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PROFESSOR SAMUEL D. GROSS: AMERICA'S
FOREMOST SURGEON.

By C. W. G. ROHRER, M. A., M. D., Ph. D., Baltimore, Md.

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PROFESSOR SAMUEL D. GROSS: AMERICA'S
FOREMOST SURGEON.¹

By C. W. G. ROHRER, M. A., M. D., Ph. D., Baltimore, Md.

It was the late Bishop Phillips Brooks who said: "If I [183] ever wrote a book I would want it to be a biography, portraying a great man's life." To-night I shall make a feeble attempt to outline a life-history of the manner of man indicated by Bishop Brooks.

BIRTH AND PARENTAGE.

Samuel David Gross, the subject of my sketch, was born near Easton, Northampton County, Pennsylvania, on the 8th of July, 1805. The original Gross homestead, about four miles from the city of Easton on the Northampton Pike, was a fine farm embracing two hundred acres of the best land, in a high state of cultivation. Upon it was a large orchard famed for the abundance and excellent quality of its fruit. Besides the other necessary farm buildings, this tract of land was improved by a two and one-half story stone house, a portion of which is still standing. It has long since passed into the hands of strangers, and is now known as "Chesterfield Farm." The old stone house has been remodeled and rebuilt, and is occupied by the gardener. Within its quaint walls Dr. Gross first saw the light of day; from its rude door-

¹ Paper read at the meeting of the Johns Hopkins Hospital Historical Club, January 15, 1912.

In the preparation of this paper I have received valuable assistance from the following persons: Dr. Gross's only surviving son—Mr. A. Haller Gross of Langhorne, Pennsylvania; Dr. W. W. Keen, Dr. J. W. Holland, and Mr. Nelson Alexander Chestnutt of Philadelphia; Dr. Edgar M. Green, Miss Swift, and Mr. Reuben Kolb of Easton, Pennsylvania; and last, but by no means least, my photographer, Mr. Harry B. Weaver of this city.

[83] way he went forth an humble country lad, to eventually become America's foremost surgeon.

Philip Gross, his father, was a man of sterling worth. He was one of the most highly respected citizens in Eastern Pennsylvania. He was tall, handsome, and of dignified bearing. His son, the Doctor, inherited his father's physical beauty and manly traits. The father died of apoplexy in November, 1813, at the age of fifty-six, when his son was in his ninth year.

Juliana Gross, his mother, was, before her marriage, a Brown; she died of asthma in March, 1853, at the advanced age of eighty-six years. She is described as a woman of lovable character, and an excellent wife and mother. Her son attributes much of his professional success to the training which he received at his mother's knee, and to the influence of her exemplary life. Both parents were of German descent, and natives of Pennsylvania.

Dr. Gross had two sisters and three brothers. One of his brothers, the Rev. Joseph B. Gross, was for many years a well-known clergyman of the Lutheran Church, to which religious sect the Gross family for generations had belonged.

BOYHOOD AND YOUTH.

His boyhood and youth were pleasantly spent on the farm. Living much of the time out of doors, he early acquired a fondness for natural history. In the eloquent words of a gifted poetess, Gross at a tender age found

Tongues in trees, books in running brooks,
Sermons in stones, and good in everything.

The usual sports and amusements incident to country life were also enthusiastically engaged in by him. Target shooting with a "bow-gun," ball playing, pitching quoits, rabbit-snarling, snow-balling, pitching pennies, and hunting bird's nests were favorite forms of amusement, each in due season. He believed that the skill which he acquired in pitching quoits contributed much to his manual dexterity and surgical acumen. As a boy he was excessively fond of fishing. Another favorite amusement with all country boys is fighting bumblebees, wasps, hornets, and yellow-jackets. In this type of sport,

though sometimes resulting in all the cardinal symptoms of [83] inflammation, he soon became an acknowledged leader.

His favorite books were the Bible, Aesop's Fables, and Witches of the Hartz Mountains. Like his illustrious fellow-countryman, Benjamin Franklin, he also read various almanacs, volumes of history, geography, and romance.

Before the age of six years he made known to his parents that he wanted to be a physician. This early impulse permeated the very fibre of his being. It came to him like an inspiration, and dominated the entire period of his childhood and youth; nor did it cease its prompting until it had in a measure been fulfilled.

EARLY EDUCATION.

Dr. Gross obtained the first rudiments of his education at a log-cabin school house located nearly a mile from his home. Here the three R's—Reading, 'Riting, and 'Rithmetic—were taught, as well as the simplest rules of spelling. He soon became an apt pupil, and showed signs of good scholarship. Notwithstanding these hopeful indications, his early advantages were but meagre. As a result, his preliminary education was noticeably defective.

However, there still burned within his boyish heart the desire to be a physician. He had now attained to an age where he could see the defect in his common school education. He was industrious, he was ambitious, and he was imbued with a goodly amount of characteristic German thoroughness. At this juncture he set resolutely to work and took up the study of three languages—Latin, German, and English. He also made commendable progress in reading, composition, and arithmetic.

At the age of seventeen he considered himself fitted to begin the study of medicine. In those days it was customary to "read medicine" in the office of a physician, a practice now almost obsolete. Accordingly he entered the office of a country physician. Receiving but little aid, he withdrew from this practitioner's office and tried another. The result was the same, and he again sought a new preceptor. His third attempt proved subsequently to be equally disastrous. This time

1841 he had applied to Dr. Joseph K. Swift of Easton, a graduate of the University of Pennsylvania. Dr. Swift is characterized as "an eminent physician and surgeon and a highly cultivated gentleman."

For a brief season the current of the would-be medical student's life ran smooth. No angel "troubled the pool." But it was merely the calm which precedes the storm. To use Dr. Gross's own words:

With the aid of Fyfe's Anatomy and a skeleton, I learned some osteology; but even this was up-hill business, and I at length gave up in despair. I found that my Latin was inadequate, and that I could not understand the technicalities of medicine without some knowledge of Greek. *This was the turning-point in my life.* I had made a great discovery—a knowledge of my ignorance; and with it came a solemn determination to remedy it.

He did not stand alone in his great discovery. His preceptor, Dr. Swift, was not slow in establishing priority by the reply which he made. According to information which I have received from his grandniece, Miss Swift,² when Gross, at that time a country boy, communicated his views to his preceptor, the result far exceeded his most sanguine expectations. Dr. Swift paid him anything but a flattering compliment by telling him "to get an education first, and then study medicine."

He met the situation bravely; relinquishing his medical studies for the time being, he entered college. Wilkes-Barre Academy was the school selected, and here he remained for one year. He next attended a classical school in the city of New York. Becoming dissatisfied, he returned at the end of six months to Easton, where, under the tutelage of his former teacher, Mr. Joel Jones,³ he took up the study of Latin and Greek. By the end of another half year he longed to return to college to complete his classical studies, and so he went to the Lawrenceville High School, in the State of New Jersey, where he rounded out his preparatory education in a satisfactory manner.

² It is interesting to note that his sign (or "shingle," as we sometimes call it), weather-beaten and old, still adorns the door-panel of Miss Swift's comfortable home in Easton.

³ Subsequently elected to the judgeship.

At the age of nineteen years he began in earnest the study of medicine. In his Autobiography, written shortly before his death, Dr. Gross comments upon the difficulty of choosing a profession. He says: "The choice of a profession is one of the greatest perplexities of a young man's life." Not so, however, in his case, for he was determined from his earliest boyhood to study medicine. From its very incipency he was wide awake to the seriousness of the proposition. He either may have grasped the situation intuitively, and realized that his was the most laborious and most exacting of the three learned professions—divinity, law, and medicine—or, perhaps, he called to mind the saying of Cicero, that, "In no way do men approach nearer the gods than in trying to give health to their fellowmen."

He began again the study of medicine under Dr. Swift at the age of nineteen. He applied himself diligently for nearly a year, at the expiration of which time his health broke down. Accompanied by one of his brothers, he rode to Niagara on horseback to recuperate. At the end of six weeks he was as well as ever, and returned to his studies. In October, 1826, he proceeded to Philadelphia, and immediately enrolled himself as a private pupil of Dr. George McClellan,⁴ professor of surgery in Jefferson Medical College, and several weeks later he matriculated at Jefferson Medical College.

Gross was an indefatigable and painstaking student; whatsoever his hand found to do, he did with his might. The medical student of to-day could not do better than copy his example. Concerning his ne'er-to-be-forgotten medical student days he thus writes in his Autobiography:

I worked early and late, and lost no occasion to profit by the opportunities that were afforded me. I was determined to qualify myself well, especially in the practical branches. I was very fond of anatomy and surgery, and therefore made them objects of par-

⁴ Dr. McClellan's life story is soon told: he was great as a medical teacher, great as a surgeon, the founder of Jefferson Medical College, Philadelphia, the preceptor of Dr. Gross, the father of the late General George B. McClellan, and grandfather of ex-mayor McClellan of Greater New York.

[84] ticular inquiry. During the eighteen months of my connection with McClellan I had witnessed many important operations, and had seen a good deal of medical practice. My mind, too, was well disciplined; I had not only industry, but ambition; my morals and habits were good, and I was a stranger to all amusements. Medicine was the goddess of my idolatry.

He was graduated from Jefferson Medical College, in the year 1828. He had attended three sessions of the college, and was one of a class of twenty-seven to receive the honors of the doctorate. His graduation thesis was on the Nature and Treatment of Cataract. The commencement address to the graduates was delivered by his preceptor, Dr. McClellan.

PROFESSIONAL CAREER.

After a short visit to his mother at Easton, Gross returned to Philadelphia, which city he determined to make his future home. He opened an office at the corner of Library and Fifth streets, immediately opposite Independence Square, and announced himself as a candidate for business. As is usually the case with a young physician, especially in a large city, practice came slowly, but he was not idle. He improved his leisure moments by translating four foreign works on medicine and surgery, to which I shall again refer.

After a vain struggle of eighteen months in the "City of Brotherly Love," he found himself in financial straits. His patrimony was exhausted, and the income from his practice scarcely exceeded three hundred dollars. There was but one alternative—to return to Easton, where living expenses were lower and a young physician's opportunities greater. Accordingly, in April, 1830, he returned to Easton to take up the burden of life again amid the scenes of his nativity. Here he gradually acquired practice, and in a year or so he was regarded as a scientific physician. His office was on Centre Square, opposite that of his old preceptor, Dr. Swift.

[85] His interest in practical anatomy never abated one jot. In the rear of his Easton home there was a garden; at its foot he had a small stone building erected, which he used for a dissecting room. A human subject was occasionally procured from Philadelphia, which he himself transported to Easton

in a buggy. Numerous unsuspecting cats and dogs also fell [85] a prey to his thirst for anatomical investigation.

The following incident which occurred while he resided in Easton is authentic. It was communicated to me by Dr. Edgar M. Green, a son of the late Dr. Traill Green, and one of the most prominent physicians in Easton. It was also related by Dr. Traill Green himself at the complimentary dinner given to Dr. Gross on April 10, 1879. At the time—it was in the year 1833—Dr. Gross was conducting experiments on dogs and rabbits, to illustrate the subject of manual strangulation. Many a dog was hanged as a martyr to science. A soldier, a drunken, worthless fellow about Easton, had committed suicide by hanging. Some trouble was experienced in getting him decently buried, but finally he was interred in the cemetery at Easton. In the evening of the same day Traill Green, then a student of medicine at the University of Pennsylvania, was out visiting, when Gross called him to the door and said: "Green, I want that fellow." That night at the hour consecrated to evil spirits, ghosts, ghouls, and hobgoblins, Gross, Traill Green, and another student marched to the cemetery. They took with them a wheelbarrow and a spade. The night was still and very dark. As is usually the case with paupers and unclaimed dead, the man had been buried in a remote corner of the potter's field, where the soil was rough and undulating. They immediately set to work to unearth the coffin. They had not proceeded very far, however, before they were forced to desist. The spade made so much noise in the gravel that they were afraid some one would hear them. Gross said: "Green, we had better quit or we'll get caught." So they gave it up, refilled the grave and left. Several days later a brother of the deceased soldier met Traill Green in the street and said: "Doctor, I believe you got my brother's body." Green replied with the evasive answer, "You can believe what you please." Thus the incident was closed.

Gross longed to qualify himself as a teacher of anatomy. In the spring of 1833 he made known his wishes to Dr. John Eberle, one of his old college preceptors, then a professor in the Medical College of Ohio, at Cincinnati. The result was

[85] that he was soon appointed Demonstrator of Anatomy in that institution—the Medical College of Ohio. Accordingly in October, 1833, after a residence of three and one-half years in Easton, he removed to Cincinnati, the "Queen City of the West," to assume his anatomical duties there. He held the position for only two sessions, 1833 to 1835. In 1835 the Medical Department of the Cincinnati College was organized, with a chair of Pathological Anatomy, and to this chair he was unanimously appointed by the trustees. Here he delivered the first systematic course of lectures on morbid anatomy ever given in the United States.

In 1839 Gross was appointed Professor of Medicine in the University of Virginia. A short time previously he had been offered the chair of anatomy in the University of Louisiana. Both of these offers were promptly declined, but in the spring of 1840 he accepted the professorship of surgery in the Louisville Medical Institute, afterwards the University of Louisville. In the following October (1840) he removed from Cincinnati to Kentucky, to inaugurate his work as Professor of Surgery in the University of Louisville.⁵

Gross remained at Louisville for sixteen years, from October, 1840, to September, 1856, with the exception of the winter of 1850-1851, which he spent in New York, as the successor of Dr. Valentine Mott in the chair of Surgery in the University of that city. Shortly after the close of the session, Gross left New York and returned to Louisville.

In 1855 Gross was solicited to allow his name to be proposed as a candidate for the chair of Surgery in the University

⁵ The following letter from Dr. E. O. Smith, secretary of the faculty of the Ohio-Miami Medical College of the University of Cincinnati, adds some light to this early history:

CINCINNATI, Ohio, January 5, 1912.

Dr. C. W. G. Rohrer, 114 W. Franklin St., Baltimore, Md.

DEAR DOCTOR: Your communication was received yesterday and I have found the following information.

In 1833, through the influence of Dr. John Eberle, Professor of Materia Medica in the Medical College of Ohio, Dr. Samuel D. Gross was appointed demonstrator of Anatomy in that school. In 1835, when Daniel Drake founded the Medical Department of the Cincinnati College, Gross was made Professor of Pathological

of Pennsylvania. Various reasons, however, induced him to [85] decline this offer. Early in May, 1856, he was unanimously elected Professor of Surgery in the Jefferson Medical College, from which institution he had been graduated at the age of twenty-three years. This call he could not refuse; so, late in September of the same year (1856), he removed with his family to Philadelphia, where he spent the remainder of his life. He succeeded Dr. Thomas Dent Mütter in the faculty of his Alma Mater, and held the chair from 1856 to 1882, a period of twenty-six years.

BOOKS AND PUBLICATIONS.

Long before Gross finished his student course of studies in Jefferson Medical College, he had determined to undertake the translation of some French work as soon as he should receive his degree. He already had made a selection of Edwards's Manual of Surgical Anatomy, but a few days before he thought of beginning, he found, much to his chagrin and disappointment, that he had been forestalled in his contemplated task by Mr. Coulson of London. While debating in [86] his own mind what to do next, he had placed in his hands a French work on anatomy—Bayle and Hollard's General Anatomy. Within a year after his graduation he not only translated this book, but also three additional foreign works—Hatin's Manual of Obstetrics, Hildenbrand on Typhus Fever, and Tavernier's Operative Surgery. He completed his first translation, Bayle and Hollard's General Anatomy, in two months. It formed an octavo volume of about three hundred

Anatomy and remained with that school until it closed in 1839. In [85] 1840 he became Professor of Surgery in the Louisville Medical Institute, which position he held for sixteen years. I cannot send you catalogues confirming the above statements as we have no duplicates and the only picture we have of Dr. Gross is framed with a group of other early teachers and of course you can easily see that it would be impossible to send it. However, the statements made are authentic and you can use them in your paper.

Trusting that this is the information that you desire, I am,

Respectfully yours,

(Signed) E. O. SMITH,
Secretary of Faculty.

[86] pages, and the edition numbered two thousand copies. The publisher, Mr. John Grigg of Philadelphia, paid him two hundred dollars for it. In the opening paragraph of his preface Gross first comments upon the newness of this branch of anatomy and then pays a tribute to Bichat. He says:

General Anatomy is a science of comparatively modern date; and, like every other great and important improvement, it has gradually arrived at its present degree of perfection. To Bichat, no doubt, is due the honor of having first established this branch of anatomy into a science, and the work which he has left us upon this subject is at once an imperishable monument of his great talents and of his ingenious and profound researches.*

His second translation was another French work—Hatin's Manual of Obstetrics—a small practical treatise of 166 pages and an appendix. The latter, consisting of 18 pages, contains Magendie's celebrated paper on the cephalo-spinal fluid, which was translated by Dr. Joseph Gardner, a fellow-graduate of Gross. This translation was completed in three weeks, and was also published by Mr. Grigg, who paid Gross the munificent sum of seventy-five dollars.

The third work translated by Gross was Hildenbrand on Typhus Fever. At that time typhus fever, variously called "ship fever" or "jail fever," was a deadly and widely prevalent disease. This little German book was much celebrated in its day. The translation was published by Mr. Elam Bliss of New York, in the winter of 1829. The volume of 180 pages was completed in two months and Gross received one hundred and seventy-five dollars for it. It is interesting to observe that 1829, the year it was published, is the year in which Louis of Paris coined the name "typhoid fever."

It is manifestly evident that Hildenbrand, writing in 1809, must have recognized typhoid fever, and described it under the

* I wish to call attention to the fact that in Bayle and Hollard's General Anatomy each subject closes with a paragraph on pathological anatomy and a complete bibliography. There is also an Appendix, containing an account of four so-called Accidental Tissues: a. Tuberculous productions. b. Scirrhus. c. Encephaloid or cerebriiform cancer. d. The melanotic substance.

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name of nervous or non-contagious fever. His book contains [86] twelve sections or chapters, and he writes, Section I, p. 9:

It (the contagious typhus) is distinguished from the pure nervous and asthenic fevers, properly so called, in this, that, although these fevers are ushered in with true vital debility and the ordinary nervous symptoms, they are not contagious; and the affected nervous system manifests only some particular signs of this contagion, as for instance, the stupor and some others which we shall hereafter describe when speaking of the course of typhus. The exanthemata, perhaps, also establish some difference, as well as the periodical exacerbations, which are more peculiar to the simple nervous fevers.

Section II is very interesting, and is entitled "On the Antiquity and History of Typhus, and of Its Effects Upon the Human Race."

Section IV is devoted to the contagious typhus. Its full caption is "Of the Simple Regular Typhus, Communicated by Contagion." In contrast to Section IV is Section XII, entitled "General Observations on the Originary Typhus." In Section XII, page 173, the author says:

It (the originary typhus) is distinguished from the simple nervous and non-contagious fever, in this, that in the latter, the vertiginous stupor and the catharrhal symptoms are completely wanting; while the other symptoms, such as the subsultus tendinum, the convulsions, the cramps and the general erethism of the body, are greatly aggravated. The periodical exacerbations, whether quotidian, or tertian, are likewise more peculiar to the simple nervous and non-contagious fevers.

The fourth translation by Gross, and the last he ever attempted, was another French book, Tavernier's *Operative Surgery*. The first volume was translated in less than three months. Tavernier's work of two octavo volumes of nearly five hundred pages each, was the first treatise on operative surgery ever published in the United States.⁷ The publisher, Mr. Grigg, paid Gross four hundred dollars for his labors. Volume II, entitled *Clinical Surgery*, was not translated by him.

⁷This surgery is preceded by an Introduction consisting of twenty-five closely printed pages, which gives a concise history of surgery. In Chapter IV, Sec. 4, p. 308, occurs a brief account of Sir Astley Cooper's famous operation of ligating the abdominal aorta.

[86] Before passing from these four translations to his original works, I wish to call brief attention to the rapidity and magnitude of the task accomplished by the young physician. It was his custom to translate from twenty to twenty-five pages a day, no matter what might be his other engagements. The average French or German student of the present generation would be in imminent danger of heart failure if his teacher were to assign him so stupendous a task.

Having completed the four above-mentioned translations, Gross set to work forthwith upon the composition of his first original work. This book, written with a facile pen, was entitled "The Anatomy, Physiology, and Diseases of the Bones and Joints." It consists of an octavo volume of nearly four hundred pages, and was finished in the space of little more than three months. The work was issued in the autumn of 1830, by Mr. Grigg. The preface is dated "Easton, July, 1830."

When he wrote this book he was but twenty-five years of age, and he seems to have had some misgivings as to the reception which would probably be accorded it because of his youth and inexperience. On page iv of the Preface, Gross states:

"If," to use the language of an eloquent writer,⁸ "any one should conceive the present undertaking to be above the capacity [87] of my age, I will say, even at the risk of a paradox, that young men are perhaps best fitted to compose elementary works; because the difficulties which they have encountered in their studies, as well as the steps which they have taken to overcome them, are still fresh in their memory."

However, this early effort was well received, and two thousand copies were exhausted in less than four years. A second edition was not issued. The author states that he never received a cent of remuneration for this book.

Dr. Gross was the first to describe the use of adhesive plaster in the treatment of fractures. This description (Chap. II, Art. II, under the caption, "Treatment of Complicated Fractures") reads as follows:

If the bone be broken into several pieces, and any of them are completely detached, or so loose as to render their union highly

⁸ Richerand. Preface to his Elements of Physiology.

improbable, all such pieces ought to be carefully removed; after [87] which the edges of the wound should be slightly approximated, and kept in this position by a few short strips of adhesive plaster. The limb should be placed upon a pillow and surrounded with the bandage of Scultetus, and every care taken to obviate and remove inflammation. When the wound suppurates, it should be frequently dressed with some digestive ointment, or soft emollient poultices, as circumstances may require, care being taken that at each application of them the fracture be disturbed as little as possible. As soon as the inflammation has subsided, and the parts begin to heal, the ends of the fragments should be brought into contact, and be maintained in apposition by appropriate splints and dressings. In complicated fractures of the leg, it not unfrequently happens that the soft parts about the ankle are so much contused, or otherwise injured, as to render it impossible to employ the usual extending bands. When this is found to be the case, the difficulty may usually be remedied by applying along each side of the leg, as high up as the seat of the fracture will admit, a piece of strong muslin, about two feet and a half in length, two inches and a half in width, and spread at one of its extremities with adhesive plaster. The part which is applied upon the limb should be confined by three or four circular strips, so as to keep it firmly in its place, and equalize the extending power. The free extremities of the extending bands should then be tied under the sole of the foot, and be secured to the block or bar which connects the lower ends of the splints. This mode of making extension, for which we are indebted to the ingenuity of my friend and preceptor, Dr. Swift, of this place (Easton), will, I am fully persuaded, be found highly useful in practice, and satisfactorily obviate the inconveniences to which I have just alluded.

Apropos of the four translations and the book on the Bones and Joints, Gross thus writes in his Autobiography (p. 43) :

All these works were published in about eighteen months after I took my degree. The different translations and the book on the Bones and Joints formed nearly fifteen hundred pages octavo. In addition to this, I assisted the late Dr. Godman in translating the Duke of Saxe-Weimar's Travels in the United States, published soon afterwards by Carey and Lea. This work was written in German, and I completed about two hundred pages of it in less, I think, than a fortnight. . . . My practice during this period was, of course, limited; I went little into society and took hardly any recreation. Depriving myself of pleasure and amusement, I devoted my time to my task, thus literally verifying the saying of the Roman, *Nulla dies sine linea*. I labored day and night under the stimulus both of ambition and of poverty.

[87] As has been stated in a previous paragraph, in the month of April, 1830, Gross removed from Philadelphia to Easton. While residing there he spent all his leisure during the summer months upon the composition of a work on Descriptive Anatomy. In it he makes the effort for the first time in English to change the nomenclature of anatomy from Latin into English. This book, however, was never entirely completed and never published.

Next, as a result of four years' study and teaching, his *Elements of Pathological Anatomy* was published. The work was founded upon knowledge derived from dissections made during his occupancy of the chair of pathological anatomy in the Cincinnati Medical College, from an elaborate course of reading, and from numerous visits to the slaughter-houses of Cincinnati. It was issued in 1839, in two octavo volumes of more than five hundred pages each. The book was illustrated by numerous wood-cuts and several colored engravings, and was the first systematic work upon the subject ever published in the United States, or, indeed, in the English language.

It is true, as the worthy president of this society, Dr. Henry Barton Jacobs, told us in his interesting disquisition on "The Gold-headed Cane," that Dr. Matthew Baillie of London published a little book on pathology as early as 1793, but Dr. Baillie's book does not purport to be a complete treatise. It is entitled, "On the Morbid Anatomy of Some of the Most Important Parts of the Human Body."

In Volume II (pp. 458-463), Gross gives an account of a number of dissections of specimens of false conceptions or uterine moles—the first account of them in the English language. His examinations of the prostate gland have also been fully quoted by Sir Henry Thompson and others.

A second edition of the *Elements of Pathological Anatomy*, greatly enlarged and thoroughly revised, was issued in 1845. It consists of one large octavo volume of eight hundred and twenty-two pages, illustrated by colored engravings and two hundred and fifty wood-cuts. It contains full marginal references, which greatly enhance its value. A copy of the second edition was a favorite book of Professor Rudolph Virchow.

Speaking of the Elements, Dr. J. M. DaCosta, in his Bio-graphical Sketch of Dr. Gross, says:

It is a mine of learning, and its extended references make it valuable to this day. Its merits have been fully recognized abroad; and on no occasion more flatteringly than when the great pathologist, Virchow, at a dinner given to Dr. Gross at Berlin in 1868, complimented him publically on being the author, and, pointing to the volume, which he laid upon the table, gracefully acknowledged the pleasure and instruction which he had often gained from it.

A third and last edition of this work appeared in 1857, from the press of Blanchard and Lea. It was in some degree an abridgment of the second edition, and yet it comprised a very good outline of the existing state of the science.

Before leaving the subject of pathological anatomy and passing on to the next, I wish to quote a few sentences relating thereto, written by Gross in February, 1870, as follows:

A knowledge of pathological anatomy is the very basis of diagnosis; and when it is considered how important it is that a physician should be able to determine the nature of a disease before he institutes his treatment, it is not a little surprising that this department of medicine should be taught in so few of our medical schools. This omission is one of the crying sins of the present day. Everything, however irrelevant and useless, is taught to the exclusion of morbid anatomy. I only wish that every medical college in the country were compelled to introduce it into its curriculum of studies. To make room for it we might well dispense with some of the useless teachings in chemistry, materia medica, physiology, and even midwifery, so characteristic of the present day.

In 1842 Dr. Gross edited, with copious notes and additions, the American publication of Robert Liston's Elements of Surgery, a famous work in its day. Liston's book had a perfect right to be good, because its author was ably seconded in his anatomical and surgical investigations by one Ben Crouch—probably the most celebrated resurrectionist or body-snatcher of all time.

In the spring of 1841, Dr. Gross commenced his investigations on the nature and treatment of wounds of the intestines. The experiments, upwards of seventy in number, were performed exclusively on dogs, and were continued with var-

[88] ious intermissions for more than two years, culminating in the publication, in 1843, of a work entitled, "Wounds of the Intestines."

Blanchard and Lea, in 1851, published his work entitled, "A Practical Treatise on the Diseases, Injuries and Malformations of the Urinary Bladder, the Prostate Gland, and the Urethra." This work was at once accepted as authoritative upon these subjects. A second edition, greatly enlarged and improved, was issued in 1855. It forms a closely-printed octavo volume of nine hundred and twenty-five pages, illustrated by one hundred and eighty-four wood-cuts. Perhaps the best-known of these wood-cuts are those (pp. 70 and 71) illustrating the size and form of the human prostate gland in seven subjects of different ages. In an appendix of twenty-nine closely-printed pages is the first and only attempt ever made by any writer to furnish a complete account of the prevalence of stone in the bladder and of calculous disorders in the United States, Canada, Nova Scotia, Europe, and other countries. A third and last edition of this work was issued in September, 1876, under the able editorship of Dr. Gross's son, Dr. Samuel W. Gross.

In 1854, Dr. Gross's work, "A Practical Treatise on Foreign Bodies in the Air-Passages," was also issued from the press of Blanchard and Lea. He was occupied upwards of two years in its composition. It consists of an octavo volume of four hundred and sixty-eight pages, illustrated by fifty-nine engravings on wood. As the author himself states: "It was the first attempt to systematize our knowledge upon the subject, and the work is therefore, strictly speaking, a pioneer work." This work has long been out of print, and has never been reissued. The late Sir Morrell Mackenzie, the highest authority on the subject in Europe, in speaking of this work nearly thirty years after its publication, makes the following remark: "This invaluable essay gives full reports of two hundred cases, and is so complete that it is doubtful whether it will ever be improved upon; indeed, the excellent articles of Bourdillat and Kühn, subsequently published, the former based on three hundred, and the latter on three hundred and

seventy-four cases, only confirm the conclusions previously arrived at by Gross.”⁹

Several years before Dr. Gross left Kentucky he had commenced the composition of his System of Surgery. He states that he had determined to do his best to make it, if possible, the most elaborate if not the most complete treatise in the English language. Early in the spring of 1859 the manuscript was submitted to the publishers, Messrs. Blanchard and Lea. The preface is dated Jefferson Medical College, Philadelphia, July 8, 1859. The work consists of two portly octavo volumes, numbering in the aggregate two thousand three hundred and sixty pages, and illustrated by nine hundred and thirty-six engravings on wood. The edition comprised two thousand copies. The full title of the work is:

A
SYSTEM OF SURGERY;
PATHOLOGICAL, DIAGNOSTIC, THERAPEUTIC,
AND OPERATIVE.
BY
SAMUEL D. GROSS, M. D.,
Professor of Surgery in the Jefferson Medical College of
Philadelphia;
Member of the American Philosophical Society; Fellow of the
College of Physicians of Philadelphia;
Corresponding Member of the New York Academy of Medicine,
and of the
Imperial Royal Medical Society of Vienna;
Author of a Treatise on the Urinary Organs, etc.
ILLUSTRATED BY
NINE HUNDRED AND THIRTY-SIX ENGRAVINGS.
IN TWO VOLUMES.
PHILADELPHIA:
BLANCHARD AND LEA.
1859.

⁹ Sir Morrell Mackenzie: Diseases of the Throat and Nose, vol. I, p. 450. Philadelphia, 1880.

[88] The following inscription adorns the dedicatory page of Dr. Gross's System of Surgery:

TO
THE NUMEROUS PUPILS
WHO, DURING THE LAST QUARTER OF A CENTURY,
HAVE ATTENDED HIS LECTURES,
AND WHO ARE NOW SETTLED IN EVERY SECTION OF THE
UNITED STATES
IN THE
HONORABLE PURSUIT OF THEIR PROFESSION,
THESE VOLUMES,
DESIGNED TO ILLUSTRATE ONE OF THE MOST IMPORTANT AND
VALUABLE BRANCHES OF THE HEALING ART,
ARE RESPECTFULLY AND AFFECTIONATELY INSCRIBED
BY THEIR FRIEND,
THE AUTHOR.

The comprehensiveness of this system is indicated in one sentence on the first page of the preface. Dr. Gross writes:
[89] "My aim has been to embrace the whole domain of surgery, and to allot to every subject its legitimate claim to notice in the great family of external diseases and accidents."

In Volume I (pp. 588-589), he discourses eloquently on the "Qualifications of a Surgeon." The four paragraphs could be read with advantage by every medical student. He sums up the situation as follows:

Celsus, long ago, happily defined the qualities which constitute a good operator. He should possess, says the illustrious Roman, a firm and steady hand, a keen eye, and the most unflinching courage, which can disregard alike the sight of blood and the cries of the patient.

Some of us, I am sure, are also reminded of Sir John Bell's ideal of the qualities necessary in a truly great surgeon—"The brain of an Apollo, the heart of a lion, the eye of an eagle, and the hand of a woman."

The Gross System of Surgery passed through six editions, each being a decided improvement upon its predecessor. The sixth and last edition was issued in 1882, just seventeen months before the death of its venerable author.

At the outbreak of the Civil War, Dr. Gross wrote a brief

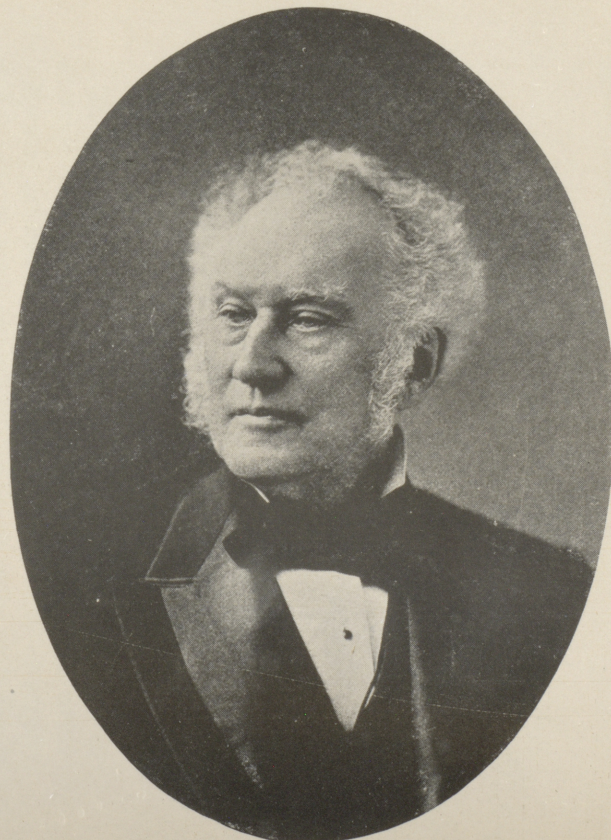
(18)

THE JOHNS HOPKINS HOSPITAL BULLETIN, MARCH, 1912.

PLATE III.



DR. GROSS IN HIS PRIME.



PORTRAIT OF DR. GROSS
IN LIBRARY OF JEFFERSON MEDICAL COLLEGE.



THE GROSS HOMESTEAD.

"Within its quaint walls Dr. Gross first saw the light of day; from its rude doorway he went forth an humble country lad, to eventually become America's foremost surgeon."

(18)

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Manual of Military Surgery. It was composed in nine days, [189] and published in a fortnight from the time of its inception. Under the care of Messrs. J. B. Lippincott and Company, it passed through two editions of 2,000 copies each. It was republished at Richmond, Virginia, and was extensively used by the surgeons of both armies. In 1874, it was translated into Japanese and published at Tokio, Japan. The first edition bears the date of 1861; the second edition, 1862.¹⁰

In 1861 Dr. Gross wrote, or rather edited, a work entitled, "Lives of Eminent American Physicians and Surgeons of the Nineteenth Century." It is an octavo volume of upwards of eight hundred pages, now exceedingly scarce. To this work he contributed three sketches on Dr. Ephraim McDowell, Dr. Daniel Drake, and Dr. John Syng Dorsey. This book is the third publication on American medical biography. The first, issued in 1828, was edited by Dr. James Thacher of Massachusetts, and the second, edited by the late Dr. Stephen W. Williams, also of Massachusetts, appeared in 1845. Dr. Gross's book contains a full and complete account of the life and work of thirty-two eminent American physicians and surgeons, now of a by-gone medical epoch.

A few years later he wrote a valuable work entitled, "A Full Account of Special Surgery on Diseases and Injuries of Particular Organs, Textures, and Regions." A fifth edition of this work was issued in 1872.

In 1876 he wrote the section on Surgery, in the centennial volume entitled, "A Century of American Medicine, 1776-1876." It is a masterly article consisting of one hundred pages, originally contributed to The American Journal of the Medical Sciences.

Dr. Gross delivered the first anniversary address before the Philadelphia Academy of Surgery in 1881. It was a memoir of John Hunter, with the title of John Hunter and His Pupils, later published in book form. In the preface he states: "In assuming this duty I selected for my theme the life, character, and services of the founder of scientific surgery."

¹⁰ Another favorite volume with the surgeons of both contending armies was Dr. Julian J. Chisolm's excellent "Manual of Military Surgery for the Use of Surgeons in the Confederate Army, 1861."

[89] The portrait which fronts this little volume on John Hunter is the familiar one from Sharp's steel engraving of Sir Joshua Reynold's celebrated painting. The text itself has been liberally quoted by Dr. Mather, in his excellent book entitled, "Two Great Scotsmen—William and John Hunter."

On February 14, 1884, Dr. Gross made the final entry in his Autobiography, a handsome two-volume work which has come down to us as a priceless heritage. The Autobiography was edited by his two sons—the late Dr. Samuel W. Gross and the Hon. A. Haller Gross of the Philadelphia Bar. Its full title is: "Autobiography of Samuel D. Gross, M. D., with Reminiscences of his Times and Contemporaries." It was begun about fifteen years prior to the death of its distinguished author and published in 1887, three years subsequently. In the opening paragraph, Dr. Gross states his reasons for writing it in the following words:

It is my wish to write a sketch of my life for the gratification of my children and grandchildren, and for the benefit of such members of my profession as may feel an interest in me from my long connection with it. Possibly some good may grow out of such a labor, by stimulating the ambition of those who may come after me to work for the advancement of science and the amelioration of human suffering. The devotion which I have shown to my profession may, perhaps, exert a salutary influence upon the conduct of young physicians, and thus serve to inspire them with a desire to excel in good deeds.

The Autobiography is preceded by a Memoir of Dr. Gross by the late Dr. Austin Flint, Sr., a former colleague and life-long friend. This Memoir is an excellent portrayal of the life and labors of one of the foremost men of his day—one who is declared to have been "perhaps the most eminent exponent of medical science that America has yet produced."

CONTRIBUTIONS TO MEDICAL SCIENCE.

In addition to his published works, Dr. Gross wrote numerous important journal articles, which cover a wide range of subjects. The principal titles, arranged in chronological order, are as follows:

Report on Kentucky Surgery, 1851. [89]
An Account of a Case of Axillary Aneurism, 1852.
On the Diseases and Operations on the Jaws, 1852.
A Short Account of the Use of Adhesive Plaster in the Treatment of Fractures, 1852.
A Discourse upon the Life and Character of the late Dr. Drake, 1853.
Results of Surgical Operations in Malignant Diseases, 1853.
Causes which Retard the Progress of American Medical Literature, 1856.
August Gottlieb Richter: his Works and his Contemporaries, 1856.
Hypertrophy of the Gums, 1856.
Report of a Case of Gunshot Wound of the Neck, 1856.
Necrological Notice of the late Dr. John K. Mitchell, 1858.
Nature and Treatment of Tuberculosis of the Hip-joint, 1858. [90]
Sketch of the Life and Services of Ambroise Paré, 1860.
An Account of a Remarkable Case of Melanosis, or Black Cancer, 1860.
Practical Observations on the Nature and Treatment of Prostatorrhoea, 1860.
Brunonianism, Toddism, and other Isms, 1861.
Necrological Notice of Jedediah Cobb, M. D., 1861.
Biographical Sketch of Charles Wilkins Short, M. D., 1865.
Then and Now: Advances in Medical Science in the Past Forty Years, 1867.
The Live Physician, 1868.
A Memoir of Valentine Mott, M. D., 1868.
A New Method of Appointing Medical Witnesses as Experts in Cases involving Medico-Legal Considerations, 1868.
A Memoir of Robley Dunglison, M. D., 1869.
Training of Nurses, 1869.
Nature's Voice in Disease and Convalescence, 1870.
Syphilis in its Relation to the National Health, 1874.
The Factors of Disease and Death after Injuries, Parturition, and Surgical Operations, 1874.
Bloodletting Considered as a Therapeutic Agent; or, One of the Lost Arts, 1875.
The Glories and Hardships of the Medical Life, 1875.
The Proximate Cause of Pain, 1877.
A Memoir of Dr. Isaac Hays, 1879.
The Social Position of the Doctor, 1880.
Value of Early Operations in Morbid Growths, 1883.
The Importance of Having Trained Nurses for the Smaller Towns and Rural Districts, and the Proper Method of Securing Them, 1883.

[90] Obituary Notice of Dr. J. Marion Sims, 1883.

Wounds of the Intestines, 1884.

Lacerations of the Female Sexual Organs Consequent upon Parturition, 1884.

I cannot attempt to describe all of these thirty-seven papers and journal articles, but two or three notes may add to their interest. For example, it was in his elaborate "Report on Kentucky Surgery," prepared in 1851, that Dr. Gross first established the fact that the late Dr. Ephraim McDowell of Danville, in that State, was justly entitled to the honor of being the father of ovariectomy.

In the closing paragraph of his paper on the "Causes which Retard the Progress of American Medical Literature," read before the American Medical Association in 1856, Dr. Gross embodied three resolutions:

Resolved, That this Association earnestly and respectfully recommend, first, the universal adoption, whenever practicable, by our schools, of American works as text-books for their pupils; secondly, the discontinuance of the practice of editing foreign writings; thirdly, a more independent course of the medical periodical press towards foreign productions, and a more liberal one towards American; and, fourthly, a better and more efficient employment of the facts which are continually furnished by our public institutions for the elucidation of the nature of diseases and accidents, and, indirectly, for the formation of an original, a vigorous, and an independent national medical literature.

Resolved, That we venerate the writings of the great medical men, past and present, of our country, and that we consider them as an important element of our professional and national glory.

Resolved, That we shall always hail with pleasure any useful and valuable works emanating from the English press, and that we shall always extend to them a cordial welcome as books of reference, to acquaint us with the progress of legitimate medicine abroad, and to enlighten us in regard to any new facts of which they may be the repositories.

Dr. Gross also gave a number of special lectures and addresses, each being a model of its kind. These may be summarized as follows:

Inaugural Address, Jefferson Medical College, 1856.

Valedictory Address, Jefferson Medical College, 1860.

Address before the Alumni Association, Jefferson Medical College, 1871.

Address before the Medical Society of the State of Pennsylvania, [90] 1871.

History of American Medical Literature from 1776 to the Present Time, 1875.

Address delivered before the Kentucky State Medical Society, 1879.

Valedictory Address, Bellevue Hospital Medical College, 1882.

Address of Welcome before the National Association for the Protection of the Insane and the Prevention of Insanity, 1883.

His Inaugural Address delivered at the opening of the 1856-1857 session of the Jefferson Medical College was a praiseworthy effort. In it he feelingly refers to his regret at leaving Kentucky. He says:

It was pleasant to dwell in the land of Boone, of Clay, and of Crittenden; to behold its fertile fields, its majestic forests, and its beautiful streams; and to associate with its refined, cultivated, generous-hearted, and chivalric people. It was there that I had hoped to spend the remainder of my days upon objects calculated to promote the honor and welfare of its noble profession, and finally to mingle my dust with the dust and ashes of the sons and daughters of Kentucky. But destiny has decreed otherwise. A change has come over my life. I stand this evening in the presence of a new people, a stranger in a strange place, and a candidate for new favors.

He concludes his address in the following words:

Whatever of life, and of health, and of strength remains to me, I hereby, in the presence of Almighty God and of this large assemblage, dedicate to the cause of my Alma Mater, to the interests of Medical Science, and to the good of my fellow-creatures.

I shall pass in brief review but one other of these eight lectures and addresses. It is the address delivered before the Kentucky State Medical Society at its meeting at Danville, May 14, 1879, at the dedication of the monument erected in memory of Ephraim McDowell, the "Father of Ovariectomy."¹¹ It was a masterly effort, Dr. Gross being at his best.

At the close of the dedicatory services the door-knocker of Dr. McDowell's house was presented to Dr. Gross by Dr.

¹¹ This splendid dedicatory address is given in full in Mrs. Ridenbaugh's excellent Biography of Dr. Ephraim McDowell. It fills sixty-five pages of the book.

[90] Richard O. Cowling, president of the Kentucky State Medical Society. In presenting it, Dr. Cowling said, in part:

I would that the magician's wand were granted me awhile to weave a fitting legend around this door-knocker, which comes from McDowell to you, Dr. Gross. There is much in the emblem. No one knows better than you how good and how great was the man of whom it speaks. It will tell of many a summons upon [91] mercy's mission which did not sound in vain. Ofttimes has it roused to action one whose deeds have filled the world with fame. A sentinel, it stood at the doorway of a happy and an honorable home, whose master, as he had bravely answered its signals to duty here below, so when the greater summons came, as trustfully answered that, and laid down a stainless life.

It belongs by right to you, Dr. Gross. This household genius passes most fittingly from the dearest of Kentucky's dead surgeons to the most beloved of her living sons in medicine. She will ever claim you as her son, and will look with jealous eye upon those who would wean you from her dear affection.

And as this emblem which now is given to you hangs no longer in a Kentucky doorway, by this token you shall know that all Kentucky doorways are open at your approach. By the relief your skill has wrought; by the griefs your great heart has healed; by the sunshine you have thrown across her threshold; by the honor your fame has brought her; by the fountains of your wisdom at which your loving children within her borders have drunk, the people of Kentucky shall ever open to you their hearts and homes.

Dr. Gross was much overcome by this mark of approbation, coming from the Kentucky State Medical Society, and by Dr. Cowling's well-chosen words. He replied, in part:

I take this emblem now offered to me as the most valued gift of my life. It shall be received into my home as a household god, environed by all the memories of goodness and greatness to which your speaker has referred, and above all recalling this scene. Dying I shall bequeath it, among my most important possessions, to the family that I may leave, or in failure of that, to be preserved in the archives of some society.

Five years later, when Dr. Gross died, Dr. McDowell's door-knocker was presented to the Philadelphia Academy of Surgery. It was subsequently transferred to the museum of the College of Physicians of Philadelphia, where it is now tenderly treasured.

I made an honest effort to borrow Dr. McDowell's door-knocker and bring it to Baltimore, to show at this meeting; but I did not succeed.¹²

ACHIEVEMENTS IN MEDICINE AND SURGERY.

A faithful record of the achievements of Dr. Gross in medicine and surgery would carry us far beyond the limits of the present paper. He usually spoke of himself as a physician rather than a surgeon. His most important original contributions to medicine and surgery, apart from authorship, may thus be enumerated:

Experiments on dogs and rabbits, to illustrate the subject of manual strangulation.

Experiments upon secretion, to ascertain the rapid transit of certain articles, when taken into the stomach, through the blood by the kidneys.

Weights and measurements of healthy organs.

Experiments on the nature and treatment of wounds of the intestines.

Dissections of specimens of false conceptions, or uterine moles.

Observations on the temperature of venous blood in healthy persons of both sexes.

Deep stitches in wounds of the wall of the abdomen, to prevent hernia or protrusion of the bowel after recovery.

The invention of an enterotome for the treatment of artificial anus.

A tracheotomy forceps, for the extraction of foreign bodies from the air-passages.

Wiring the ends of the bones in dislocations of the sterno-clavicular and acromio-clavicular joints.

Blood catheter, an instrument for drawing off the urine, when mixed with blood.

¹² The following note from Dr. Keen explains the situation.

1729 CHESTNUT STREET, PHILADELPHIA,

January 2, 1912.

MY DEAR DR. ROHRER: I have your letter of the 1st. Dr. Ephraim McDowell's door-knocker is in the Museum of the College of Physicians. I presume that your photographer would be allowed to photograph it, but no permission I am sure would be granted to take this relic out of the Museum itself.

Yours very truly,

(Signed) W. W. KEEN.

[91] An arterial compressor—a peculiar pair of forceps—for arresting hemorrhage in deep-seated vessels.

A tourniquet, or compressor, for compressing the vessels of the extremities in amputation.

An instrument for extracting foreign bodies from the nose and ear, found in nearly every pocket case in the country.

Modification of Pirogoff's amputation at the ankle joint, unjustly ascribed to Dr. Quimby, of Jersey City.

Laparotomy in rupture of the bladder.

Direct operation for hernia by suturing the pillars of the ring.

Mode of operating for inverted toe-nail.

Apparatus for the transfusion of blood.

First account of prostaticorrhoea.

Description of a new form of neuralgia of the jaws in old persons.

Pododynia, a disease of the foot, first described by him.

He was the first to describe the use of adhesive plaster as a means of making extension in the treatment of fractures of the lower extremity.

He was the first to make it a practice to administer morphine and quinine in large doses.

He was the first to suggest the use of ergot in the treatment of diabetes.

He suggested a new method of treating ganglia of the hand and foot by subcutaneous division of the cyst.

He was the first to practice putting a patient under the full influence of opium, immediately after evacuating a chronic abscess.

He early taught the doctrine of the inflammatory origin and vitality of tubercle of the lungs and other structures.

He was the first to teach that amputation in senile gangrene should be performed at a great distance from the affected parts.

He was the first to sew together the ends of an accidentally divided tendon of the hand.

For many years he taught that scrofulous diseases are nothing but remote forms of syphilis. To-day, however, scrofula is known to be tuberculous in character.

MISCELLANEOUS.

Among his other services to the profession and to humanity at large, the following are deserving of mention. While residing at Easton, in 1832, the great scourge of epidemic Asiatic cholera visited the United States. The disease first appeared in Canada, and then in New York. Early in July it broke out with great virulence in New York City. Great

excitement prevailed throughout the entire Atlantic seaboard. [91] Easton, only eighty miles off, participated in the alarm. At a meeting of the town council held on the 19th of July, 1832, Dr. Gross was appointed to visit New York for the purpose of investigating the disease. The situation was one well calculated to try the mettle of the young physician. But he re- [92] sponded heroically to the call of duty and of humanity. I shall repeat briefly the whole story, in the language of Dr. W. W. Keen:¹⁸

In 1832, that most dreaded of all scourges, Asiatic cholera, for the first time broke out all over this country with the greatest virulence. Easton was only eighty miles from New York and the citizens, in terror lest the dread disease would reach their own town, appointed a young, intrepid surgeon to visit New York and learn what he could do for their benefit. When others were fleeing in frightened thousands from the pestilence, Gross bravely went directly into the very midst of it, reaching New York when the epidemic was at its very height. In that, then small and half-depopulated, town 385 persons died on the very day of his arrival—and he stayed there a week in a hot July, visiting only its hospitals and its charnel-houses. What call you that but the highest type of bravery?—a bravery which Norfolk and Mobile and Memphis and New Orleans have since seen repeated by scores of courageous physicians ready to sacrifice their lives for their fellow-men with no blare of trumpets, no roar of cannon, no cheer of troops, no plaudits of the press! No battlefield ever saw greater heroes; no country, braver men!

Dr. Gross possessed great powers of organization. He was one of the founders of the Kentucky State Medical Society, and of the Medical Jurisprudence Society of Philadelphia. In the autumn of 1857 he founded, along with Dr. J. M. Da Costa, the Philadelphia Pathological Society. He was the originator of the Philadelphia Academy of Surgery, which was founded in 1879; also the American Surgical Association, instituted in 1880. For this reason we speak of him as the "father of the American Surgical Association," just as we speak of the late Dr. Nathan Smith Davis as the "father of the American Medical Association."

¹⁸ Address at the unveiling of the bronze statue of the late Prof. Samuel D. Gross, M. D., May 5, 1897.

In addition to the M. D. degree, which Dr. Gross received from Jefferson Medical College in March, 1828, and certificates of proficiency from the several preparatory schools in which he received his academic training, he was the recipient of several honorary degrees from universities at home and abroad. He was made an LL. D. by the Jefferson College of Canonsburg, Pennsylvania, in 1861. In 1872 the University of Oxford conferred upon him the degree of D. C. L., the University of Cambridge the degree of LL. D., in 1880, and the University of Edinburgh and the University of Pennsylvania conferred the same degree, *in absentia*, in April and May, 1884.

He was a member of a score of American medical and scientific societies, and honorary member of nearly a dozen similar European societies. These include honorary membership in the Pathological Society of London, a justly deserved honor, as Dr. Gross was the first regular teacher of pathological anatomy in the United States.

PRIVATE LIFE.

In private life no man was more beloved, whether in his ideal and hospitable home or in the ever-widening circle of his friends and acquaintances. To quote the language of Dr. Austin Flint, Sr.:¹⁴

His home was open to all who had any claim upon his attentions. He was considerate and generous alike to the guest who was renowned in letters at home and abroad, and to the young physician and the medical student. As has been said by Froude, "Nowhere is a man known better than in his own family. No disguise is possible there; and he whom father and mother, brother and sister love, we may be sure has deserved to be loved." No father was ever kinder, no husband more affectionate.

Dr. Gross believed in early marriages. True to his convictions, in the winter of 1828-29, in Philadelphia, he married the woman of his choice, the widow of Mr. Hugh Dulany. Her maiden name was Louisa Ann Weissell. She was born in

¹⁴ Memoir of Dr. Gross, which precedes the Autobiography, pp. XXVIII-XXIX.

Kensington, London, when her parents were on a visit to [92] England. Mrs. Gross had a singularly gifted intellect and was a most brilliant conversationalist. She was of deep religious convictions. She died February 27, 1876.

Of the eight children born to Dr. and Mrs. Gross, three daughters and five sons, three died in infancy and another in her ninth year. The remaining four attained to their majority. These were two daughters and two sons. One son, the late Dr. Samuel Weissell Gross, whom his father declared to be the "greatest of all his works," died of pneumonia on the 16th of April, 1889, in the fulness of his powers as a great surgeon. At the time of his death he held the chair of Principles of Surgery and Clinical Surgery at the Jefferson Medical College, Philadelphia, and was most signally following in the footsteps of his father, for whose great System of Surgery he was engaged in collecting the information for a projected new edition. A daughter, Louisa, the late Mrs. Benjamin F. Horwitz of this city, a brilliant, charming woman and a great musician, died June 1, 1907.

Two of the children of Dr. Gross are still living. They are Mrs. Maria Gross Horwitz, widow of the late Orville Horwitz, and the Hon. A. Haller Gross, of the Philadelphia bar. To the latter I am indebted for many important facts concerning his father's life, and for the handsome autograph portrait. The traits that stand out in Dr. Gross's life were his purity of character, his great decision, his untiring industry, his self-reliance, his freedom from bigotry and superstition, and his manliness. He was a representative man and citizen. Physically, he was a singularly handsome man, six feet two inches in height, weighing 205 pounds.

SUMMARY OF LIFE WORK.

In summing up his life-work, we find that it was great in deeds and also great in years. Born in humble circumstances, his early days were spent in a rural community. Constant outdoor exercise, an excellent home training and example, and a wholesome environment enabled the country lad to lay the foundations of that splendid physique which stood him in such good stead when the responsibilities of a most exacting

[192] profession weighed so heavily upon his shoulders. From his youth up he was of studious habits and fond of natural history. He was known as a good, moral young man.

[193] As a medical student, both in the private office and in the medical school, he was ever attentive and diligent, earnestly seeking to make the most of his opportunities. He was primarily a pathologist, secondarily a physician and surgeon. He was a living embodiment of the late Hughlings Jackson's statement, "A good physician must be a good pathologist." And as all operators do who achieve real greatness, he entered the surgical arena through the portals of pathology. He was America's first pathologist.

Dr. Gross always thought himself a better physician than surgeon. As a practitioner, he was very successful, and for many years he had an immense family practice. A large share of his consultation work in Philadelphia, Louisville, and Cincinnati was of a strictly medical character. At one time he was extensively engaged in midwifery in connection with family practice. As an accoucheur he never lost but one woman by puerperal fever, and he never had occasion to apply forceps in any case originally under his care.

As a surgeon, Dr. Gross was a conservative and safe operator. Early in his career he was appalled at the sight of blood. But he possessed the staying qualities of a good operator—a steady hand, an unflinching eye, perfect self-control, and a thorough knowledge of relative anatomy. He was also a skillful diagnostician.

He was an original thinker, an inspiring teacher, and a voluminous author. He was an investigator of the highest rank. In the phraseology of Dr. W. W. Keen: "He 'blazed' more than one new 'trail' in the forests of surgical ignorance."

- CLOSING YEARS.

On April 10, 1879, a complimentary banquet was given to him at the old St. George Hotel in Philadelphia. It was on the occasion of the fifty-first anniversary of his entrance into the medical profession. It was a memorable gathering, and reference was made to it in the "Remarks of A. Haller Gross

at Mr. Potter's¹⁵ luncheon, June 6, 1910," in the following [93] words:

How well do I recall the occasion, graced as it was by the presence of some of the most distinguished physicians and surgeons of America, who vied one with another in doing honor to my father, and whose burning, eloquent words of welcome and God-speed fill my memory now after the lapse of thirty-one years. I can see Dr. Agnew, the distinguished Professor of Surgery at the University of Pennsylvania, who presided, pinning to the lapel of my father's coat a jeweled badge, presented by the subscribers to the banquet as a testimonial of their affection and esteem, accompanying the act by an exquisite burst of eloquence. And I can recall, as if it were yesterday, a sentence of my father's address—"Oh, for a glance at the profession half a century hence when man, enlightened and refined by education and redeemed from the thralldom of ignorance and superstition, shall reflect more perfectly than he now does the image of his Maker!"

On March 28, 1882, Dr. Gross resigned the chair of surgery in the Jefferson Medical College of Philadelphia, a position which he had filled with signal honor for twenty-six years. Altogether he had been a teacher of medicine and surgery for forty-nine years. His successors to the chair of surgery were his son, Dr. Samuel W. Gross, and Dr. John H. Brinton.¹⁶

After two years of retirement and failing health, he died, May 6, 1884, at which date he had almost rounded out his seventy-ninth year. A post-mortem examination, conducted by Dr. J. M. Da Costa, showed that Dr. Gross had suffered from marked gastric catarrh. There were irregular thickenings of the mucous membrane of the stomach, and a fatty heart. The right kidney contained a large cyst. The brain weighed forty-eight ounces.

At his own request his body was cremated at Washington, Pennsylvania, in Dr. Lemoyne's crematory, the only one in America at the time. This took place on the 8th of May, and in a little less than two hours and a half all that remained of

¹⁵ Hon. William Potter, president of the Board of Trustees of Jefferson Medical College, and at one time United States Minister to Italy.

¹⁶ On June 6, 1910, The Samuel D. Gross Professorship of Surgery was endowed at Jefferson Medical College by his daughter, Mrs. Maria Gross Horwitz, who gave \$60,000 for the purpose. Dr. J. Chalmers Da Costa was appointed to the chair.

[193]the "Nestor of American Surgery" were the accustomed seven pounds of ashes. These were placed in an urn, and deposited in Woodlands Cemetery, Philadelphia, next to the coffin of his wife. Upon the urn is the following inscription, written by a former pupil, Dr. D. W. Yandell of Kentucky:

IN MEMORIAM.

WITHIN THIS URN LIE THE ASHES OF

SAMUEL D. GROSS,

A MASTER IN SURGERY.

His life, which neared the extreme limits of the Psalmist, was one unbroken process of laborious years.

He filled chairs in four Medical Colleges in as many States of the Union and added lustre to them all.

He recast Surgical Science, as taught in North America, formulated anew its principles, enlarged its domain, added to its art, and imparted fresh impetus to its study.

He composed many books, and among them

A SYSTEM OF SURGERY,

Which is read in different tongues, wherever the Healing Art is practised.

With a great intellect, carefully trained and balanced, he aimed with undivided zeal at the noble end of lessening human suffering and lengthening human life, and so rose to the highest position yet attained in Science by any of his countrymen.

Resolute in truth, he had no fear; yet he was both tolerant and charitable.

Living in enlightened fellowship with all laborers in the world of Science, he was greatly honored by the learned in foreign lands, and deeply loved at home.

Behind the veil of this life there is a mystery which he penetrated on the

SIXTH DAY OF MAY, 1884.

HIS MEMORY

Shall exhort and his Example shall encourage and persuade those who come after him to emulate deeds which, great in themselves, were all crowned by the milk-white flower of

A STAINLESS LIFE.

America has been slow to honor her illustrious dead of the 1941 medical profession. Of the fifty-one names in the Hall of Fame, New York University, only one—that of Dr. Oliver Wendell Holmes, is the name of a physician. But Dr. Holmes's name is there, not because of his distinguished professional ability; not because he coined the word "anaesthesia"; not because he was the first to recognize the contagiousness of puerperal fever, but by reason of his eminent literary genius.

Be this as it may, the great surgeon whose name and fame constitute the theme of this evening's meeting was not destined to go down to his grave "unwept, unhonored, and unsung." In the city of Washington, D. C., under the very dome of the capitol of one of the mightiest nations on the face of the globe, there stands a fitting monument to him, in enduring bronze. A loving medical profession presented the statue, which is of heroic size, and the Congress of the United States appropriated \$1500 for the pedestal. The Gross statue was unveiled May 5, 1897. Dr. W. W. Keen, one of the eight great surgeons of the world, was the orator of the day. The statue bears the following inscription:

SAMUEL D. GROSS.

American physicians have erected
this statue to commemorate the great deeds
of a man who made such an impress
upon American surgery that it has served
to dignify American medicine.

1897.

Dr. Gross's name is one of the great names in American medicine and surgery that appear in mosaic in the ceiling of the Congressional Library at Washington.

Full of honors as of years, Dr. Gross sunk to his rest. Great as a medical teacher and investigator, greater still as a courageous and successful operator, greatest of all as a man and citizen, he left an impress upon his age and times which will probably never again be duplicated by any one man.

He is one of the few whose deeds live after them. Such as he have been characterized by a gifted poetess as being of

The immortal dead who live again
In minds made better by their presence.

[94] Dead? No! my dear hearers. Such a name is not "born to die." Samuel David Gross, "America's foremost surgeon," *is not dead*. True enough, he has passed from the sphere of action; he has rested from his arduous labors these twenty-seven years; but "his works do follow him." He still lives in the surgical principles which he so ably advocated; and in the hearts of those of us who cherish the traditions of our time-honored profession and believe, with the people of Kentucky, that a fitting attribute of a truly great physician or surgeon is the one implied by the inscription: "The milk-white flower of a stainless life."

NOTE I.

Since the appearance of the foregoing sketch, I have read with much interest the following letter from Dr. W. S. Miller, Professor of Anatomy at the University of Wisconsin, to the editor of the BULLETIN, and with Dr. Miller's very kind permission I take great pleasure in adding it to my account. I feel much indebted to him for calling my attention to the episode. Dr. Miller's letter reads as follows:

"I have read with much interest Dr. Rohrer's sketch of the late Professor Samuel D. Gross in the March issue of the BULLETIN. I fail, however, to find any reference to what is, to me, a very interesting episode, marking, as it does, the transition from the old to the new in surgical technique.

If one turns to the article on Surgery in 'A Century of American Medicine. 1776-1876,' by Professor Gross, we read on pages 212-213:

Let it not be supposed, from what precedes, that the American surgeon is a mere operator; if he ranks high in this particular, he ranks high also as a therapist. Nowhere, it may safely be asserted, are the great principles of surgery better taught, or better understood, than they are in this country. As a general practitioner, skilled in diagnosis, and in the art of prescribing, it is no presumption to affirm that he has no superior.

After calling attention to one or two possible defects in the American surgeon, he proceeds to laud his success in the treatment of wounds in the following words:

None but the most simple dressings are employed. Little, if any, faith is placed by any enlightened or experienced surgeon on this side of the Atlantic in the so-called carbolic acid treatment of Professor Lister, apart from the care which is taken in applying the dressing, or, what is the same thing, in clearing away clots and excluding air from wounds—an object as readily attained by the "earth dressing" of Dr. Addinell Hewson, of Philadelphia, and by the oil dressing, composed of a thin layer of cotton or patent lint, wet with olive oil, which I have myself employed for many years.

This is interesting reading, especially as we are reminded, by the recent death of Lord Lister, of the great service he rendered to surgery.

Professor Gross wrote the above during the Centennial year, 1876, and it was published in October of that year. On September 4, 1876, as we read in his Autobiography (my copy of which bears the inscription, 'Dr. Alan P. Smith, with kind regards of Maria Gross Horwitz'), the International Medical Congress opened with Professor Gross as chairman. On the evening of September 8, the public dinner of the Congress took place, and Professor Gross evidently took pride in recording, 'I occupied the chair, with Professor Lister, of Edinburgh, on my right, and Governor Hartranft on my left'; yet, the following month he published the above remark, discrediting the importance of Professor Lister's work.

Four years later (1880), Professor Gross seems to have joined the ranks of the believers in Listerism; for I find in his Autobiography that, while on a visit to England that year to receive the honorary degree of LL.D. from Corpus Christi College, at the dinner of the British Medical Association which he attended at Cambridge, he says, 'Directly opposite to me was Mr. Lister, the famous reformer of the surgical treatment of wounds and other injuries.'"

NOTE II.

Mrs. Maria Gross Horwitz was the favorite child of Professor and Mrs. Gross, who considered her intellect and attainments as something extraordinary. She is a most brilliant, versatile woman, and when she was but eighteen years old she contributed to the *North American Medico-Chirurgical Review* a learned and exhaustive review of a work on Cretinism, her effort eliciting great commendation from the medical profession, and adding much to her father's pride in her. Her devotion to his memory is singularly beautiful. I doubt whether there are on record greater instances of filial love than that shown by her. That length of days of sufficient magnitude may be granted unto her, so that she may see her noble and generous gift to one of the greatest of American medical colleges bear full fruitage, is the ardent wish of the present writer.

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