea the woman, all are hero worshipers. Alexander the Great led his armies into all known countries and humanity will never tire of reading of his achievements as the Conqueror of the World. Napoleon scaled the Alps and laid waste the plains of Italy, and we read, with charm, volume after volume in history and in fiction of the greatest military genius the world has ever known. These and other military heroes left devastated fields, desolation and want, widows and orphans, pain, sorrow and death written on the pages of history. To-day you erect a Long Medallion and commemorate the memory of a man who carried no military trophies to his grave, made no widows and devastated no fields, but, sir, he alleviated the pains of humanity throughout the earth. The Great Teacher—our Master—taught that the greatness of men should be measured by the good they do. Applying this mould to Dr. Long, he becomes one of the greatest men of modern or ancient times.

In his native village in Georgia there has been erected a marble shaft to his memory; to the foot of that shaft our children, for generations, will go and point to the name of this great Georgia Humanitarian; to the University of Pennsylvania your children's children will come and point to the name on this tablet erected by you, as one of the greatest men of the Nation; to the Capitol of the Country at Washington, where his statue will be placed in the Hall of Fame, citizens of foreign countries will come and point to his name on the statue in that Hall as one of the greatest men the world ever knew. Georgia, his home, and Pennsylvania, his Alma Mater State, strike hands to-day to do him honor, and when his statue is erected at the National Capitol, the whole Nation will join us in the memorial, and his greatness will be glory enough for all.

Dr. Long comes from a section of statesmen. In the radius of a few miles, if time permitted, I could point you to Wm. H. Crawford, who ranked with Calhoun, Clay and Webster, and needed only one more vote to give Georgia a President; I could point you Alexander H. Stevens, the greatest statesman the South ever produced; I could point you Robert Toombs, one of the greatest minds and orators of the Union; I could point you to the Cobbs, statesmen of the Webster and Clay type; I could point you to Benj. H. Hill, who stood, in the breach of reconstruction days, on the floor of Congress, eyes flaming with defiance, and yet rising above his sectional animosity, and uttering such speeches as "we felt your heavy arms in the carnage of battle, and above the roar of the cannon we heard your voice calling, brothers, come back"; I could point you to Henry W. Grady, bearing an olive branch, and with his matchless eloquence, wiping out sectional animosity in every section of the country. These, and many others: but Mr. Provost, last but not least of this array of greatness, I point you to Crawford W. Long, not a statesman, not a war hero, but the alleviator of human pain the world over.

