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Part I: Jefferson Medical College (1824-1895) --- Chapter 2: Growth and Consolidation (pages 46-104)

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Growth and Consolidation

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“Enter to grow in wisdom. Depart to serve mankind.” —modified from CHARLES W. ELIOT (1834–1926)

The Faculty of 1841–1856: An Illustrious Harmonious Team

After an uneventful graduation on March 6, 1841, the Board of Trustees set themselves to the task of organizing a new faculty. The stated goal was to obtain “the services of gentlemen who are known throughout this country as practical teachers; and who have likewise a widespread reputation as writers on different subjects of their profession; whose very name, indeed, would be a source of confidence, and a presage of success. With this view they have banished all personal feelings, and in the appointment of Professors have endeavored to keep singly in view that which appeared to them to be the most conducive to the stability, dignity, and reputation of the school.” Fifteen candidates were considered for the seven vacated Chairs. Surgery had become such an important subject that a division into one Chair of Principles and one Chair of Practice was contemplated. Dr. Jacob Randolph, son-in-law of Philip Syng Physick and a surgeon of the Pennsylvania Hospital noted for his skill in lithotomy, was elected to the latter Chair but declined because he could not reconcile a difference between principles and practice. This division would not occur until the resignation of Dr. Samuel D. Gross in 1882, but union into one Chair would resume with the appointment of Dr. John H. Gibbon, Jr., in 1936.

In April, 1841, the same Chairs were filled as follows: Robley Dunglison, M.D., Institutes of Medicine and Medical Jurisprudence; Robert M. Huston, M.D., Materia Medica and Therapeutics, and Dean; Joseph Pancoast, M.D., General, Descriptive, and Surgical Anatomy; John K. Mitchell, M.D., Practice of Medicine; Thomas D. Mütter, M.D., Principles and Practice of Surgery; Charles D. Meigs, M.D., Obstetrics and Diseases of Women and Children; and Franklin Bache, M.D., Chemistry (Figure 2-1).

The speed, thoroughness and wisdom of the Board of Trustees in organizing this truly prestigious faculty was an amazing accomplishment. It marked the entry of Jefferson into a second epoch of its history. The first epoch, from 1824 to 1841, witnessed contests for personal advantage, changes in the faculty, both voluntary and involuntary, and financial problems. The College suffered from poverty, infighting and harassment. The faculty of the second epoch brought fifteen years of unparalleled friendliness, cooperation, and progress. Jealousy was conspicuously absent. The combined outstanding achievements of each member lifted Jefferson to the forefront of medical schools of the country.

Throughout the courses of lectures, Jefferson
students had the additional opportunity to observe and participate in the care of patients in the General Dispensary attached to the College and to receive instruction in clinical medicine and surgery at the Blockley Almshouse (Philadelphia Hospital), Pennsylvania Hospital, and Wills Hospital for diseases of the eye. In the General Dispensary of the College where more than 1,000 cases were treated each year, the students were entrusted to patient care under the supervision of the professor who examined and prescribed. There likewise were opportunities in obstetrical practice. This was a strong point in Jefferson's training of excellent practical physicians for that era. Outside critics deprecated this type of pedagogy as superficial, ineffectual, and even misleading. They believed that single cases might slant the student's perception of disease in a tubular rather than wide-angle direction. Notwithstanding, the new faculty made the medical and surgical collegiate clinics a prominent feature of the weekly curriculum. Horse-drawn omnibuses carried students to the various clinics twice a week. Behavior at times was boisterous, and squabbles with students from the University of Pennsylvania occurred occasionally but never had serious consequences.

Medical instruction was significantly enhanced in this epoch by Jefferson's museum of anatomical, pathological, and obstetrical preparations. There also were drawings, plates, specimens, and reproductions for illustration in Materia Medica. Private collections from members of the faculty enriched the cabinets and displays.

John Hill Brinton, one of Jefferson's past historians, eulogized his teachers in The Faculty of 1841, delivered as a lecture before the Alumni Association on March 11, 1880. A few highlights from this classical treatise as well as individual memoirs provide information on the achievements that made these men so notable.

Robley Dunglison (1798–1869)

No one on the list was more outstanding than Dr. Robley Dunglison, whose academic prowess benefited Jefferson for the 32 years between 1836 and 1868. He was a physician to presidents (Jefferson and Madison), a giant author and editor, a "peacemaker," a "walking dictionary," the "Father of American Physiology," and Dean for 14 years (1854–1868) who signed thousands of Jefferson diplomas. Samuel D. Gross, himself one of Jefferson's great historians, wrote the definitive memoir of Dunglison's life and also included him in the biographical sketches of his contemporaries in his Autobiography. His role at Jefferson is further detailed in the section on the history of the Department of Physiology.

Dunglison was one of the most popular medical writers of his generation, sales of his books totaling more than 150,000 copies. Equally amazing were his contributions to lay journals on such topics as road making, English fashions in the seventeenth century, construction of words from sounds, English pronunciations, penitentiary discipline, universities, legends of the English lakes, Richard the Lion-hearted and Blondel, superstitions, Americanism, early German poetry, etymological history, Sanskrit language,
ancient and modern gymnasia, cradle of mankind, English orthoepy (correct diction), canals of the ancients, Jeffersoniana, biographical and obituary notes, and a voluminous dictionary for the blind in raised type.


**Robert M. Huston (1794–1864)**

Dr. Robert M. Huston had been previously appointed at the dissolution of the faculty of 1839 as Professor of Obstetrics, and then as Professor of Therapeutics and Materia Medica in 1841. A native Virginian, Huston had served during the War of 1812 as an Assistant Surgeon in the Army. As most Jefferson chairmen since its founding, he had studied at the University of Pennsylvania (1823–1825) and then entered into practice in Philadelphia. His lectures, read from manuscript, in which he warned against the heroic use and abuse of medicines, revealed conservatism. He did less writing than the other members of his faculty, but edited the American edition of Fleetwood Churchill's *Theory and Practice of Midwifery* in 1843, and was a coeditor of the *Medical Examiner* from 1844 to 1848. In 1850 he contributed notes to Churchill's textbook on *Diseases of Females*, and in the same year Churchill dedicated his book on *Diseases of Infants and Children* to Huston, Isaac Hays, and George Shattuck.

The faculty honored Huston by choosing him as Dean, which position he held much longer than anyone prior to that time (1841–1844). He was recognized for an excellent business ability that put the financial affairs of the College on a sound basis. In 1857 Huston resigned his Chair to become Emeritus.

**Joseph Pancoast (1805–1882)**

Dr. Joseph Pancoast, who had proven a worthy surgical successor to George McClellan in 1839, was elected to the Chair of Anatomy in the new faculty. The details of his success in these two Chairs are covered in the histories of the Departments of Surgery and Anatomy. Suffice it to say that his teaching of anatomy was medically and surgically oriented to the greatest practical advantage of his students. Pancoast's retirement in 1874 was finally accepted with the utmost reluctance by the Board of Trustees. His son, William H., succeeded him in the same Chair and was the first of three father-son chairmanships, the latter two being those of Gross and Gibbon. As Emeritus Professor, Pancoast inaugurated in 1877 the opening of the new detached first Jefferson Hospital in an eloquent address. The United States mint struck a medal in his honor in 1879 at the instigation of its director, James Pollock, and it is still listed in the latest national historic series (Figure 2-2).

**John Kearsley Mitchell (1793–1858)**

Dr. John Kearsley Mitchell, another Virginian, was the son and grandson of a physician. He in succession would also be the father and grandfather of physicians—S. Weir Mitchell and

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**FIG. 2-2. Medal in honor of Joseph Pancoast, M.D. struck by U.S. Mint in 1870.**
another John Kearsley Mitchell. As a matter of historic irony, he was a pupil of Nathaniel Chapman and while a student at the University of Pennsylvania had been a leader in the classroom opposition to the founding of a second medical school. It was he who clashed with fellow student Benjamin Rush Rhees over the matter. Mitchell made three voyages to China to improve his health, and by 1822 he was lecturing on Medical Chemistry in Chapman's summer school, the Medical Institute of Philadelphia. As a further stepping-stone in his appointment to Jefferson, Mitchell served as Professor of Chemistry in the Franklin Institute. His research in chemistry led to the discovery of solvents for rubber, tests for arsenic, and an apparatus for solidification of carbon dioxide.

After graduation from the University of Georgia in 1806 Meigs took courses in the lectures of the University of Pennsylvania, 1812–1813, and 1814–1815. Although he did not receive his medical degree until 1817, Meigs started practice in Augusta, Georgia, in 1815. Two years later he moved to Philadelphia, where he began writing for the North American Medical and Surgical Journal and engaged actively in the debates at the Philadelphia Medical Society. Initially he seems to have had an aversion to the practice of obstetrics, but with time he devoted himself largely to this branch. By 1831 he had translated, from the French, Velpeau's Treatise on Midwifery, and he published in 1838 his own work Philadelphia Practice of Midwifery. During Meigs' twenty-two years at Jefferson he translated the treatise of Colombat de L'Isere on Diseases and Hygiene of Females (1845) and published his own book on Females and Their Diseases (1848), Obstetrics, the Science and the Art (1849), Childbed Fevers (1854), and Acute and Chronic Diseases of the Neck of the Uterus (1854). His book on Certain Diseases of Young Children (1860) established him in medical history as a pioneer in pediatrics.

Meigs' lectures stressed that beyond the purely medical aspects, a physician should be a cultured man. The charm of his words, poetic expressions, quaint humor, and philosophic reasoning never failed to instruct or impress his students. He was an enemy of anesthesia for childbirth and stressed that ether givers practiced "criminal foolhardiness." Meigs and Dr. Hodge, from the University of Pennsylvania, strongly opposed the work of Oliver Wendell Holmes (1843) and Ignaz Philipp Semmelweiss (1848) on the contagiousness of puerperal fever. This attitude was defensible in terms of the era—Pasteur's works on fermentation (1857), spontaneous generation (1862), microorganisms in the virulent diseases of anthrax and chicken cholera (1877), and vaccination (1880) were to come later. Furthermore, Joseph Lister's epochal contribution (1867) On the Antiseptic Principle in the Practice of Surgery would have to go through fifteen years of trial, doubt, and ultimate belief. Although the achromatic microscope was perfected in 1830, its use in medicine at this time was mainly a curiosity.

Meigs was much interested in pulmonary embolism and gave lengthy discussion to it in his lectures. In 1860, at age 68, he resigned his Professorship to become Emeritus and retire to a country home in Delaware County. He died suddenly in 1869. Portraits of Meigs hang in the

Charles Delucena Meigs (1792–1869)

Charles Delucena Meigs was born into a family of culture and refinement in Bermuda, where his father was a Proctor in the English Courts of Admiralty. The father in 1796 was appointed Professor of Mathematics and Natural Philosophy at Yale College and in 1801 as President of the University of Georgia. Young Charles Meigs received a classical education enhanced by a Professor of French who taught him the language well. As a boy he also spent some time in the nearby wild Indian country inhabited by Cherokees.
halls of Jefferson and the College of Physicians of Philadelphia. His son, John Forsyth, and grandson, Arthur Vincent, followed in his footsteps, especially in pediatrics, but were not associated with Jefferson.

- **Franklin Bache (1792–1864)**

Dr. Franklin Bache was the great-grandson of Benjamin Franklin. Franklin's only daughter, Sarah, married an Englishman by the name of Richard Bache. Franklin Bache was born in Benjamin Franklin's Philadelphia home on the south side of Market Street between Third and Fourth. He obtained a B.A. degree from the University of Pennsylvania in 1810. Dr. Benjamin Rush accepted him for preceptorship in medicine, and Rush's son, Dr. James Rush, continued training young Bache after the senior Rush's death in 1813. During this period Bache also served as an Army Assistant Surgeon in the War of 1812. He received his M.D. degree from the University of Pennsylvania in 1814, engaged in private practice, and for many years was physician to the Old Walnut Street Prison and later to the Eastern Penitentiary.

From early youth Bache evinced a special proclivity for chemistry and the physical sciences. His contributions to this field and his career at Jefferson are covered in this book in the chapter on the history of the Department of Chemistry. Precision and austerity awed Bache's students, but an occasional touch of quaint humor enlivened his otherwise dull lectures. His best friend was Dr. George B. Wood of the University of Pennsylvania, with whom he coauthored the monumental *United States Dispensatory*, commonly known as the *Wood and Bache*. Bache retained his professorship until his death in 1864.

- **Thomas Dent Mutter (1811–1859)**

The last star in the galaxy of famous Professors in the famous 1841 faculty was Thomas Dent Mutter. He was born in Richmond, Virginia, and received his degree in medicine from the University of Pennsylvania in 1831. The following year Mutter mainly spent in Paris, at that time the medical center of the world, where he was influenced by the great surgeons, Dupuytren, Roux, Lisfranc and Velpeau. His special interest in plastic and orthopedic surgery was aroused, as well as his lifetime preference for French medical thinking. Mutter settled in Philadelphia in 1832 and immediately began teaching his newly acquired knowledge from abroad, at first in a private class for medical examinations. In 1833 he joined Dr. Paul Goddard in private instruction of a large class of medical students, and in 1835 was appointed Assistant Lecturer in Surgery at the Philadelphia Medical Institute, a summer school formed by Nathaniel Chapman in 1819. The Medical Institute was a vehicle for his academic development and a stage that focused on him as worthy of the Chair of Surgery at Jefferson. Mutter's success in that Chair is covered in the history of the Surgery Department. His eloquent lectures were illustrated with copies of diagrams, models, and specimens that constituted his personal museum.

Poor health forced Mutter to resign prematurely in 1856 at the age of 45. He donated his private museum to the College of Physicians of Philadelphia along with an endowment of $30,000 for a Lectureship on Surgical Pathology. His Museum and Lectureship are not only active until the present time, but have so overshadowed his career that many are surprised to learn that he ever was Professor of Surgery at Jefferson. This man, who so benefited the school as well as posterity, was the first in fifteen years of the solid faculty to die. He died in 1859, at age 48.

As with many past and later chairmen, Jefferson gained much strength from the University of Pennsylvania School of Medicine; albeit as an unwanted child, but with time the two would be regarded as sister institutions.

With appointment of the faculty of 1841 the number of students increased and would have been even greater had it not been that George McClellan’s new school of 1839 had subtracted somewhat from Jefferson’s attendance. The number for the session of 1840–1841 was 163; for 1841, an increase to 209; for 1842, 229; for 1843, 341; for 1844, 409; and for 1845, 469 students, the largest class in any institution of its kind in the United States. Graduates in 1843 numbered 47; in 1845 there were 116; and 170 in 1846. The College
Catalogue of Instruction for 1851 pointed with justifiable pride to the large number of students who, having taken at least one medical session at another school, came to Jefferson to study (162 of a student body of 516). In addition, approximately 100 graduates of other schools were in regular attendance at the lectures, many of them practitioners of mature age and experience. Some of these subjected themselves to fresh examinations and received a second medical diploma from Jefferson. Graduates instructed by this faculty who later became Chairmen at Jefferson were Benjamin Howard Rand (Class of 1848), Chemistry; James Aitken Meigs (1851), Institutes (Physiology); John Hill Brinton (1852), Practice of Surgery; and William Smith Forbes (1852), Anatomy.

The increasing attendance that developed within a few years of the appointment of this exceptional faculty taxed the physical capacity of the College

and necessitated considerable enlargements (Figure 2-3).

References


Fig. 2-3. Stone in Washington Monument, Washington, D.C., at the 280-foot landing donated by the Jefferson Class of 1853–1854. (Courtesy of U.S. Department of Interior, National Park Service.)
The Attached Miniature Hospital Ward (1843–1877): Renovation of Medical Hall (1846)

The use of collegiate clinics, which was a strong feature of the instruction at Jefferson, continued to flourish, especially with the expansion in surgery after 1841. Patients who underwent operations before students in the amphitheater of the College were sent home in a carriage, with further care by an assistant or the surgeon himself. Around 1843 the rooms over the shop of a stove-maker at the southwest corner of Tenth and Sansom Streets were rented for the stay of patients after more serious operations. Around 1846 the upper floors over a bottling establishment between the corner store and the College (Figure 2-4) were rented for the same purpose. Remodeling was inevitable with the increased demands, and eventuated in a meager but comfortable miniature hospital capable of accommodating about fifteen patients. The store ownership may have changed hands, for DaCosta refers to the little hospital “pleasantly placed over a cigar store and oyster saloon.”

A fireproof door connected this facility directly with the second-floor clinical amphitheater of the College where the surgery took place. This small hospital served from 1843 until 1877, when the new first detached Jefferson Medical College Hospital was opened for extended clinical purposes. The attached hospital facilities proved sufficient for the needs of the day, although it was occasionally necessary to rent the rooms from other nearby properties. The kitchen stove of the family below furnished much of the food for the patients, and nearby restaurants could be called upon. The medical students acted as clinical clerks and watched the patients' condition under the supervision of the surgeon or his assistant. A nurse on a weekly salary was employed later. Relays of students remained on day and night duty. The faculty provided them a midnight meal of oysters with steaming coffee to ensure their wakefulness, and other hearty refreshments with cigars might be their reward.

Within eight years of the 1838 Independent Charter and the enlargement of Medical Hall by Thomas Ustick Walter, another expansion of the College was required. A change of location for the school was considered, but the decision was made to stay and remodel. The architect chosen was the 26-year-old Napoleon LeBrun, who had trained under Walter. Even at this early age LeBrun was designing the interior of the Cathedral of Saints Peter and Paul at Eighteenth and Race, and his later work would include the Academy of Music in which Jefferson's graduation exercises would be held. A property to the north side of the College was acquired and cleared, allowing for a nine-foot extension of the north wall. The front was rebuilt in the form of a Roman temple with six Corinthian columns resting on a base seven feet above the street level and supporting a handsome pediment and entablature (Figure 2-4). The basement was faced with marble in which the grooves were deeply placed to make the segments more prominent. The upper facade was covered with a coating of cement painted a light stone color to match the base. An exterior connection to the remaining property fronting on Tenth Street was established by a railing and iron gateway. This passage led to the rear where the entrance and stairway to all the floors was relocated in a

![Fig. 2-4. The renovated Medical Hall with Grecian facade (1846). The upper floors of two stores became a miniature hospital ward.](image-url)
backward extension of the original building. The remodeled building was considered “an ornament to the city.”

On the first floor was a lecture hall in which the seating capacity was increased from 450 to 600. Special attention was paid to lighting, ventilation, and acoustics considered optimal for that time. The upper amphitheater, or “pit,” was located on the second and third floors, in which the skylight provided illumination for surgery. It likewise was enlarged to accommodate 600 students. The museum at the rear of the second floor provided ample materials for osseous, neurologic, vascular, muscular, ligamentous, and other preparations for anatomical demonstrations. It also contained a large number of wet preparations relating to pathology, obstetrics, and surgery. An extensive collection of diseased bones, calculi, models in wood, plaster, and wax, together with a series of paintings and engravings of healthy and morbid organs, fractures, dislocations, and tumors completed this section. The anatomical dissecting room was over the museum on the third story and pronounced the very best for its purpose. Convenient rooms for the faculty and private chambers for the professors and students were placed in the rear of the stairways of all three floors.

It was in the upper amphitheater that on December 23, 1846, Thomas Dent Mütter was the first in Philadelphia to demonstrate the anesthetic power of sulphuric ether.¹ The operation was for the removal of a tumor from the cheek, possibly a sebaceous cyst. This epoch-making discovery which became a permanent part of operative surgery had only been demonstrated by Morton in Boston on November 19, 1846. Tragic squabbles over the legal rights led to dentist Horace Wells’ suicide in 1848, dentist William T.G. Morton’s death in 1868 from apoplexy while enraged at learning of attempts to deprive him of the glory of his discovery, and chemist Charles T. Jackson’s insanity and death in 1880.² Ironically, Edward R. Squibb (Jefferson graduate in the Class of 1845) made his fortune in the manufacture of ether.

Surgery at midcentury was performed only for wounds and abscesses, amputations, removal of superficial tumors and bladder stones, ligation for aneurysm, and trephination of the skull for depressed fractures or extradural abscess. Appendicitis was called peritonitis and patients were watched to die, although some did recover. Abdominal surgery, if performed at all, might be for wounds, intestinal obstruction, strangulated hernia, or large ovarian tumors. Radical cure for hernia was more than a generation away. Chest surgery did not exist except for empyema, and drainage was so often fatal that many clinicians declined to recommend it. Catgut ligatures were not used. Almost all wounds suppurated. The mortality from compound fractures was 60 to 80 percent. Wound healing after breast amputation required three to six months and did not result in cure. Limb amputations required several months. Hemostats were not used and bleeding to death on the operating table was not unusual. Operating lights were undreamed of, and Edison’s incandescent lamp would not be invented until 1879. Ether and chloroform were distrusted novelties. Bacteriology was unknown. Cerebral localization was not imagined, and it was believed that the brain, like the liver, functioned as a whole.

The physician of 1849 was without the ophthalmoscope, practical laryngoscope, endoscope, cystoscope, or X-rays. Hypodermic medication was yet to be devised. Therapeutics was empirical. Bloodletting was still employed, although not as frequently. Huge doses of purgatives were administered. Calomel was given as a general cure-all. There were only a few competent dentists, and the Pennsylvania Dental College was not to open until 1850. There was not a single woman physician, and the Woman’s Medical College was not founded until 1850.

The American Medical Association was organized in 1847, with Dr. Nathaniel Chapman elected by acclamation as first President. The Committee on Constitution for the Philadelphia County Medical Society met on January 16, 1848, and Dr. Samuel Jackson, Professor of Institutes of Medicine at the University of Pennsylvania, was its first President. By 1853 it had 220 members; and fifty years later it would have 700. Prominent Jeffersonians who later in the century would become Presidents were Samuel D. Gross, James A. Meigs, Washington L. Atlee, Richard J. Levis, and William W. Keen. The profession in 1849 was
opposed to women physicians and the County Medical Society recommended not to consult with them. The first woman would not be elected into membership until 1888.

Philadelphia at this time was the medical center of the country. An ambitious physician could regard a Chair in one of its Colleges as the crowning point of his career. In 1840 the University of Pennsylvania had 308 students, Jefferson Medical College had 480, Philadelphia College of Medicine, 91, Pennsylvania Medical College, 90, and the Franklin Medical College, about 40. The three last-named schools have not survived.

The city proper lay between the Delaware and the Schuylkill Rivers and between Vine and South Streets, with a population of 120,000. The various adjacent districts and townships such as the Northern Liberties, Frankford, Kensington, Southwark, Moyamensing, West Philadelphia, and Germantown swelled the total to 400,000. Philadelphia was quiet and unostentatious, but nurtured a highly cultured society. Houses of the affluent were built of brick with white marble facings. The rear yards were grass covered. Shutters were closed at sundown. Each front door contained a plate with the owner's name. Outside steps and pavements were washed daily. The pavements were of brick and the streets of cobblestones. Houses of the poor were of frame and fires were frequent. There were no street cars, but horse-drawn carriages and omnibuses served for transportation.

There were 30 states in the Union, Wisconsin having most recently been admitted. The territories of California and New Mexico had been added by the Mexican War. Famine in Ireland and political discontent in European countries were drawing tens of thousands of immigrants to America. Gold had been discovered in California and 200,000 hopeful people were heading west for quick fortunes. Locomotives were beginning to link cities, but in many sections of the country travel was by foot, emigrant wagon, stagecoach, or canal boat. Slavery and antislavery forces had begun to clash and already were threatening to split the nation.

In the currents of this local and national climate the famous faculty of 1841 remained unbroken until the 1866 resignation of Professor Thomas Dent Mütter, who was in poor health. For all his brilliant and beneficent qualities, he was but the torchbearer for the arrival of the "greatest American surgeon of his time," Dr. Samuel D. Gross.

References
5. Idem 4, p. 599.


The first epoch in Jefferson's history (1824–1841) was a struggle for survival. The second (1841–1866) was an epoch of achievement due to the unbroken faculty of 1841. The third epoch (1856–1882) was one of prestige that encompassed the Professorship of Samuel D. Gross (Figure 2-5). He, as a son of Jefferson Medical College in the class of 1828, was the first alumnus to be called to a Professorship in his alma mater. Most of the previous professors had been graduates of the University of Pennsylvania. In a plenitude of superb attributes Gross brought lasting fame to Jefferson and worldwide recognition to American medicine as a whole. An unflagging intellectual energy placed him in the undisputed position of leader of academic surgery of his era and served him well as teacher, investigator, writer, anatomist, pathologist, clinician, and surgeon. Numerous accounts have eulogized his life, but the chronicle was best told by Gross himself in his two-volume *Autobiography* of more than 1,000 pages.1-3 Lionized by the alumni of Jefferson, honored at home and abroad, immortalized in art and sculpture, and regarded as the "Emperor of
Growth and Consolidation • 55

subsequently studied the true German language, which left him with a slight foreign accent for the rest of his life.

Philip and Juliana Gross had six children of which Samuel David was the fifth. Of his three brothers, one, Joseph B., became a minister in the Lutheran Church. The mother was a devoted Lutheran, but the father had no strong religious orientation. Gross ascribed his strong moral character to the good training by his mother. Following a long illness, his father died in 1813 at age 56 from cerebral apoplexy when Samuel was nine. The mother lived to be 86 and died in 1853 while Gross was still at Louisville, Kentucky.

Gross enjoyed the usual pleasures of a country boy, such as hunting birds and squirrels with a blow gun, searching for beehives, and pitching quoits or pennies—he believed that tossing pennies developed coordination of eye and hand that aided his surgery of later years. His fondness for flowers throughout life was later shared by Grace Revere, who married his son Samuel W.

Although Gross acquired the nickname "Judge" in childhood, he recognized the desire to become a doctor at the age of six. From then on he considered himself to be a "born doctor." He began public school in a log cabin. There was but a single class for boys and girls of all ages. The teacher was a tyrant who used the rod freely. Gross preferred languages to mathematics and geometry. He realized his education was desultory, but improved it by avid reading of the Bible, Aesop's Fables, almanacs, geography, and history. To this he added extra hours for the study of English, German, and Latin. By the age of 17 he considered himself ready to study medicine.

The custom was to read medicine in the office of a preceptor physician. The books were usually scant and obsolete. Gross was quickly dissatisfied with his first two preceptors but then stayed with Dr. Joseph K. Swift of Easton, who was a graduate of the University of Pennsylvania. He studied anatomy from a skeleton with use of Pyfe's Anatomy. At this juncture Gross determined to prepare himself for a first-class medical career by attending the famous Academy at Lawrenceville, New Jersey. There he carefully studied Latin as well as Greek from a grammar written in Latin. He learned sufficient French to enable him to translate the texts into English, and a smattering of Italian. Considering himself to be properly prepared he resumed his preceptor studies with Dr. Swift with such zeal that his
health broke down. For a remedy he rode by horseback to Niagara Falls with a brother. This six weeks was well spent, for he was restored to a vigorous state of health that lasted until he was 77.

Gross left for Philadelphia in October 1826, with letters of recommendation from Dr. Swift to Professors Dewees and Horner of the University of Pennsylvania. The brilliant achievements of Dr. George McClellan were of such repute, however, that he disregarded the wishes of his preceptor and enlisted as McClellan's private pupil. Several weeks later he matriculated in the “new school” as it was called. Gross never returned to his preceptor’s office in Easton and believed he had given Dr. Swift offense, although he had paid his fee in full.

After adjusting to the revolting sight and odor of the dissecting room, Gross became intrigued by the dissections and made a special study of practical anatomy. Beyond the regular course he spent an extra month dissecting in the spring and fall. In addition to surgical anatomy he developed a deep interest in the structure of the brain and distribution of the peripheral and sympathetic nerves.

As a Jefferson student attending the renovated Prune Street Tivoli Theater, Gross seldom retired before a late hour. In his words, he became “... a stranger to all amusements, and medicine was the goddess of my idolatry.” His Professors were George McClellan in Surgery, Nathan Smith in Anatomy, John Eberle in Medicine, William Barton in Materia Medica, Jacob Green in Chemistry, John Barnes in Obstetrics and Benjamin Rush Rhees in Institutes and Medical Jurisprudence. Gross’s opinion of his teachers after two courses of lectures was as follows:

“They were perhaps, in the main, as competent instructors as any similar number of teachers in the schools of this country at that period; for, after all, everything depends upon the student himself, his industry, his habits of attention, his culture, and his natural capacity. His knowledge must come chiefly through his own personal exertion. Lectures, however able or erudite, are only aids. They never can make a good physician or a great man out of a dunce.”

Gross received his M.D. degree in 1828 in a class of 27; his graduation thesis was The Nature and Treatment of Cataract. The exercises were held in the spring for the last time in the Tivoli Theater Building. Little could Gross foretell that 28 years later he would return to his alma mater and become recognized as “the greatest American surgeon of his time.”

Shortly after graduation Gross married Louisa Ann Weissel, a widow 21 years of age with a child that subsequently died. Deeply in love, they consummated nearly 48 years of happy family life. Of their eight children, two boys and two girls survived into adulthood, and they inherited the intellectual energy of their father. Samuel W. succeeded the elder Gross in 1882 as Professor of the Principles of Surgery and Clinical Surgery. The other son, A. Haller, matriculated at Jefferson for one year but abandoned medicine to become a prominent member of the Philadelphia Bar. Maria Rives Gross married Orville Horwitz, a Baltimore lawyer, and was a distinguished litterateur, linguist, and musician. She endowed the first Chair of Surgery at Jefferson in 1910 in honor of her father. Louisa Gross married Benjamin Horwitz, the brother of Orville, also a Baltimore lawyer. The Louisa Gross Horwitz Prize of Columbia University was endowed in her honor by her son, S. Gross Horwitz, the grandson of Samuel D. Gross. It has been awarded annually as an honorarium of $25,000 with a citation at a special presentation for outstanding basic research in the fields of biology or biochemistry. Of the 18 recipients between 1967 and 1984, eight have subsequently received Nobel prizes.

Gross decided to practice in Philadelphia after graduation and opened his office at the corner of Fifth and Library Streets, opposite Independence Square. The first year he earned only $300, which scarcely covered expenses. During this lean time he translated Bayle and Holland’s General Anatomy and Hatin’s Manual of Practical Obstetrics from the French. The second year he continued translating foreign texts with Tavernier’s Operative Surgery from French and Hildenbrand’s Treatise on Contagious Typhus from German. His knowledge of languages gained him extra funds, initiated his academic reputation, and aroused a desire to write books on his own. He never again made translations because his conviction was that America should have its own medical texts. The financial return from his practice and literary work...
was so poor for the second year that his only alternative was to try for success in his native Easton.

In April, 1830, he opened an office opposite that of his old preceptor, Dr. Swift. A respectable practice developed promptly, as well as a reputation as a scientific physician. In 1832 an epidemic of Asiatic cholera broke out with extreme virulence in New York City, just 80 miles away from Easton. Gross was appointed by his town council to visit New York to possibly learn how to aid his fellow citizens. He visited the hospitals and charnel houses during a hot week in July. Fortunately, Gross did not contract the scourge, nor did it strike Easton.

Gross erected a small stone building in the garden at the rear of his Easton house for anatomic dissection and animal experimentation. Stray dogs and cats were absorbed into this laboratory and he would occasionally transfer a cadaver from Philadelphia by horse and buggy. At this time Gross was working on a book of descriptive anatomy in which he intended to change the nomenclature from Latin to English. Despite the spending of his leisure time in dissection and composition, the book was not completed. On the other hand, within three months of his arrival in Easton he readied his first original text, *Anatomy, Physiology, and Diseases of the Bones and Joints*. This octavo volume of almost 400 pages sold 2,000 copies in less than four years, but he never received a penny of remuneration. In his *Autobiography* he states: "I went little into society and took hardly any recreation. I labored day and night under the stimulus both of ambition and of poverty."

Gross struggled in Philadelphia against debt and in Easton against mediocrity. Like his role model, Dr. George McClellan, he longed to teach anatomy. In the spring of 1833 he made this desire known to his former Jefferson Professor of Medicine, Dr. John Eberle, who was now lecturing in the Medical College of Ohio at Cincinnati. Through this connection he obtained an appointment as Demonstrator of Anatomy by October of that year. He taught for two years in this capacity. By 1835 the Medical Department of Cincinnati College was organized to include a Chair of Pathological Anatomy. After unanimous appointment to that Chair by the Trustees, Gross delivered the first systematic course of lectures on morbid anatomy ever given in the United States. The teaching, dissecting, reading, and visiting of the slaughterhouses provided material for his next textbook, *Elements of Pathological Anatomy*, which was published in 1838. In two octavo volumes of over 500 pages each, with numerous woodcuts and several colored engravings, it represented the first systematic work on this subject ever produced on either side of the Atlantic. A second edition, much enlarged and extensively revised, appeared in 1845. It was a single octavo volume of 822 pages with colored engravings, 252 woodcuts and marginal references. Dr. Rudolf Virchow, the famed German pathologist, declared his admiration for the book at a dinner given for Dr. Gross in Berlin in 1868. The Imperial Royal Society of Vienna recognized its merit by making him an honorary member.

The closing of Cincinnati College in 1839 only helped to broaden Gross’s career. He was offered the Chair of Anatomy at the University of Louisiana as well as the Professorship of Medicine at the University of Virginia. His ultimate goal of a Professorship of Surgery was realized by his acceptance of the Chair at the Louisville Medical Institute, later the University of Louisville. He made this move in October 1840, when he was 35 years old.

Gross’s Louisville years, 1840 to 1856, were fruitful and happy except for a temporary interruption in 1850. A controversy regarding the government of the Medical School led Gross in that year to accept the Chair of Surgery at the University of New York just vacated by the retirement of the prestigious Valentine Mott (1787–1865). The latter was one of the most eminent physicians of the first half of the nineteenth century. Mott’s ligations of major arteries for aneurysmal disease, performed before the discovery of anesthesia, antisepsis, and use of transfusions, subsequently earned him the title "Father of American Vascular Surgery." This turned out to be a sabbatical year in that it relieved Gross of his large private practice, provided time to write most of two books, and allowed visits to surgical clinics, one of which was to Mütter’s at Jefferson. After Gross served for only one academic session the management of the Louisville school was corrected. At the urgent
request of his old colleagues he returned to his former post. His successor, Dr. Paul F. Eve, graciously stepped aside for him and the New York Chair was taken by Dr. Alfred C. Post.

In Louisville, Gross was beloved, trusted, and popular with patients, colleagues, and nonprofessional friends. His spacious home provided traditional southern hospitality for distinguished American and foreign guests in medicine, science, law, arts, literature, politics, and the military. His charming wife kept an ample table ready for reunions in which “the strains of music mingled with flashes of wit and humor.”

By 1855, at the age of 50, Gross had planned to spend the rest of his days in Louisville. Fate decreed otherwise, for Philadelphia called that year from the University of Pennsylvania and the following year from his Jefferson alma mater.

In 1855, Dr. Rene LaRoche, a member of the Board of Trustees of the University of Pennsylvania, solicited Gross to allow his name to be placed as a candidate for the Chair of Surgery vacated by the resignation of Dr. William Gibson (1788–1868), a former bitter rival of Gross’s teacher, George McClellan. Gross held America’s oldest medical school in the highest esteem but could not persuade himself to pursue the offer, especially since the income would be less than he was receiving at Louisville. Instead, he wrote, at the request of Dr. Agnew D. Hays, a warm testimonial in favor of Dr. Henry H. Smith, who was elected. Agnew (1818–1892), who himself in 1877 succeeded to the Chair and in 1877 became the first John Rhea Barton Professor of Surgery, remained one of Gross’s warmest friends and served as chairman of a complimentary dinner given in honor of Gross at the St. George Hotel (Bellevue) in Philadelphia in April 1879. The University conferred an LL.D. degree on Gross in 1884, although he was on his deathbed. With the resignation in 1856 of Professor Thomas Dent Mütter due to poor health, the Board of Trustees of Jefferson turned unanimously to Gross as successor. He was taken by surprise but much flattered by the election, which occurred in May. His family was averse to leaving Louisville, so before accepting, Gross visited Philadelphia to ascertain the state of affairs at Jefferson. He found the College in an eminently flourishing condition and therefore accepted the Chair without further hesitation.

Gross and his family on arrival in Philadelphia in September, 1856, rented Mütter’s furnished house at the southeast corner of Eleventh and Walnut Streets, now the location of the Martin Residence Building. For their first dinner Dr. Dunglison sent a bottle of champagne, a beverage heartily approved by Gross. Rent was continued annually for two years at $2,000, at the end of which time Gross purchased the property for $25,000 cash. He was obliged to spend nearly $2,000 for repairs. At his death in 1884 the house passed into other ownership, since his son, Dr. Samuel W., had previously purchased a house at 1112 Walnut Street for $39,000. Dr. Joe Henry Coley (Jefferson, 1934) witnessed the demolition of the house in the early 1930s and regretted not having saved a brick as a relic for the Jefferson archives.

In his inaugural address of the opening of the 1856–1857 session of the College, Gross concluded: “Whatever of life, and of health, and of strength remains to me, I hereby, in the presence of Almighty God and of the large assemblage dedicate to the cause of my Alma Mater, to the interests of Medical Science, and to the good of my fellow-creatures.” For the next 26 years of his active Chairmanship no pledge was better kept.

As Gross was about to go before his class on the day before Christmas of the first year, the janitor handed him a telegram that read: “The University (of Louisville) was totally consumed by fire early this morning, including all your books and minerals.” This represented a loss of about 2,000 books, which contained the most extensive collection on the genitourinary organs ever assembled in this country. They were not insured. Another 2,000 books had fortunately been previously brought to Philadelphia.

In coming to Jefferson as the fourth Chairman of Surgery, Gross had to compete with the charm, teaching, and surgical skill for which the idolized Mütter had acquired an enviable reputation. Gross immediately commanded a respect and popularity with the students that exceeded Mütter’s zenith. A growing fame of the Gross Clinic attracted visitors from home and abroad. The class that winter was very large, such that the income for each Chair exceeded $5,000. From then on until the start of the Civil War the number of students varied between 475 and 631.
During Gross’s second year at Jefferson (1857–1858) there were four medical schools in Philadelphia, with a total of 1,139 students. Jefferson had 501, the University of Pennsylvania 435, Pennsylvania College (founded by George McClellan in 1839) 140, and the Philadelphia College, 63. The total number of graduates at that period from these institutions was 407, with distribution in the same order: 209, 145, 35, and 18. The last two institutions would merge and become extinct by attrition during the Civil War.

It was customary at this time for each professor to deliver an introductory lecture at the opening session of his course, with the result that the first week was an academic waste to the students. Gross felt that only one general introductory was sufficient and that the didactic courses should commence the next day. With repeated interviews between Jefferson and the University of Pennsylvania, he was able after four years to effect this change for the two institutions. Gross declared: “It was almost as hard to move the two Faculties of the schools in this matter as it would be for a regiment of soldiers to move the rock of Gibraltar, so completely steeped were they in fogism.”

The phenomenal success of Gross as teacher, author, surgeon, investigator, historian, and founder of societies will be detailed in the history of the Department of Surgery. The “Emperor of Surgery” or “Nestor of Surgery,” as he is frequently remembered, retired in 1882 and died two years later. His Professorship was divided between two successors, which elicited the comment that “it took two pegs to fill one hole.” As with the replacement of Mütter by Gross, the withdrawal or death of the other members of the faculty of 1844 did not weaken the school. The real threat was the Civil War.

The Ante-Bellum Years: Philadelphia circa 1860

The progress and fame of Jefferson Medical College continued even as resignation and death gradually claimed the seven members of the unbroken faculty of 1844–1856. The resignation of Mütter in 1856 and replacement by Gross in surgery was followed by the retirement of Huston in 1857 and replacement by Thomas Duché Mitchell in Materia Medica and Therapeutics. (Mitchell was not related to Dr. John Kearsley Mitchell, Professor of Medicine, who died the following year.)

Thomas Duché Mitchell (1791–1865)

Thomas Duché Mitchell was 66 years of age when appointed to the Professorship (Figure 2–6). He came from an old Philadelphia family, received his early education in the Quaker schools, served a preceptorship with Dr. Joseph Parrish—followed by six months in a drug store and chemical laboratory of Dr. Adam Seybert—and obtained his M.D. degree from the University of Pennsylvania in 1812. Mitchell immediately started an academic career as Instructor in Vegetable and

References
Animal Physiology in St. John’s College on Race Street. The following year he was appointed Lazaretto Physician to the pest house on the west bank of the mouth of the Schuylkill River. His reputation as a medical writer started in 1819 when he published a volume on medical chemistry.

From 1822 to 1831 Mitchell engaged in medical practice in Philadelphia and its suburbs, established the Total Abstinence Society, in which even the use of alcohol in tinctures was deprecated, and was honored by Princeton with the Master’s degree in 1830. In 1831 he joined Drs. Drake and Eberle in Cincinnati, taking the Chair of Chemistry. In 1832 he published an octavo volume of 553 pages entitled Chemical Philosophy and, subsequently, a volume on Hints to Students, and became coeditor of the Western Medical Gazette and editor of the Journal of Medical and Associate Sciences. From 1837 to 1847, Mitchell filled the Chairs of Materia Medica and Chemistry in Transylvania University, Lexington, Kentucky.

Mitchell returned in 1847 to his native Philadelphia for the Chair of Theory and Practice of Medicine in the recently organized Philadelphia College of Medicine, where he remained for the next ten years. In 1850 he published an octavo volume of 750 pages on Materia Medica as well as an edition of Eberle on the Diseases of Children, to which he contributed 200 pages of notes. His manuscript of 600 pages on the Fevers of the United States was never published. He wrote the biography of Dr. John Eberle for Samuel D. Gross’s American Medical Biography, and spent the last eight years of his life at Jefferson as a clear and impressive lecturer, a classical and scientific scholar, and a highly respected gentleman.

Samuel Henry Dickson (1798–1872)

The Chair vacated by the death of John Kearsley Mitchell in 1858 was also taken by a man well advanced in years, Samuel Henry Dickson, age 60 (Figure 2-7). Dickson was born in Charleston,
South Carolina, and was graduated from Yale College in 1814. He engaged in a preceptorship in his native city and practiced medicine without a degree during an outbreak of yellow fever there. He subsequently obtained his M.D. degree from the University of Pennsylvania in 1819 and returned to Charleston. In 1824, at the time George McClellan was founding Jefferson Medical College, Dickson joined Drs. David Ramsay and H.R. Frost in organizing the Charleston Medical College, which in 1833 was reorganized as the Medical College of South Carolina. There for 22 years he occupied the Chair of Institutes and Practice of Medicine. In 1847 Dickson replaced Dr. John Revere as Professor of Theory and Practice of Medicine at the University of the City of New York, but returned to Charleston three years later in 1850. The New York University conferred an honorary LL.D. degree on him the following year. After conducting consultation services until 1858, Dickson was called to Jefferson for the Chair of Theory and Practice of Medicine, which he filled for the next 14 years until his death at age 73. Dr. Dickson was a man of ability and influence in medical, literary, and philanthropic circles. He was a superb orator in medicine, philosophy, and poetry. His writings, which appeared in the Southern Quarterly Review, Charleston, and in the American Journal of the Medical Sciences, were elegant in style and almost poetic. He reported upon the yellow fever in Charleston in 1817 and 1827, dengue fever in 1828, and heat stroke in 1829. His books were standards in their day and included Manual of Pathology and Practice of Medicine, Essays on Pathology and Therapeutics, and Elements of Medicine.

William Valentine Keating
(1823–1894)

Charles Delucena Meigs, Professor of Obstetrics and Diseases of Women and Children, who retired in 1860, was replaced by William Valentine Keating (1823–1894). Keating, only 37 years old, was compelled to relinquish his position within the year because of poor health. He was a native Philadelphian who studied under the preceptorship of Dr. Charles Delucena Meigs and graduated in medicine from the University of Pennsylvania in 1844. Keating’s practice in Philadelphia gave special attention to obstetrics. He lectured in the Philadelphia Association for Medical Instruction and Agnew D. Hays Philadelphia School of Anatomy. In 1856 he edited Churchill’s Diseases of Children and Ramsbotham’s Obstetrics.

While abroad in Paris in 1861 in an effort to regain his health, Keating’s trunk containing an original manuscript on obstetrics that represented several years of labor was stolen from a railway station and was irretrievably lost. Despite his misfortunes, the rest abroad restored his health and he returned during the Civil War with renewed vigor to serve as surgeon on the staff of the Satterlee Army Hospital in Philadelphia and also in the post of Medical Director of the Broad and Cherry Street Hospital. He was one of the founders of St. Joseph’s Hospital in 1844, and at the time of his death at age 71 from a heart attack was the Medical Director of St. Joseph’s and St. Agnes’s Hospitals. Though Dr. Keating showed every indication of promise as the successor to Dr. Charles Meigs, he was replaced by Dr. Ellerslie Wallace in 1862.

The Philadelphia census of 1860 recorded a population of 568,000. The city was most densely settled along the Delaware River, but the citizens were dispersing west of Broad Street. The ratio of physicians to the population was increasing. The private medical schools of Philadelphia had proven so attractive that by 1860 there were 51 regular physicians for the population of over one-half million. The medical organizations consisted of the College of Physicians, the Philadelphia County Medical Society, the Pathological Society, and the Northern Medical Association. In addition to the Pennsylvania and Philadelphia Hospital (Blockley) were the Charity Hospital, St. Joseph’s, the Protestant Episcopal, Children’s, the Philadelphia Lying-In Charity, the Wills, the Preston Retreat, and the Howard. The two main medical schools were the University of Pennsylvania on Ninth Street and Jefferson on Tenth, whereas the remaining similar institutions were concluding their final struggle for existence. Philadelphia was the great medical center of the country, and a large student population was mainly from the South. Abraham Lincoln was elected president in 1860, and the Confederacy formed almost before the North could realize what was happening.
Exodus of Southern Students: Hunter H. McGuire, M.D., LL.D.

In 1859–1860 the matriculates at Jefferson Medical College numbered 630, exceeding all records of medical schools of any country or time. The University of Pennsylvania also attained its largest enrollment in that year with an attendance of 528. This total of 1158, plus students from the other medical schools and private students not yet enrolled, probably brought the number of Philadelphia students to about 1300. Just two years earlier, the enrollment for Jefferson had been 501; for the University of Pennsylvania, 435; for the Pennsylvania College (McClellan’s second school), 140; and the Philadelphia College, 63. Jefferson’s gain in students was chiefly from the country at large, whereas gain at the University was mainly from the state of Pennsylvania. With the largest proportion of out-of-state students coming from the South, it is readily apparent that Jefferson occupied the more vulnerable position in terms of losing students in the Civil War.

Although most of the Jefferson professors had been graduates of the University of Pennsylvania, some of its most able teachers were also from the South and West, which explains the large number of students from these regions. In the record year of 630 students enrolled, the largest state contributor was still Pennsylvania, but with only 120. Then came Virginia, with 94; Alabama, with 50; Mississippi, 49; Georgia and North Carolina, 44 each; South Carolina, 36; Tennessee, 35; Kentucky, 22; and Maryland, 15. The students from Southern states, not counting states with fewer than 15, totaled 389—that nearly 400 of the 630 were from the South.

Polarization of Northern and Southern attitudes was enhanced by press and pulpit. In this crucial atmosphere, John Brown marched into Harpers Ferry on October 17, 1859, with a body of armed men to instigate insurrection of the slaves against their masters. This rabid abolitionist was captured by federal troops, turned over to Virginia authorities, tried, and hung in Charles Town, Virginia, on December 2, 1859.

As part of a public funeral through some of the principal cities, John Brown’s body was paraded through Philadelphia. Animosity flared into fights between the Southern medical students and Northern men on the streets. Some were injured and others put in jail. In this intolerable situation Drs. Hunter McGuire (Figure 2-8) and Robert Luckett called a meeting of their “quiz class” to discuss appropriate action on Tuesday, December 20, 1859, at 9 A.M. at the Assembly Building at the corner of Tenth and Chestnut Streets. This
popular “quiz class” was patronized by both Jefferson and University of Pennsylvania students, and the Assembly Building was a stone’s throw from both institutions. With nearly all the Southern students present, a telegram from Governor Wise of Virginia was read, offering cordial welcome to all who would attend the College in Richmond, give credit for all previous work, and pay the expenses of transportation.

Over 200 students, led in a body by Dr. McGuire, left on the evening of December 23rd. After an enthusiastic reception in Richmond, with a parade, speeches, and banquet, 140 students matriculated at the Medical College of Virginia, 56 of whom graduated in March 1860. The remaining students went to Atlanta and schools further south. The day before the great exodus Dr. Samuel D. Gross urged the importance of remaining until the end of the academic session “but, although my address was well received, the most profound silence prevailed during the delivery.”

Dr. Hunter H. McGuire (1835–1900)

Dr. Hunter Holmes McGuire was a man of highest integrity and motivated only by the most genuine loyalty to his native state of Virginia. His father, Dr. Hugh Holmes McGuire (1801–1873), was a graduate of the University of Pennsylvania, one of the first surgeons in the country to operate for clubfoot, President of the American Society of Surgeons, one of the founders of the Winchester Medical College, and an enlisted surgeon in the Confederate Army of Northern Virginia at the age of 60.

After preliminary education at Winchester Academy in Virginia, Hunter McGuire graduated in 1855 from the Winchester Medical College in which his father was the Professor of Surgery. To the surprise of his family and friends he decided to come to Philadelphia for wider knowledge and experience. He matriculated at Jefferson Medical College for the 1855–1856 session but accepted an invitation from Drs. Robert Luckett and Joseph Pancoast to join in the operation of a “quiz class.” Because of the paucity of adequate textbooks and the limited didactic lectures of the Professors of the Medical Colleges, the students flocked to “quiz masters” to keep up with their studies and accustom themselves to examination questions. Many let their hair grow long, wore black slouch hats, and even carried bowie knives. Dr. McGuire became very popular as their advisor and leader. He even matriculated once more at Jefferson, but in the fateful session of 1859–1860; thus, despite two abortive matriculations at Jefferson he did not obtain the M.D. degree there. Dr. McGuire did matriculate in the Medical College of Virginia along with the students he brought from Philadelphia, and he received his M.D. degree for the second time at the end of the session in the spring of 1860. He then went to New Orleans where he established another “quiz class” for the students of Tulane University.

At the imminent secession of Virginia, McGuire at age 26 returned to Winchester, volunteered for army duty, and was promptly commissioned as Medical Director of the Army of the Shenandoah with General Thomas J. (“Stonewall”) Jackson. He amputated Jackson’s arm after the famous general was mortally wounded through a tragic mistake at Chancellorsville when the bullets of his own men felled him. Dr. McGuire was the first to advocate and practice the release of captured medical officers. He was with General Lee at Appomattox in the surrender.

In July, 1865, Dr. McGuire was elected Professor of Surgery in the Medical College of Virginia, which had been the only medical school in the Confederacy to continue operation throughout the war. In 1866 he married Mary Stuart, the daughter of a distinguished Virginia statesman. He hoped to support his wife on a salary from the Medical College of Virginia, but during the 12 years he taught in that institution he never received any. In addition to extensive private practice in Richmond, Dr. McGuire established a Retreat for the Sick and organized St. Luke’s Home for the Sick, which in 1886 developed a training school for nurses, the second one south of the Mason–Dixon line (there was one at New Orleans). Old Confederate soldiers were treated in this hospital without charge.

McGuire’s literary contributions included reports of cases, clinical lectures, scientific papers, articles for standard systems and encyclopedias of medicine and surgery, presidential addresses to regional, state, and national medical societies, and
reports to Confederate veteran associations with lectures on Stonewall Jackson. He was President of the American Surgical Association in 1887 and of the American Medical Association in 1893.

In 1887 the University of North Carolina conferred on McGuire an honorary LL.D. degree. According to Dr. John Chalmers DaCosta, Dr. McGuire lectured in the pit of the amphitheater of the first detached Jefferson Hospital of 1877. He was awarded an LL.D. degree from Jefferson in 1888.

Friendship and affection existed between Drs. McGuire and William Osler for many years. Dr. Osler visited him during his last illness, a stroke at age 65, and was one of the honorary pallbearers at the funeral. McGuire's monument is in the Capitol Square of Richmond.

References

Civil War Years (1861–1865): Jefferson Contributions

Although the triumvirate of Gross, Dunglison, and Pancoast convinced some students from the South to stay at Jefferson, more than 200 defected. The record enrollment of 630 in 1860 fell to 433 in 1861 and to 238 in 1862. This drop was also occasioned by Northern students who enlisted in the Union Army. Despite these adverse circumstances student enrollment increased to 275 in 1863, to 351 in 1864, and to 380 in 1865. Closing of the College was not threatened nor considered by the Board of Trustees or the Faculty. Robley Dunglison, one of Jefferson's greatest Deans, continued to preside throughout this period.

Ellerslie Wallace (1818–1885)

Only two replacements in the major faculty were required during these critical years, despite the enormous demands of the war. The first, in 1862, occurred in Obstetrics by the retirement of Charles Delucena Meigs in 1861 and the short-lived replacement by Dr. Valentine Keating, who resigned because of poor health. Ellerslie Wallace was a wise choice, for he had already taught at Jefferson for 16 years as a Demonstrator of Anatomy and would occupy the Chair of Obstetrics for 20 more, acting also as Dean during the last four of those years (Figure 2-9). Wallace was a native Philadelphian, of English and Scottish ancestry, whose earlier education was at Bristol College in civil engineering and surveying. A change of interest to medicine led him to study with his brother, Joshua, who was a Demonstrator of Anatomy at Jefferson. After graduation from Jefferson in 1843 at the age of 24 he spent three years as a Resident Physician at the Pennsylvania Hospital. He then took his brother's place as Demonstrator of Anatomy at Jefferson and conducted a private practice. Wallace was only 43 when called to the Chair of Obstetrics and Diseases of Women and Children, a deserved promotion.

Fig. 2-9. Ellerslie Wallace, M.D. (1818–1885); Professor of Obstetrics (1862–1883) and Dean (1876–1883).
Dr. Wallace's powerful physique added to the impression of his clear lectures, which gave him recognition as one of the ablest Professors of Obstetrics in the country. He emphasized the structure of the pelvis as related to the size of the baby's head. To facilitate difficult labor he devised his own modification of forceps. He also invented a cephalotribe (head crusher) for instances when the head was too large for the birth canal, as in hydrocephalus. His writings were modest in amount and possibly retarded by his heavy load of teaching and the Deanship from 1879 to 1883. During the war Dr. Wallace was an active member of the Union League of Philadelphia, which had been organized on November 22, 1862, as "The Union Club of Philadelphia." Membership required "unqualified loyalty to the Government of the United States, and unwavering support for the suppression of the Rebellion." He served on the Board of Directors during 1865-1866.

Ellerslie Wallace, Jr., was graduated from Jefferson in 1879, the year his father became Dean. The elder Wallace resigned in 1883 and died in 1885 before he reached 66.

Philadelphia was a gigantic hospital center throughout the entire Civil War. On the Union side there were 16 hospital departments with an eventual total of 118,057 beds. Washington, D.C., was the largest department with 21,426 beds, and Philadelphia was next largest at 18,709. By December, 1864, there were 15 military hospitals in Philadelphia and its environs. With few exceptions all the best known Philadelphia physicians served for various lengths of time in these large hospitals as volunteers, regular army, or contract physicians and surgeons.

The first military hospital in Philadelphia was organized at the Christian Street commissioner's hall, May 6, 1861, at about the same time the first military hospital was opened in Washington. Additional buildings were secured to constitute the Military Hospital of Philadelphia. Previous commercial structures were renovated, such as the railroad depot at Broad and Cherry Streets, a coach factory at Fifth and Buttonwood, an old arsenal at Sixteenth and Filbert made famous by Dr. S. Weir Mitchell's novel *In War Time*, and a former silk factory at South and Twenty-fourth Streets. In May 1862, the Satterlee Hospital, the largest military hospital in the country, was begun in West Philadelphia at Forty-fourth and Spruce Streets. It was intended to care for 2,000, but by October it accommodated 2,458, and by the end of the war had a capacity of over 3,500. In December, 1862, the Mower Hospital in Chestnut Hill opened as the third largest in the country. In February, 1863, the McClellan Hospital was established about four miles from Philadelphia on the Germantown turnpike, near Nicetown. In these hospitals nearly all the most skillful physicians and surgeons of Philadelphia added greatly to the Union cause and their own fame. Unfortunately, the records of these hospitals were withheld from the public by the War Department in an order of February 23, 1879, so that a complete list is not obtainable. The work at Turner's Lane Hospital on *Gunshot Wounds and Other Injuries of Nerves* by S. Weir Mitchell (Jefferson, class of 1850), George R. Morehouse (Jefferson, 1850) and W.W. Keen (Jefferson, 1862) was published and an excellent article on this hospital was authored by Middleton.

**General George Brinton McClellan (1826–1885)**

It is inescapable to mention that the son of the founder of Jefferson, General George Brinton McClellan, was summoned to Washington on July 24, 1861, by President Lincoln to command the Army of the Potomac. On November 1, 1861, at age 34, McClellan was appointed General-in-Chief of all the Armies of the Union. General Lee stated after the war that McClellan was the ablest of his opponents. "No union general was so beloved as 'Little Mac' was by the untrained volunteers whom he turned into a superb instrument of war, the Army of the Potomac." McClellan expected to crush the rebels in one campaign. By the middle of 1862 victory seemed in sight. After some delay he brought his army within a few miles of Richmond and the Confederate Capitol appeared doomed. Suddenly stunning reverses struck the Union Army. The Seven Days' Battle demanded a withdrawal from the peninsula between the James and York Rivers and relieved the Union threat to Richmond. General Pope was defeated at the Second Battle of Bull Run. The bloody sacrifices at Antietam on September 17, 1862, followed. It was not a decisive victory for either army.

Lincoln chose the week after Antietam to issue
the Emancipation Proclamation. McClellan refused to continue the Antietam battle the following day, leading eventually to rumors that Lee would take Philadelphia and locate his headquarters in the Dundas mansion at Broad and Walnut Streets. On November 7, 1862, McClellan was dismissed and replaced by General Ambrose E. Burnside. “Little Mac,” as his father had also been called, became Governor of New Jersey and unsuccessfully ran against Lincoln on the Democratic ticket in 1864. He was buried in Trenton, New Jersey.

- Samuel D. Gross (1805–1884)

It is remarkable that as early as May 1861, Samuel D. Gross published his *Manual of Military Surgery*, for it was only on April 12, 1861, that the first guns of the Civil War were fired against Fort Sumter. It is claimed that he completed this book in nine days, but Gross in the preface indicated that he had previously started the manuscript. It contained “hints on the emergencies of field, camp, and hospital practice.” Pocket-sized (6 x 4 x 1½ inches), lightweight, and containing 186 pages, Gross’s *Manual* encompassed the care of medical and surgical casualties. It was republished in Richmond the following year—the so-called pirated edition—for the Confederate Army and became the only mutual communication in the strife between North and South. Gross visited the wounded on the field and government steamboats immediately after the battle of Shiloh at Pittsburg Landing, Tennessee, which occurred on April 12, 1862. This added nothing new to his second edition of 1862, an exact copy of the first, and eventually it was translated into German, and from German into Japanese in 1874.

- Samuel W. Gross (1837–1889)

The younger Gross, Samuel W. (Jefferson, class of 1857), to whom the *Manual of Military Surgery* was dedicated, entered the United States service as a Volunteer Brigade Surgeon. In the summer of 1862 he was Medical Director of the Fifth Division of the Army of the Ohio. He next served in Decamp General Hospital, New York Harbor, until the following summer, when he was placed in charge of hospitals in South Carolina and Florida and rose to Chief Medical Officer of the Northern District of that Department. In 1864 he was in charge of the Haddington Hospital of Philadelphia and brevetted as a Lieutenant-Colonel for his services. His sword later was donated by his widow (subsequently Lady Osler) to the College of Physicians of Philadelphia (Figure 2-10).

- John Hill Brinton (1832–1907)

Dr. John Hill Brinton (Jefferson, class of 1852), the boon companion of Samuel W. Gross, had a most distinguished Civil War career. He was 29 years old and a prime candidate for military service when the war broke out. His commission as Brigade Surgeon of Volunteers was signed by Abraham Lincoln, and the original document is preserved in Jefferson’s archives; all of his army orders and communications from Generals Grant, Rosecrans, McPherson, and Sheridan, as well as the office of the Surgeon General, are likewise contained in a bound volume, and his frequent letters home are also preserved in two bound volumes. These served him well for his later book, *Personal Memoirs*, completed in 1891 but not published until 1914, seven years after his death. This work with arresting literary aplomb recounts the early chaos in the organization of both the military and medical branches of the army, Brinton’s insights into the personalities of his commanders, the pitiful plight of the wounded soldiers to which he was committed, the difficulties in setting up hospitals and supplies, the ineptness and inexperience of many of the medical officers, battlefield combat as viewed through the eyes of a Volunteer Surgeon, Brinton’s efforts to collect specimens for the Army Medical Museum, his service on examining boards, and his collecting of statistics for the *Medical and Surgical History of the War of the Rebellion*. Dr. Brinton had a cousin, Dr. Daniel Garrison Brinton (Jefferson, class of 1860), who left a diary of his own Civil War experiences that was published 100 years later. General George Brinton McClellan and Dr. John Hill Brinton were first cousins but pursued independent war careers.

Duly commissioned in August, 1861, Brinton reported to the Department of the West where he came under the command of General Ulysses S.
Grant. This marked the beginning of a mutual respect and a regard for each other’s abilities that extended well beyond the war years. A letter to Dr. Brinton from Mrs. Julia Grant expresses comfort that her husband was under his medical auspices.

Brinton’s first real test came under General Grant at the battle of Belmont, Missouri, during which he had the misfortune to lose all of his surgical instruments. Many of these had been brought from Paris, and others had belonged to his old preceptor at Jefferson, the late Professor Thomas Dent Mutter. In the hurry of leaving for the field at Belmont, Brinton gathered them into a single package that he entrusted to a young orderly. The latter panicked from the enemy artillery fire and was seen to rush from the open into the woods with the heavy load held on his head by two hands. The orderly was captured and the instruments fell into the hands of a Mississippi surgeon. General Grant on a flag of truce attempted to barter a captured Arabian pony for the instruments, but the exchange was never consummated.

Brinton was distressed by the inexperience and surgical ignorance of his fellow medical officers. In an effort to remedy this situation he organized the Army Medical and Surgical Society of Cairo, bringing surgeons together chiefly from Illinois, Iowa, Michigan, and Missouri for mutual improvement. The members met weekly and the society flourished long after Brinton left Cairo, Illinois.

In June, 1862, Brinton was ordered to prepare *The Surgical History of the Rebellion*. This was intended to remedy the insufficient and defective statistics on the sick and wounded that became evident in the first year of the war. In August 1862, he was assigned also to collect and arrange all specimens of morbid anatomy that had accumulated in the various hospitals or that might have been retained by any of the medical officers. In carrying out this order, Surgeon Brinton thus established the United States Army Medical Museum. His visits to headquarters of the armies in the field and different hospitals provided data and illustrations for the book and specimens for the museum. The beginning of the museum in that August of 1862 consisted of three dried and varnished specimens placed on a shelf above the ink stand of Brinton’s desk. In January, 1863, a preliminary catalogue was printed with brief descriptions of 1,349 objects that had been collected within a five-month period. Of the total, 985 were surgical, 106 medical, 133 missiles, and 125 miscellaneous. By July 1, 1863, Brinton was able to
submit a “Consolidated Statement of Gunshot Wounds” for publication by the Surgeon General’s Office. It would be misleading and grandiose to give Brinton credit for more than these monumental projects that required additional years and teams of workers, but his name is indelibly linked with them. As a result of his Civil War experiences he delivered the Mütter Lecture in 1869 at the College of Physicians of Philadelphia on Gunshot Injuries, Their Surgery and Pathology.

■ William Williams Keen (1837–1932)

William Williams Keen entered Jefferson Medical College in 1860, and after completing only ten months of his course was requested by Dr. John Hill Brinton to join the Fifth Massachusetts Regiment. Although not a graduate in medicine, and without taking any examination whatever, he was sworn into service at Washington, D.C. on July 4, 1861, as an Assistant Surgeon. He was then sent to camp at Alexandria, Virginia, and two weeks later saw action at the Union defeat in the Battle of Bull Run on July 21, when Jackson made his “stone wall” stand. It was there that he saw the woefully unorganized condition of the Medical Department, for he did not receive a single order from anyone. The enlistment in his regiment expired on August 1, 1861, and with an honorable discharge he returned to Jefferson to receive his medical degree in March, 1862. Two months later, this time after an examination, he was again commissioned as Acting Assistant Surgeon in the U.S. Army, and put in charge of the Eckington Hospital in the outskirts of Washington. Shortly thereafter he was ordered to fit up two churches as hospitals, which he accomplished in the incredible period of only five days. His unusual executive ability in organizing hospitals led to a rotation of assignments that culminated at Turner’s Lane in Philadelphia, where he carried out the study on injuries of nerves in collaboration with his fellow Jeffersonians, Mitchell and Morehouse. For Keen this was only the beginning of a surgical career that would mark him as a giant of his era on a par with Harvey Cushing and William Halsted.

■ Jonathan Letterman (1824–1873)

As a unique coincidence, Jonathan Letterman was born in 1824 (the year Jefferson Medical College was founded) and in Canonsburg, Pennsylvania (the location of the mother institution from which Jefferson originated). Following graduation from Jefferson in 1849 he pursued a military career in the Army as Assistant Surgeon. With outbreak of the War between the States in 1861 he was assigned to duty with the Army of the Potomac. In July, 1862, he was made Medical Director of this division under the command of Major-General George McClellan. His remarkable administrative ability led to the more rapid rehabilitation of the sick and wounded, a reorganization of medical service in the field, and a more effective military hospital system. His greatest contribution was a revival of rapid evacuation of the wounded as originated by Dominique-Jean Larrey (1776–1842), Napoleon’s world-renowned military surgeon. These improvements were invaluable at the Battles of Chancellorsville and Gettysburg. They formed the basis of a permanent system throughout all subsequent U.S. military engagements.

In 1866 Letterman wrote Medical Recollections of the Army of the Potomac. The following year he was elected coroner of San Francisco and served for two years. He died prematurely in 1872 at the age of 47. In 1911 the U.S. War Department named a government hospital of 180 beds in his honor as the Letterman General Hospital in San Francisco near the Golden Gate Bridge.

■ Benjamin Howard Rand (1827–1883)

Back at Jefferson, it became necessary to choose a successor to Franklin Bache, Professor of Chemistry who died in 1864 at the age of 72. It was imperative to find a teacher of unquestioned reputation, for he was to replace a member of the prestigious faculty of 1841. The selection of Benjamin Howard Rand was ideal. He had taken his preceptorship under Dr. Robert M. Huston of the 1841 Jefferson Faculty and also served as Clinical Assistant to Mütter and Pancoast for two years before his graduation from Jefferson in 1848. Two years later, at the age of 23, Rand was elected
Professor of Chemistry of the Franklin Institute. He subsequently taught chemistry at Central High School and the Pennsylvania Medical College, founded by Dr. George McClellan after he left Jefferson. Rand taught at McClellan's school from its inception in 1839 until its complete attrition in 1861.

Of the seven Jefferson Professors painted by Thomas Eakins, Rand was the first in 1874. The fathers of both Rand and Eakins were writing masters in Philadelphia and probably knew each other. Rand had taught Eakins at Central High and was in the Chair of Chemistry at Jefferson when the latter held cards of admission to the anatomy lectures for the years 1864 and 1865. The Rand portrait in Jefferson's Eakins Gallery was Eakins' first try at painting a scientist. His previous portraits had been of relatives and friends. By asking Rand to sit for this work in 1874 Eakins made himself the unofficial portraitist for the College and proceeded the following year, again without a commission, to paint the Gross Clinic.

Rand's lectures emphasized the application of chemistry to the practical aspects of clinical medicine. He was liked by the students, respected as a scholar, and served as a capable Dean (1869-1873). He authored *Chemistry for Students* (1855), *Elements of Medical Chemistry* (1867), and edited two volumes of Metcalf's *Caloric* (1859). Rand's health became impaired in 1875 due to a pulmonary problem, which he ascribed to accidentally inhaling "arsenated hydrogen" during a medicolegal investigation. Because of the effect on his speech he was obliged to resign in 1877 at the age of 50. He died six years later of pneumonia.

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**Thomas Eakins (1844-1916)**

The Civil War years at Jefferson carry a significant relationship in the context of "medicine in art" to the life of Thomas Eakins. When he graduated from Central High School on July 11, 1861, the class had diminished to 24 because the war had started during his senior year. He was fifth in academic rank among the students who received a degree of Bachelor of Arts, with a four-year average of 88.4. As already mentioned, Eakins' Professor of Chemistry had been Dr. Benjamin Howard Rand, whose portrait he painted 15 years later. In 1862, at age 18, Eakins was a candidate for the Professorship of Drawing and Writing at Central High but was defeated by another applicant. That same year he enrolled as a student at the Pennsylvania Academy of the Fine Arts, which at that time was located on Chestnut Street between Tenth and Eleventh. This was but a stone's throw away from Jefferson Medical College. The classes emphasized drawing from casts of ancient classical figures, and there was a weekly anatomy lecture by a physician. The genius of Eakins drove him to seek a deeper knowledge of the structure of the human body than was provided by his limited drawing from life at the Academy. It is known that he held cards of admission for the years 1864 and 1865 when Professor Joseph Pancoast was at the height of his fame as an anatomist-surgeon. Pancoast not only emphasized the clinical aspects of anatomy in his lectures but aided the students in the practical anatomy of the dissecting rooms. Eakins did not participate in the Civil War. His Quaker heritage could have been a factor, but undoubtedly he was marching to the beat of a different drummer. Like most aspiring artists, and not unlike physicians of the same era, he went to Europe (Paris and Spain) for further study between 1866 and 1870. Eakins returned to Jefferson for further study of anatomy in 1873. One admission card was signed by Joseph Pancoast and a second (1874-1875) by his son, William Henry Pancoast, who succeeded to the Chair at that time. In these years Eakins painted Benjamin Howard Rand (1874) and the Gross Clinic (1875). Although Eakins never matriculated as a student for the degree of medicine, Jefferson and Eakins represented the perfect union of medicine and art.

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**William Henry Pancoast (1835-1897)**

It should be pointed out that Eakins' first courses in anatomy at Jefferson during the Civil War years were times when extra stress was placed upon the Chairs of Surgery and Anatomy to train surgeons for the Union Army. The position of Demonstrator of Anatomy was important enough to be the only teaching position listed in the
College announcement of 1863–1864 after the Board of Trustees and Professors. The vacancy created by appointment of Ellerslie Wallace to the Chair of Obstetrics and Diseases of Women and Children was filled by Joseph Pancoast's son, William Henry, who had graduated from Jefferson and just returned from study in Paris. He served in the Anatomy Department for 11 years before election to the Professorship in 1874.

William Smith Forbes (1831–1905)

An unsung hero was William Smith Forbes (Jefferson, class of 1852). He was a classmate of John Hill Brinton and Jacob Mendes DaCosta, all of whom later became Professors at Jefferson and were painted by Eakins. Forbes gave up his popular private school of anatomy just beyond the rear of St. Stephen's Episcopal Church at Tenth and College Avenue to enlist as Surgeon of the United States Volunteers in 1862. As Medical Director of the 13th Army he was in charge of the surgeons at Vicksburg. Later he served in the Summit Hospital of Philadelphia. His Civil War experiences afforded him ample opportunity to observe the lack of knowledge of practical anatomy on the part of many surgeons and the inability of many to profit from Gross's Manual of Military Surgery. This motivated him shortly after the war to advocate the passage of an anatomical act to provide bodies legally for dissection.

This brief narrative touches only some highlights of careers and events that affected the lives of everyone. As in all wars the demands on the medical profession led to certain improvements such as in the treatment of fractures, better experience in the use of anesthetics, and more efficient design of hospitals. Research in pathology and physiology was stimulated. On the other hand, defects in the training of medical students were tragically revealed in the field and the military hospitals. Hygiene and sanitation were primitive, with germs killing more men on either side than bullets did. There were more American deaths than in any war before or since. About 620,000 men died, two-thirds from disease and one-third killed in battle or subsequently of battle injuries. It was still the pre-Listerian era.

References
6. Ibid., p. 67.

Curricular Changes: Summer Courses Started (1866)

Expansion of the curriculum by the introduction of a "Summer Course" in 1866 invites a review of the gradual changes in the preceding years. Before 1832 the longest term allotted for the year's "Session" of lectures was four months (November through February). This was the standard curriculum in the medical colleges of the United States, although in the principal medical schools of Europe the term was six months. The Trustees and Professors of Jefferson were deeply aware of the necessity for a six-month term but felt that singly to attempt so great an innovation by a young institution was "scarcely prudent." Convinced, however, that the time was not far off when American medical schools would extend their courses of study, they took a first step in 1832, chiefly through the influence of Dr. Granville Sharpe Pattison, by adding an optional course of two months, during April and May, for which no extra tuition was charged. The lectures were structured to review or give greater detail to the subjects covered in the regular course.
To stimulate interest in the extra two months, an examination was held to award "to the more distinguished pupils, Medals and Certificates of Honour." The first of the three medals was given to the student whose written answers placed him at the head of the class. Certificates of Honour were given to those whose excellence of whose answers entitled them to such a distinction. The examination publicized in the "College Announcement" was for an incredible eight hours. Understandably, this program was modified after two years.

In 1834 the optional two months of instruction were changed to March and October, with elimination of the examination. The March session included dissection and demonstrations in anatomy as well as twice-weekly lectures by the Professors of Surgery, Medicine, Materia Medica, and Obstetrics. The October session was similar and also included Chemistry. A fee of $10 was charged for the March session, but the October session was free. Both sessions included opportunities in the Dispensary. This was a new feature in the medical schools of the United States. In the first year, 50 out of 172 students took the extra two months, and the following year nearly 100 did.

The M.D. degree still required three years of study "under the direction of a respectable Practitioner of Medicine," including two regular "Sessions" of lectures. The optional sessions did not count toward the degree. The candidates had to be at least 21 years of age, pass an examination, and submit a satisfactory thesis.

In 1836 the March course was discontinued and not resumed until 1847. October courses, including dissection and demonstrations in anatomy, were continued without extra tuition, and lectures were increased from three to four daily. Clinical instruction and opportunities to witness operations were available at the Pennsylvania and Philadelphia (Blockley) Hospitals. The October courses were suspended in 1838 because of renovations in the College building. By 1845 there were clinical opportunities for Jefferson students in the Wills Hospital, and Saturday lectures by Dunglison in Clinical Medicine and by Pancoast in Clinical Surgery at the Philadelphia Hospital. In 1848 it was announced that the College Clinic would be kept open the whole year for the experience of the students.

In 1849 the regular required "Session" added two weeks by starting in mid-October instead of the first Monday of November. The optional dissecting room and lectures still began at the beginning of October, with the Clinic open all year. The October date for official opening was gradually shifted to the second Monday of October, and the term continued until the last of February.

In 1866, for students who were able to attend in the interval between the winter courses of lectures, the Faculty instituted a "Summer Course" conducted by the Professors in conjunction with additional staff, and made to comprise not only branches regularly taught during the winter but others. The term "Summer Course" was a misnomer, because there was a recess during the intolerably hot Philadelphia months of July and August. The course otherwise extended from the first Monday of April until the first Monday of October. It was of practical character, embracing important specialties in Medicine and Surgery, with clinical illustrations, including the following subjects: Clinical Surgery by Professors Samuel D. Gross and Joseph Pancoast, Clinical Obstetrics by Professor Ellerslie Wallace, Pathology by Professor Samuel H. Dickson, Hygiene and Meteorology by Professor Benjamin H. Rand, Materia Medica and Therapeutics by Professor John B. Biddle, Clinical Medicine by Dr. Jacob M. DaCosta, Visceral and Surgical Anatomy by Dr. William H. Pancoast, Minor and Operative Surgery by Dr. Samuel W. Gross, Physiology by Dr. J. Aitken Meigs, Ophthalmic and Aural Surgery by Dr. Richard J. Levis, and Venereal Diseases by Dr. Francis F. Maury.

During the entire year, and especially in the winter, private examinations or "quiz sessions" were in operation under capable instructors who closely followed and elucidated the lectures delivered in the College. A majority of these instructors in the "Summer Course" and quiz classes subsequently became Professors at Jefferson.

References
Post-Bellum Progress (1865–1876): End of the Civil War to the Centennial Exhibition

Jefferson took on added vigor after the War. In the immediate five years between 1865 and 1870 there was representation from 36 states, nine territories, and the countries of Germany, Sweden, India, China, Japan, Central and South America, the West Indies, and Canada. Student registration in 1866 numbered 425, with 311 from 29 states. Enrollment from the South and Southwest increased to 98 because almost all of the Southern medical schools had collapsed and were financially depleted.

John Barclay Biddle (1815–1879)

Dr. Thomas D. Mitchell died in 1865, the year after Rand took the Chair of Chemistry. His successor in Materia Medica was John Barclay Biddle (Figure 2-11). He was the son of Clement C. Biddle and Mary Barclay, both from prominent old Philadelphia families representative of "American Aristocracy." Biddle and Cadwalader names (later to appear in Professor Henry Cadwalader Chapman) were so typically Philadelphian in heritage that a saying arose: "When a Biddle gets drunk he thinks he's a Cadwalader." The prestigious Nathaniel Chapman (a successor to Rush in the Chair of Medicine at the University of Pennsylvania and later to be the first President of the American Medical Association in 1847) was his uncle through marriage to Rebecca Biddle. After an excellent education in the classics and languages at St. Mary's College in Baltimore, Biddle became a private pupil of Dr. Chapman and enrolled at the University. While there he studied with John Syng Dorsey, George Bacon Wood, Philip Syng Physick, Samuel Jackson, and William Gibson, all acknowledged leaders in their fields. After graduation in 1836 Biddle enhanced his elite education with a year of study in Paris. While establishing himself in practice in 1838, he founded The Medical Examiner with Dr. Meredith Clymer (1817–1902). At age 23 Biddle almost immediately became a journalist of distinction. The Medical Examiner, which appeared fortnightly, was subsequently issued weekly. Its success demanded additions to the editorial staff in the persons of Drs. W.W. Gerhard and Francis Gurney Smith. These youthful writers excelled in their editorials and bibliographical notices. In 1846 the journal merged with The Medico-Chirurgical Review.

In 1846 Biddle with some editorial and other colleagues founded the Franklin Medical College at Locust Street above Eleventh, where he took the Chair of Materia Medica until the College closed two years later. He also assumed the same Chair in the Pennsylvania Medical College. In 1852 he authored one of the most popular books on materia medica that had ever been published. Under the title of A Review of the Materia Medica, for the Use of Students, it contained about 300 pages; a second edition in 1865, when Biddle came to Jefferson, was titled Materia Medica, for the Use of Students. Eight additional editions followed, the last of which appeared in 1878 and had expanded to 462 pages. A later successor at Jefferson, Dr. Hobart A. Hare, would also conduct a dominant textbook of therapeutics through 21 editions. Both of these men, as most Jefferson Professors to this time, had studied at the University of Pennsylvania.
Biddle's talent as a writer was matched by his excellent lectures. His pleasing appearance added grace to his clear and authoritative teaching. He held the Chair for thirteen years (1865–1878) during the last six of which he served as Dean. Shortly after assuming the Deanship in 1873, Biddle was confronted with the first known woman applicant to Jefferson. In accord with the general sentiment of the times, he turned down her application and referred to the incident in his introductory speech to the students at the opening of the College that year:

"Women entering medicine must be willing to subordinate love and marriage to the stern requirements of the most exciting vocation . . . . If they come into the arena they must come as equals . . . . We would spare them the conquest because we know that whatever their talent . . . . the inferiority of a feebler and more delicate physical organization is insurmountable . . . . The cry for new rights is loud, but it comes from the few . . . . The clatter of all the female men in the world cannot alter the laws of nature!"4

In Biddle's defense it can be stated that "at the meeting of the Medical Society of the State of Pennsylvania, held in 1866, there was passed a resolution to the effect that it was considered unprofessional to consult with the professors and graduates of female medical colleges, as at that time organized."5 Not until 1961 would Jefferson admit women applicants.

In answer to a general call from Louisville, Kentucky, to the various medical colleges of the United States, 22 representatives met at Jefferson Medical College on June 2, 1876. The object of the convention was "to consider all matters relating to reform in medical college work." This was the founding meeting of the Association of American Medical Colleges, and Dean John B. Biddle was elected the first President. He served until 1879 and was succeeded by Dr. Samuel D. Gross for the years 1879–1881. Later, Jefferson's Dean James W. Holland served as President for 1897–1898 and Dean Ross V. Patterson for 1933–1935.

Biddle was a strong supporter of the first detached Jefferson Hospital erected in 1877. Failing health forced him to retire in 1878. He died the following year at age 64. The autopsy performed by Dr. John Hill Brinton revealed a ruptured appendix with peritonitis.

Jacob Mendes DaCosta (1833–1900)

In 1866, Jacob Mendes DaCosta (Figure 2-12) became a Lecturer in Clinical Medicine. Although not related to the illustrious surgeon, John Chalmers DaCosta, who followed a generation later, his fame and benefit to the institution were just as significant. Rising through the ranks, he was the first Jefferson alumnus to occupy the Chair of Medicine. In 1872, as successor to Samuel Dickson in whose Department he had taught, he was also the first to be so appointed from the Faculty of that Department.

DaCosta was born on the island of Saint Thomas on February 7, 1833, a descendant of a Portuguese family that had immigrated to London in the 16th century. His preliminary education in Dresden led to proficiency in both ancient and
modern languages as well as classical literature. DaCosta immigrated to Philadelphia in 1849, where he studied at Jefferson as a pupil of Professor Mütter and with the other members of the famous faculty of 1841. His diligence was noted by Mütter, who allowed him to demonstrate the surgical specimens to his classmates twice weekly in the evenings. After graduation in 1852 DaCosta returned to Europe for study in the clinics of Paris, Prague, and Vienna. Some of this experience was in the company of his outstanding classmate, John Hill Brinton (a successor to Samuel D. Gross), whose sister he subsequently married.

On returning to Philadelphia in 1854, DaCosta began office practice, coupled with teaching of physical diagnosis both privately and in the Summer Association for Medical Instruction. In addition, he wrote papers on his clinical observations. DaCosta’s textbook, Medical Diagnosis, first published in 1864, went through nine editions until 1900, with translations into several foreign languages. He served on the staff of Jefferson, Episcopal, Philadelphia, Children’s and the Pennsylvania Hospitals. In 1887 he was active in organizing the Pathological Society of Philadelphia (President, 1864–1867). DaCosta became an Honorary Member of the Medical Society of New York and London, a fellow of the College of Physicians of Philadelphia (President, 1884–1885 and 1895–1898), original member of the Association of American Physicians (President, 1897), and a Fellow of the American Philosophical Society.

DaCosta’s reputation as a physician was prestigious and his clinics were models of information, clarity, and interest. His description of “irritable heart” was a classic, marking him as a pioneer in cardiology.3 His professional contributions were recognized by the award of the degree of L.1. D. by Jefferson, the University of Pennsylvania, and Harvard. After 19 years of distinguished service as Professor, DaCosta resigned in 1891 to become Emeritus. He died quickly of a heart attack in June 1900, at his home and office at 1700 Walnut Street. Of the several memoirs for this illustrious Jeffersonian, none is surpassed by that of his faithful secretary for many years, Miss Mary Clarke.4 DaCosta’s portrait by Thomas Eakins, painted in 1893, hangs in the Pennsylvania Hospital, and the two by Robert Vonnöhl in the same year are on display at Jefferson and the College of Physicians.

Wooley, in historical articles as recent as 1982 and 1985, states: “It seems fitting to recall Jacob Mendes DaCosta for many reasons—as an early American clinical investigator working in a clinical research center (Turner’s Lane), as a patron for unsung clinicians and teachers in medical schools, as an example of the finest qualities of the Philadelphia medical spirit, and a noble man and physician.”7,8

Pathology and Infection

Until 1867, a smattering of pathology was taught through the medical and surgical courses of Drs. Samuel H. Dickson and Samuel D. Gross. Harvard was the only medical school in the country with a separate Chair of Pathological Anatomy (Pathology). An innovation occurred in the “Summer Course” of 1867 when William Williams Keen (Jefferson, class of 1862) lectured on pathological anatomy then and in consecutive years until 1876. The lectures were continued by Dr. Morris Longstreth, who eventually became the first incumbent of a separate Chair of Pathology (1891).

In surgery, the arrest of hemorrhage by use of the ligature was a French contribution (around 1556 by Ambroise Pare); the avoidance of pain through anesthesia was an American contribution (Crawford Long in 1842 and Thomas Morton in 1846); and the control of infection was a British one (Joseph Lister in 1867). Unfortunately, most of Lister’s contemporaries failed to recognize that his paper On the Antiseptic Principle in the Practice of Surgery was truly innovative. Instead, they looked upon it as nothing more than the introduction of some new form of wound dressing in which the number and variety already in use were legion. Whereas Samuel D. Gross’s predecessor, Professor Mütter, had been quick to adopt the use of ether, Gross himself, America’s foremost surgeon, was loathe to accept Lister’s new method, as is plainly evident in Eakins’ depiction of the Gross Clinic in 1875. As late as 1882, in the last edition of his System of Surgery, Gross wrote:
When the wound is very large, as after the amputation of a limb, or the extirpation of the mammary gland, I generally cover the surface with a pledget of lint wet with olive oil or camomile, to prevent the contact of the air and thus diminish the chances of profuse suppuration. I have never found any appreciable benefit in such a case from the use of antiseptic dressings, although they are regarded by many surgeons as most valuable accessories. The antiseptic method, when strictly adhered to, demands rigid attention to minute details so that it has been modified in various ways, of which the most popular appears to consist in irrigating or washing the wound with a solution of carbolic acid, boracic acid, salicyclic acid, benzoic acid, thymol, oil of eucalyptus, chloride of zinc, or pure alcohol, and afterwards enveloping the part in cotton-wool or absorbent cotton . . . . At the present day, carbolic acid is falling into desuetude. As I have pointed out in the section on septicemia and pyemia, it does not prevent the development of micrococci and bacteria in the pus of wounds, and its employment has not only frequently given rise to serious symptoms of poisoning, but it has been followed by death in a number of instances.

It is gratifying to record, however, that two of Gross's pupils at Jefferson, William W. Keen (Class of 1862) and J. Ewing Mears (Class of 1865) pioneered in Listerian methods during the 1870s.

In May of 1868, forty years after graduation from Jefferson, Samuel D. Gross made his first trip to Europe. He was warmly received by many of the distinguished physicians and surgeons of the great clinics of the continent as a representative of what was best in the American medical profession. An example of the hospitality extended to him may be quoted from his Autobiography:

"The evening before leaving Berlin I had the pleasure of meeting Virchow at his own table, at his elegant residence in a fashionable part of the city. The gentlemen who were invited to meet me were among others, Professor Von Langenbeck, Von Graefe, the famous oculist, Donders, the celebrated ophthalmologist of Utrecht, and Dr. Gurlt, Professor of Surgery in the University of Berlin. Our time was occupied in agreeable and instructive conversation. At ten o'clock the folding doors were thrown open, and we sat down to a bountiful repast. After the viands were pretty well disposed of, our host, availing himself of a lull in the conversation, drew forth a large volume from under the table, and rising he took me by the hand, and made me an address in German, complimenting me upon my labors as a pathological anatomist, and referring to the work, which happened to be the second edition of my Elements of Pathological Anatomy, as one from the study of which he had derived much useful instruction, and one which he always consulted with much pleasure. I need not say how deeply flattered I felt by this great honor, so unexpectedly and so handsomely bestowed upon me by this renowned man. I felt that I had not labored in vain, and that the compliment was more than an equivalent for all the toil and anxiety which the work had cost me."

At Oxford, during August of this five-month visit, Gross was commissioned to represent the American Medical Association, of which he was the President, at the meeting of the British Medical Association. If it had been known earlier that Gross was coming to Oxford, he would have received the honorary degree of Doctor of Civil Law, which was conferred upon him in a second visit of 1872.

On the return from his first European visit in October, 1868, Gross, along with Dr. Joseph Pancoast, who had also been on an extended European tour, was further honored by a public reception in the foyer of the Academy of Music. Among several hundred men and women in attendance were colleagues, alumni, distinguished physicians from Pennsylvania and other states, as well as prominent members of the bar, pulpit, military, and business community.

Although Gross and Pancoast were at their zenith in 1868, the third member of the renowned triumvirate, Robley Dunglison, was suffering from congestive heart failure. He resigned to become Emeritus and died one year later. Samuel H. Dickson took the Deanship and James Aitken Meigs was elected to Dunglison's Chair.

James Aitkin Meigs (1829–1879)

James Aitken Meigs (Figure 2-13) was not related to his Professor of Obstetrics at Jefferson, Charles...
Delucena Meigs, even though the latter had encouraged him to take a preceptorship with Dr. Francis Gurney Smith, who strongly influenced his interest in the natural sciences. A Philadelphian of humble birth on July 31, 1829, he evidenced even in childhood a love for books, an interest in science, and a talent for poetry. As valedictorian of his class at Central High School in 1848, his address, *The Destination of Philosophy*, was couched partly in verse. Endowed with a capacious memory, inquisitiveness, and philosophical inclinations, Meigs was attracted to a career linking the study and treatment of both emotional and physical illness. While studying at Jefferson, from which he graduated in 1851, he took notes of the lectures and debates of the Philadelphia County Medical Society, gave clinical reports of cases treated at Jefferson Medical College and the Pennsylvania Hospital, and presented papers on the mortuary statistics of Philadelphia that were published in the *Medical Examiner*. Meigs' pregraduation relations with the Philadelphia County Medical Society led to his joining upon receiving his degree. He served as corresponding secretary for many years and as President in 1871.

Meigs' graduation thesis, *The Hygiene and Therapeutics of Temperament*, revealed his special interest in physiology. At this time he passed the examination given by the lecturers of the Philadelphia Association for Medical Instruction and was awarded a certificate. Driven both by economic and academic ambitions, he started an active practice, yet found time to study at the College of Physicians and the Academy of Natural Sciences, to the latter of which he was elected a member at the age of 22. Two years later he became a member of the Academy's Standing Committee on Ethnology, served for several years as the Librarian, and in 1857 became Chairman in Anthropology. His sustained interest in the Academy was evidenced by his delivery of a scholarly address when the cornerstone of the new building at Nineteenth Street and the Parkway was placed in 1872. Meigs systematically catalogued the Academy's collection of human crania, which contained more than 1,000 specimens. (This collection is not to be confused with the crania displayed in the Mütter Museum of the College of Physicians.) Meigs' publication of *Cranial Characteristics of the Races of Man*, along with other articles in this field, earned him worldwide recognition as an ethnologist.

In 1854, only three years after graduation, Meigs was appointed Professor of Climatology and Physiology in the Franklin Institute, a position he held for eight years. Two years later he assisted in the editing of William Benjamin Carpenter's *The Microscope and Its Revelations*. His own microscope, the finest then available, was a handsome binocular model accompanied by an impressive set of accessories. It was similar to the one depicted in Eakins' portrait of Benjamin Howard Rand.

In 1857, at age 28, Meigs was elected to the Chair of the Institutes of Medicine in the

![Fig. 2-13. James Aitken Meigs, M.D. (1829–1879); Professor of Institutes of Medicine (1868–1879).](image)
Philadelphia College of Medicine. Two years later he succeeded his former preceptor, Dr. Francis G. Smith, in the Chair of Physiology in the Medical Department of the Pennsylvania College, with which the other school had been merged. In 1866 Meigs was engaged as a Lecturer in Physiology in Jefferson’s “Summer Course,” and in 1868 was appointed to the Chair of the Institutes of Medicine and Medical Jurisprudence, which had acquired prestige by the long and distinguished service of Professor Dunglison. Dr. Silas Weir Mitchell (Jefferson, class of 1850), the famous experimental physiologist, neurologist, and novelist, was a rival candidate for the position. Letters supporting Meigs poured in from the medical Professors of Philadelphia and scientists throughout the world. The latter included Professor William Turner of the University of Edinburgh, Dr. Paul Broca of the Academy of Medicine in Paris, and the scholars von Duben of Stockholm and Pruner Bey of Cairo. S. Weir Mitchell had lost out to Francis G. Smith for the Chair at the University of Pennsylvania in 1863 and then at Jefferson in 1868. History has shown that Mitchell was “Philadelphia’s Lost Physiologist” who wanted a faculty appointment and to start a laboratory for research at a time when the medical schools gave little priority to this type of endeavor. As an introduction to his course in physiology at Jefferson, Meigs gave a dissertation entitled The Correlation of the Physical and Vital Forces. He was among the first to illustrate his lectures by means of the stereopticon. His presentations were prepared thoroughly and delivered without notes. Samuel D. Gross stated that if Meigs did indeed have a fault, it was that his lectures were prepared in too great detail, and often contained more than the students could assimilate. Gross further was of the opinion that Meigs’ life was on a suicidal course in that he carried on an exhausting practice mostly devoted to obstetrics while engaging in strenuous academic work. Meigs held memberships in a host of international scientific societies and collected at least 800 books on natural science and physiology.

On March 12, 1879, in the year of his death, Meigs delivered before the fifty-fourth graduating class of Jefferson at the Academy of Music a valedictory address written entirely in iambic pentameter. This classic composition of 534 lines challenged the students to cultivate the science and the art of medicine, to struggle tirelessly against disease, to show compassion toward patients, and to strive both for personal success and for elevation of the profession. The details of his death on November 9 remain obscure. He was only 50 years of age and had held the Chair for but eleven years. His case was called one of “blood poisoning” with pulmonary embolism as a terminal event. On April 20, 1880, eight recent graduates of Jefferson who had been his pupils perpetuated his memory by founding the Meigs Medical Association, which is still active beyond its centennial year.
Pancoast in 1872, Samuel D. Gross in 1874, Robley Dunglison in 1876, and John B. Biddle in 1880—three of whom were deceased. These portraits grace the halls of Jefferson in excellent condition more than a century later. On the other hand, without a commission, Thomas Eakins, America’s greatest portrait artist, painted Benjamin Howard Rand in 1874, The Gross Clinic in 1875, and John Hill Brinton (a successor to Gross) in 1876.

The Middle 1870s

The graduating class of 1870 numbered 160, and in March of that year the commencement exercises underwent a permanent change from Musical Fund Hall to the Academy of Music. In 1873 the faculty planned a series of prizes for outstanding scholarship that were first awarded at the Annual Commencement of March, 1874; before that time prizes had been awarded on a sporadic basis. The five prizes were as follows: $100, by a friend of the school, for the best graduation thesis; $50 by the Professor of Anatomy (Pancoast) for the best anatomical preparation contributed to the College museum; $50 by the Professor of Surgery (Gross) for the best report of his surgical clinic; $50 by the Professor of Practice (DaCosta) for the best report of clinical cases or original inquiry; and $50 by the Professor of Physiology (Meigs) for the best paper on original physiological investigation. The following year the prizes increased to nine. With gradual increase in recent years to more than 30 prizes, it became necessary to make the awards at special class day exercises on the day before Commencement.

In June, 1873, the famous Dr. Joseph Pancoast resigned as Chairman of the Department of Anatomy, a post he had held with great distinction since 1841, and as successor to George McClellan as Professor of Surgery in 1839. Initially nine candidates were placed in nomination. Five Jeffersonians were interested—William H. Pancoast (the retiring Professor’s son), John Hill Brinton, William W. Keen, William S. Forbes, and Addinell Hewson, all of whom were well qualified anatomist-surgeons. Seventeen ballots were taken in succession without any candidate receiving a majority vote. The elder Pancoast was induced to continue, relieved of evening lectures. At another meeting in April, 1874, William H. Pancoast received a majority vote on the fifteenth ballot.

The younger Pancoast was graduated from Haverford College in 1873 and from Jefferson in 1876. As was customary at that time, he did postgraduate work for two and one-half years in London, Paris, Vienna, and Berlin. During the Civil War he was appointed Surgeon-in-Chief in charge of the Military Hospital in Philadelphia. While serving throughout the war he also aided his father’s Department at Jefferson as Demonstrator of Anatomy from 1862 until his full Professorship in 1874. William Pancoast also found time to lecture on surgical anatomy in Jefferson’s Summer Course. In his clinical practice he was a brilliant diagnostician and skillful operator, serving on the staff of the Charity and Philadelphia Hospitals. He published many papers on surgical subjects. In 1874, after the death at age 63 of the famous Siamese twins, Chang and Eng Bunker, he obtained permission for their autopsy under the auspices of the College of Physicians of Philadelphia. His report, in conjunction with Dr. Harrison Allen of the University of Pennsylvania, stated that no separation would have been successful except perhaps in early childhood. From 1886 until his death in 1897 at age 62 Pancoast was Professor of the combined Chairs of Anatomy and Surgery at the newly formed Medico-Chirurgical College of Philadelphia, which he helped to found.

In the early 1870s economic and psychological recovery from the Civil War was underway but far from resolved. Ulysses S. Grant was in the White House. Railroads crossed the country from coast to coast, and new cities were springing up everywhere, associated with tides of immigrants. An enlarging middle class was enjoying a better standard of living as industrial progress burgeoned. Physicians and scientists who had studied in Europe in increasing numbers added to the new achievements and rising standards. America’s stature was becoming evident in a variety of fields in which the United States was emerging ahead of its European counterparts. The country was moving toward its centennial celebration, to be held in Philadelphia. Exhibitions were expected from throughout the world.

In the winter of 1874 the Philadelphia County Medical Society appointed a Centennial Medical Commission with Samuel D. Gross as Chairman.
to devise plans for the organization of an International Medical Congress. At the Congress, which convened for a week starting September 4, 1876, Gross was unanimously elected President. A large number of distinguished American and foreign delegates were in attendance, including Professor Miyake from the Medical College of Tokyo. Drs. William B. Atkinson (Jefferson, class of 1853), Richard J. Dunglison (Jefferson, 1856), and William W. Keen (Jefferson, 1862) were assistant secretaries. The Surgeon General, Dr. Joseph K. Barnes, was an Honorary Vice-President. At the banquet of the Congress on September 8th, Gross presided with Professor Joseph Lister of Edinburgh on his right and Governor Hartranft on the left. In the previous year Gross had published a History of American Medical Literature from 1776 to the Present Time, "designed to show our people how much earnest work we have done during the century now about to close of our existence as an independent power in the interests of medical science, and in upholding the national honor." Gross wrote the history of American surgery from 1776 to 1876 especially for the Centennial.

In addition to the seven Professional Chairs, the "Announcements" of 1875 and 1876 included the names of an enlarging faculty: Thomas H. Andrews, M.D., Demonstrator of Anatomy; J. Ewing Mears, M.D., Demonstrator of Surgery; William H. Green, M.D., Demonstrator of Chemistry; Henry Lean, M.D., Prosector to the Professor of Anatomy; Franklin West, M.D. (recorder on Eakins's Gross Clinic), Prosector to the Professor of Surgery and Curator of the Museum; William Thomson, M.D., Clinical Lecturer in Diseases of the Eye and Ear; Samuel W. Gross, M.D., assisting the elder Gross as Lecturer in Clinical Surgery; John H. Brinton, M.D., Lecturer on Operative Surgery; Francis F. Maury, M.D., Lecturer on Venerable and Cutaneous Diseases; Morris Longstreth, M.D., Lecturer on Pathological Anatomy; Jacob Solis-Cohen, M.D., Lecturer in Laryngoscopy and Diseases of the Throat; F.H. Getchell, M.D., Lecturer on Clinical Midwifery with Cases; J. Eneu Loughlin, M.D., Lecturer on Chemistry and Pathology of the Urine and Blood; Stanley Smith, M.D., Lecturer on Physical Diagnosis, including auscultation and percussion; and H. Osgood, M.D., Lecturer on General Symptomatology and also the Microscope.

Acceleration of teaching and clinical demands on Jefferson in the exciting atmosphere of the Centennial Celebration were echoed in the construction of the 1877 first detached hospital.

References

The First Jefferson Medical College Hospital (1877): Science Begins to Enhance the Art of Medicine

For fifty-three years (1824-1877) Jefferson Medical College was without a regular hospital, but, although there was no building especially devoted to hospital purposes until 1877, there was a sort of hospital from the very beginning. Even in the Tivoli Theater building on Prune Street (518-520 Locust) outpatients were cared for and operations were regularly performed before the class by
George McClellan, the first on May 9, 1825. Up to the year 1844, patients with serious operations were driven to their homes in carriages and cared for by the Professor of Surgery and his assistants. By that time the upper floors of the two stores on the southwest corner of Tenth and Sansom Streets were rented and gradually renovated into a miniature surgical hospital, and in 1852 a doorway was made to connect them with the arena of the upper lecture room of the adjacent Medical Hall (the Ely building). It was in this upper lecture room that the Professor of Anatomy taught and where Samuel D. Gross was operating in Eakins’s famous masterpiece, The Gross Clinic (1875). The “old operating table” depicted in the painting was rescued and restored several times until permanently maintained as an archival treasure in the Samuel D. Gross Conference Room of the Department of Surgery. The two rooms over the stores, one for men and one for women, accommodated about 15 patients—they constituted the hospital until 1877 as used by Mütter, the elder Pancoast, and the elder Gross. The concept of a hospital as a place to teach medical students was new and had been preceded only by the University of Pennsylvania in 1874.

In 1877 not a building in Philadelphia was over eight stories high. Steel was not used in construction. Street cars were drawn by horses over Belgian blocks and cobblestones. Bicycles with huge front wheels were just appearing and the first automobiles were 20 years away. Streets were illuminated by flickering gas jets, tended by lamplighters who as watchmen were precursors of a police force that did not yet exist.

The telephone had been exhibited the previous year at the Centennial Celebration and was regarded only as an intriguing toy. Edison was perfecting the incandescent electric light that would appear two years later, and was inventing the phonograph. Letters and records were written with pen and ink; handwriting was a valued art in the absence of typewriters. Newspapers were without photographs, and pictures in magazines were woodcuts. Preservation of food by canning was in its infancy but on its way to becoming a large industry. Jules Verne’s, book Twenty Thousand Leagues Under the Sea, just published, imagined submarines in the way that the twentieth-century comic strip Buck Rogers would regard space travel. The United States Army numbered 20,000 men, and the Navy was practically nonexistent. The Philippine Islands were little known except in connection with hemp and unusual looking cigars.

Express trains ran 30 miles per hour, and the fastest passage across the Atlantic required more than seven days.

The Doctor of Medicine degree was still obtained in a three-year preceptorship with a “regular” physician, which included two years of medical college and only the simplest preliminary education. The Jefferson Professors divided the students’ fees, and the College was run as a proprietary institution for private gain of the faculty, like most medical schools in the country. There was not a genuinely trained nurse in any hospital in Philadelphia. Surgery was limited mainly to the surface of the body. Serious operations consisted of ligating for aneurysm, amputation, stone in the bladder, and extirpating tumors. The abdomen was seldom entered except by a few surgeons, namely Washington L. Atlee (Jefferson, class of 1829) and J. Marion Sims (Jefferson, 1835). Gunshot wounds of the abdomen were not explored. There was tracheotomy, operating for empyema and strangulated hernia, bone diseases (Gross Clinic), reducing dislocations, setting and dressing of fractures, trephining for head injuries, and removal of superficial foreign bodies and tumors. Operations were performed between the hours of 11 A.M. and 3 P.M. on sunny days with natural light from a skylight. Edison’s platinum wire incandescent electric lamp was not invented until 1878. Antisepsis was in its infancy, although described a decade previously. In 1877 only two surgeons in Philadelphia employed Listerian methods. They were W.W. Keen (Jefferson, 1862) and J. Ewing Mears (Jefferson, 1865) at St. Mary’s Hospital. Patients were afraid of hospitals with good reason and would go only as a last resort. In 1877, medicine notably was moving toward adding science in the form of laboratories to the art. In that year Louis Pasteur discovered the bacillus of anthrax. The following year Robert Koch discovered causes of infection, and William Henry Welch introduced bacteriology in the United States. In 1879 Albert Neisser discovered the gonococcus and with Armauer Hansen described the lepra bacillus. In 1880 Pasteur discovered the streptococcus,
staphylococcus, and pneumococcus, and a year later Alexander Ogston found staphylococci in abscesses. Robert Koch's discovery of the tubercle bacillus was awaiting the year 1882. Local anesthesia would not be introduced by William Stewart Halsted until 1885. Appendicitis was unrecognized until 1886 when Reginald Fitz of Boston published his epoch-making description.

The need for a separate hospital to relieve increasing encroachments on the space of the College was perceived in 1873. Trustees, Faculty, and Alumni were equally desirous and enthusiastic about getting on with the project. By 1871 the $29,000 debt on the original Ely building (Medical Hall) was liquidated and the drive for new funds could begin. A committee for public appeal was formed from five members of the Board, two from the Faculty, and two from the Alumni. In 1873 Dr. Francis Fontaine Maury (Jefferson, 1862) approached the Pennsylvania State Legislature and obtained an appropriation of $100,000 on the conditions that it be matched by a similar sum, that the money would not be available until construction was started, that only $25,000 could be used in any six months, and that the building be completed within three years. Dr. John Hill Brinton (Jefferson, 1852) undertook to raise $150,000 through the Alumni, and in this effort he surpassed even Samuel D. Gross. The Trustees and friends of the school gave generously. Consideration was given to the desirability of moving to a different location in the city, but fortunately the two stores at the corner of Tenth and Sansom (for a subsequent new laboratory) and ground (107 by 106 feet) on Sansom Street between Tenth and Eleventh (for the hospital) were available. The hospital (and grounds), at a cost of $186,000, was completed within the stipulated three years by March 1876.

At this time the population of Philadelphia was 820,000. In the following decades immigrants pouring into the city would swell the population to 1,300,000 by the end of the century. The first wave came mainly from Germany and Ireland, accompanied by many blacks from the South. Toward the end of the century the influx of Irish was matched by a sixfold increase in the Italian population. Many immigrants from Russia and Eastern Europe contributed to the “melting pot.” Jefferson had not prepared too soon for the care of an expanding community.

Frank Furness (1839–1912) was the chosen architect for the new hospital. His style was Victorian Gothic, as still extant in the Pennsylvania Academy of the Fine Arts (Broad and Cherry), which he planned as part of the 1876 Centennial. Although architectural tastes turned to the Classical Revival, and although his accomplishments were subsequently ignored for more than 50 years, he is recognized today as one of Philadelphia's greatest architects.

With all the modifications, refinements, and added costs, the first detached Jefferson Medical College Hospital was formally opened on September 17, 1877 (Figure 2-14). Dr. Samuel D. Gross had been approached to give the address, but he induced Dr. Joseph Pancoast to deliver it instead. Pancoast spoke graphically about the founder of the College, Dr. George McClellan,
and emphasized the advantages of clinical instruction that McClellan instituted at Jefferson. Pancoast at the time had already retired, and it was his last official act in the school after nearly 40 years of attachment. The building was modern, well equipped, architecturally attractive, and the pride of the School. A two-story shed-roofed structure to the left accommodated the clinical amphitheater, and a five-story structure to the side and rear housed the hospital proper. The basement functioned for kitchens (Figure 2-15), laundry, and storerooms. The first floor of the hospital provided a public lobby, administrative offices (Figure 2-16), apothecary (Figure 2-17), and surgical-preparation rooms for the adjacent "pit." The second floor was assigned to the clinics (Figures 2-18 and 2-19), while the third and fourth floors each contained two wards (Figures 2-20, 2-21, and 2-22).

The fifth floor contained ten private rooms, a suite of three rooms with a fireplace for the Resident Physician, and a matron's room. The elevator and stairs were at the rear of the "L" where the two structures adjoined. The total bed capacity was 125.

It could only have been a coincidence that on August 30, 1877, several weeks before formal opening, Dr. Francis F. Maury, who had successfully solicited the State Legislature for funds, performed the first operation. It was an amputation of the left middle finger on Malcolm Meyer, son of the Speaker of the House. Maury was a brilliant rising star in the Samuel D. Gross Surgical Staff who tragically died of tuberculosis in 1879 at the age of 39. In addition to his prowess in the most complex surgery of his time, he was
Fig. 2-16. Administrative offices of the 1877 hospital.

Fig. 2-17. Apothecary (1877 hospital).
FIG. 2-18. Surgical Clinic (1877 hospital).

FIG. 2-19. Orthopaedic Clinic (1877 hospital).
FIG. 2-20. Women's Surgical Ward (1877 hospital).

also a pioneer in dermatology. His portrait is among the finest in Jefferson's art collection (Figure 2-23).

The Hospital was of immediate benefit to patients and student teaching. The first seven months witnessed the admission of 642 patients, who came not only from local areas but from distant parts of the country. The United States government established a Marine Ward in which the government paid 85 cents a day per patient. Private patients were charged $2 a day, and ward patients, when able, paid from $5 to $7 per week. Ward patients were not charged a physician's fee. Growth in the clinics was phenomenal and simultaneously showed 6,254 new outpatients for a total of 23,510 visits.

The College Professors of Medicine, Surgery, and Obstetrics each had a clinical teaching ward for student instruction, with the privilege of having assistants for whom they were responsible. Appointees to the Hospital Staff up to 1879 were: John H. Brinton, Samuel W. Gross, Francis F. Maury, and Richard J. Levis (Surgery); Jacob Solis-Cohen (Laryngology); James C. Wilson, John B. Roberts, followed in 1878 by W.W. Alzach and Oliver Rex (Medicine); Frank H. Getchell and J. Ewing Mears (Gynecology); Laurence S. Turnbull (Aural Surgery); William Thomson (Ophthalmology); and Morris Longstreth (Pathology). This select and highest calibre group of physicians was well qualified for the challenges of the new Hospital.

So rapid was medical progress and so strong the demand for more space that within thirty years this ornament to the city and the Medical College became antiquated. In 1907 another new Jefferson Medical College Hospital, the most modern possible to that time, was opened at the corner of Tenth and Sansom (now Old Main Hospital). At that time the 1877 hospital was converted for nurses' purposes, but the connected amphitheater ("pit") had a more glorious survival until the last surgical clinic was held there by Dr. John Chalmers DaCosta before the junior and senior classes on May 10, 1922. 3

There have been three clinical amphitheaters ("pits") in Jefferson's history, each with a life span of fewer than 50 years. The first one (1828–1877), in which McClellan, Pancoast, Mutter, and Gross operated, constituted the upper lecture room of the College. The only pictorial representation of this first pit was in Eakins' masterpiece, The Gross

![Fig. 2-22. Children's Ward (1877 hospital).](image-url)
Clinic. The second pit (1877–1922) was in the left wing of the detached Hospital described in this chapter. The third (1924–1966), in the Thompson Annex, was designed to replace the previous one of the 1877 Hospital. The editor vividly recalls performing his first gastroenterostomy in that last pit before the senior class in 1945 at the end of one of Dr. Thomas Shallow's Wednesday afternoon clinics. None of the amphitheaters was limited to surgery, however, but included collegiate sessions in most branches of instruction.

The second pit, which is a main theme in this chapter, was considered to be “holy ground” by Dr. John Chalmers DaCosta because of what “man has wrought for his fellow man.” The first clinic of this new amphitheater was held by the elder Gross. The first surgeon to use Listerian antisepsis in this arena was the younger Gross. The first operation in Philadelphia for stone in the kidney was also performed here by the younger Gross. In addition to the two Grosses, the two Pancoasts, and John Brinton, Francis Maury, W. Joseph Hearn, James Barton, Richard Levis, W.W. Keen, and John Chalmers DaCosta, many other eminent surgeons operated here. Jacob Mendes DaCosta, Roberts Bartholow, Theophilus Parvin, Ellerslie Wallace, and John Barclay Biddle were only a few of the Jefferson notables who taught there. Guest lecturers from abroad included Esmarch of Kiel, Mikulicz of Breslau, Faure of Paris, Lorenz of Vienna, MacEwen of Glasgow, Lawson Tait of Birmingham, Annandale and Chien of Edinburgh, and, from London, Bryant, Durham, Horsley, Balance, and MacCormac. Jefferson's illustrious graduate, J. Marion Sims, “Father of American Gynecology,” lectured here, as well as did Hunter McGuire. The latter was forgiven for having led many Philadelphia medical students to the Confederate side and was granted an LL.D. degree by Jefferson in 1888.

Good photographs of Jefferson's second pit exist (Figure 2-24), but the general features bear description. It was completely circular and seated 600 on stiff wooden benches with straight high backs. Above the northern doorway, which opened into a corridor, was a marble bust of Joseph Pancoast (now in Scott Library). By this doorway was the sink. Above the southern doorway was a marble bust of George McClellan (now in Scott Library). The floor of the arena was wood, and the sides of the center were tiled. In the middle of the pit stood the famous wooden operating table, a hand-down from the first pit and portrayed by Eakins in The Gross Clinic. It miraculously survived through various stages of storage, rediscovery and restoration, until its present preservation as an archival treasure in the Samuel D. Gross Conference Room of the Surgery Department.

A surgical clinic in the later years of the first College pit and early years of the second one in the new detached Hospital would have been much the same. One typical of the elder Gross could not be better described than in the words of John Chalmers DaCosta, who participated and became the first Samuel D. Gross Professor of Surgery:

"As a preliminary to the clinic a number of little tables would be brought in to hold the cases of..."
Instruments. The knives had ivory handles and were beautiful tools. Assistants set out different sizes of silk, various shapes and sizes of needles, marine sponges in basins, wax for strengthening ligatures, and perhaps a furnace for the actual cautery, such a furnace as is used by the tin roofer. Suppose the case was lithotomy. The patient was brought in under ether (Doctor Joseph Hearn administering the anesthetic), and he was pulled down to the end of the table, put into the lithotomy position and held in it by a frame and straps. On the floor, at the foot of the bed, was a wooden box of sawdust placed to catch as much of the blood as possible. Doctor Gross wore a long blue coat, a costume worn in many previous combats. Dr. James M. Barton was the chief assistant. The bladder was filled with water. A stone sound was passed into the bladder and was held by the chief assistant. Doctor Gross bent down on one knee, picked up the knife, passed it into the urethra until it struck the sound, carried it on into the bladder. As he withdrew the knife he inserted a finger, thus blocking the wound and the stone dropped right on the end of the finger. The whole operation was performed with a speed and dexterity simply marvelous, from twenty to thirty seconds being usually sufficient for the procedure. Of course, before the operation was begun, the case was lectured on and the contemplated procedure was carefully explained. Doctor Gross talked during the operation, demonstrating every step of it. Gathered around in the arena one could usually see Drs. William Keen, Oscar Allis, Richard J. Levis, John Brinton, the younger Gross, Frank Maury, Joseph Pancoast, Thomas A. Andrews, and others. Any distinguished surgeon visiting Philadelphia at that time was certain to be there. In fact, it was seldom that Doctor Gross did not have some eminent man to introduce to the class. It was the foremost surgical clinic in America.

Over a period of 30 years (1877–1907) this Hospital trained 5,000 doctors in its halls; cared for 2,000,000 patients in wards and dispensaries; treated nearly 50,000 accident cases (Figure 2-23); and graduated 148 nurses. By the turn of the century the hospital was antiquated; 125 beds were insufficient for the demand; it was too small for
the volume of work and not fireproof. By 1902 it was possible to demolish the old Medical School building at Tenth and Sansom and erect the new Hospital ("Old Main"). The 1877 Hospital was maintained for nurses' educational purposes and quarters, and the clinical amphitheater was continued for surgery and teaching until the Thompson Annex replaced it in 1924.

References

4. Ibid., p. 38.

The Scientific Transition: Laboratory Courses and Specialization

The first Jefferson Medical College Hospital of 1877 was devoted not only to patient care but to the teaching of its medical students. In sharing this concept with the University of Pennsylvania, Philadelphia remained in the forefront of medical education for at least another decade before Johns Hopkins in Baltimore would spring forth with further innovations. Toward the end of the 1870s, as Lister's Principle of Antisepsis (1867) received wider acceptance, and as bacteriology as an entity became recognized, a transitional period was developing in which science began to enhance the art of medicine. Until this time, the laboratory instruction of Jefferson students had been limited to anatomy and study of specimens in the pathology museum.

After construction of the 1877 Hospital, the Board of Trustees accelerated its plans by purchasing the property at the southwest corner of Tenth and Sansom Streets, adjacent to the Grecian-
columned College, for erection of a laboratory facility in the basic sciences. The President of the Board at that time was Dr. Emile B. Gardette, himself a graduate of Jefferson in the Class of 1838. The new building, which was completed for the 1879-1880 session, provided laboratories for operative and minor surgery, practical chemistry, microscopy, and physiology (Figure 2-26).

In 1877, Benjamin Howard Rand had to resign as Professor of Chemistry because of failing health and was succeeded by Dr. Robert Empie Rogers (Figure 2-27). The latter brought with him an experience of 25 years at the University of Pennsylvania. Rogers established the first student laboratory course at Jefferson and oriented his teaching to the newly arrived era of physiological chemistry.

John Barclay Biddle, Professor of Materia Medica and Therapeutics as well as dean (1873–1879), died in 1879. His vacant Chair was filled by Roberts Bartholow (Figure 2-28), and the Deanship was taken by Ellerslie Wallace. Bartholow came to Jefferson from the Ohio Medical College with a strong reputation as teacher and author of a well-known work *Materia Medica and Therapeutics*. While active at Jefferson until 1890 he published his *Treatise on the Practice of Medicine* and served as Dean from 1883 to 1887. His handsome portrait is in Jefferson's art collection.

The College suffered the premature death of Professor James Aitken Meigs in 1879. Dr. Henry C. Chapman accordingly was promoted from Demonstrator of Physiology to the Chair. In that capacity he was successful both as teacher and investigator. Professor Chapman took advantage of the new Laboratory Building to make liberal expenditures year by year for even better and newer apparatus for study and research.

In 1879, Dr. Morris Longstreth (Figure 2-29) was appointed Demonstrator of Pathological Anatomy. His instruction, which also included

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Fig. 2-26. The new Laboratory Building erected adjacent to Medical Hall at Tenth and Sansom Streets (1879). The site was previously occupied by two stores.
FIG. 2-27. Robert Empie Rogers, M.D. (1813–1884), Professor of Chemistry (1879–1884), established the first student laboratory course in chemistry.

Histology, was aided by autopsy material from the Pennsylvania and Jefferson Hospitals. The laboratory of materia medica and pharmacy in the Medical Hall was equipped in the following year. Necessary appliances for the practical course, as well as a room for special research in the physiological action of drugs, were provided (Figure 2-30). All the new laboratories were put in charge of Demonstrators under the supervision of the Professors of each branch.

No sooner was the Laboratory Building erected than more space was needed. By 1881 the classical Grecian facade of the College was replaced by one of Victorian style to match the new Laboratory Building. This permitted a forward expansion of space that increased the seating capacity of the lecture rooms (Figure 2-31). An additional story was added to provide even more laboratory rooms.

In 1882, Dr. William S. Forbes (Figure 2-32), while Demonstrator of Anatomy at Jefferson, was prosecuted in criminal court as an alleged...
Fig. 2-30. The Laboratory of Pharmacy (ca. 1880).

Fig. 2-31. Renovation of Medical Hall (Ely Building) in 1881, replacing the Grecian facade with a Victorian styled one.
"resurrectionist," or body snatcher, in connection with obtaining cadavers for dissection by the students. In 1866 he had previously influenced the passage of a law that permitted dissection of unclaimed bodies in Philadelphia County, but the distribution was inequitable and was not sufficient for the large classes at Jefferson. At trial he was not only vindicated but thereby caused enactment of a perfected anatomical bill that provided compulsory distribution of unclaimed bodies in fair ratio to the needs of the various medical schools. The Eakins portrait of Dr. Forbes in Jefferson's collection shows his hand resting on the anatomical act that he fostered.

Also in 1882, the venerable Samuel D. Gross retired from the Chair of Surgery he had held for the past 26 years. In that capacity he had not only made Jefferson famous but promoted American medicine as a whole throughout the world. By then the subject matter in surgery had expanded to such an extent that it was necessary to divide the Surgical Chair. The younger Gross (Samuel W.) (Figure 2-33) was appointed to the Chair for Principles of Surgery and Clinical Surgery, and John Hill Brinton (Figure 2-34) filled the Chair for Practice of Surgery and Clinical Surgery. Samuel W. Gross died prematurely in 1889 and was succeeded by William Williams Keen (Figure 2-35). The latter had performed the first removal of a brain tumor with permanent cure in 1887 and in 1891 aided in the secret operation upon President Cleveland on a yacht for excision of a verrucous carcinoma in the roof of the mouth. In 1883 the declining health of Dr. Ellerslie Wallace compelled him to resign the Chair of Obstetrics in which he had served for 21 years and as Dean (1879–1883). Theophilus Parvin, M.D., LL.D., of Indianapolis, a widely known writer and previous Professor in several medical colleges, filled the vacancy (Figure 2-36). His textbook Science and Art of Obstetrics (1886) went into a second edition (1890). At Jefferson he promptly agitated for a separate Lying-In Building because the 1877 Hospital did not have sufficient available room. After the failure of makeshift changes, in 1889 he finally obtained a building at Second and Pine Streets where he established the first obstetrical clinic in America. Thirty-four cases in which the students were given practical instruction were delivered without a maternal death. Parvin

![Fig. 2-32. William S. Forbes, M.D. (1831–1905), Professor of Anatomy (1886–1905), secured passage of the Anatomy Act of 1882, which legalized equitable distribution of cadavers in Pennsylvania for medical schools.](image1)

![Fig. 2-33. Samuel W. Gross, M.D. (1837–1889); Professor of Principles of Surgery and Clinical Surgery (1882–1889).](image2)
reported this experience before the New York Academy of Medicine where he urged the making of clinical obstetrics a part of the curriculum of all medical schools. In 1894 the maternity facility moved to larger quarters at 224 West Washington Square, where it remained until 1924 when ample space was provided in the new Thompson Annex.

During 15 years of Professorship at Jefferson (1883–1898), Dr. Parvin was acknowledged as a national leader in his field and also was considered as one of the greatest gynecologists in his day. His death in 1898 at age 69 was a serious loss to the school and the many important organizations of which he was a member.

After the retirement of Robert E. Rogers, Professor of Chemistry, in 1884 and the succession of Dr. John W. Mallet for only one year, James W. Holland (Figure 2-37) was appointed Professor of Medical Chemistry and Toxicology in 1885. Dr. Holland, a native of Kentucky, had graduated from Jefferson in 1868 and served for 13 years as Chairman of the Practice of Medicine and Clinical Medicine at the University of Louisville. His lectures at Jefferson were remarkable for their thoroughness and practical application to clinical medicine. He served in this Chair for 27 years until 1912 and also as Dean for 29 years from 1887 to 1916. During his incumbency he improved the

chemical laboratory course from an elementary status to one of relevance with physiology and clinical medicine. His literary contributions consisted of *Diet for the Sick, Common Poisons and the Urine, Inorganic Poisons, Medical Chemistry and Toxicology*, and many scientific papers. Among many important organizations, he served as Member of the Council of Medicine of the American Medical Association and as President of the Association of American Medical Colleges.

Eakins painted Holland reading the “Roll Call” of students graduating from Jefferson. The original is in the Boston Museum of Art, and a copy resides in the Eakins Gallery at Jefferson. An original in oil by Adolph Borie also hangs in the Dean’s office suite.

**FIG. 2-34.** John H. Brinton, M.D. (1832–1907); Professor of Practice of Surgery and Clinical Surgery (1882–1907).

**FIG. 2-35.** William W. Keen, M.D. (1837–1932), Professor of Surgery (1889–1907), performed the first removal of a brain tumor with permanent cure.
In the 1888–1889 session, five clinical lectureships were established within the Hospital to provide students with latest instruction in the evolving specialties of the times. The lectureships were administered as follows: Oscar H. Allis (Orthopedic Surgery), Charles E. de Medici Sajous (Laryngology), Oliver P. Rex (Children's Diseases), A. Van Harlingen (Dermatology), and James C. Wilson (Renal Diseases). Practical instruction was also given in the use of the laryngoscope and the ophthalmoscope.

In the session of 1890–1891 an Honorary Professorship of Laryngology was created for Dr. Jacob da Silva Solis-Cohen (Figure 2-38), whose reputation in this field was nationwide. At the close of this session, Dr. Jacob Mendes DaCosta resigned his Chair of Theory and Practice of Medicine after having taught admiring classes for 24 years. He was considered one of Philadelphia's ablest clinicians, an outstanding contributor to the medical literature, and a pioneer in cardiology.

FIG. 2-37. James W. Holland, M.D. (1849–1922); Professor of Chemistry (1885–1912) and Dean (1887–1916).

FIG. 2-36. Theophilus Parvin, M.D. (1829–1899), Professor of Obstetrics (1881–1898), established the first obstetrical clinic in America.

FIG. 2-38. Jacob da Silva Solis-Cohen, M.D. (1838–1927), Honorary Professor of Laryngology (1891), was a pioneer in that field.
Dr. James Cornelius Wilson (Jefferson, 1869) succeeded Dr. Jacob DaCosta in the Chair of Medicine (Figure 2-39). Two of his brothers also were Jefferson graduates, and his father, Dr. Ellwood Wilson (Jefferson, 1845), had served on the Board of Trustees. Wilson was a close friend of Dr. William Osler, and he joined Osler and Samuel W. Gross’s widow for lunch on their wedding day. Wilson served for 20 years with great distinction as teacher, author, and busy clinician. His patient, Miss Anna J. Magee, endowed the Professorship of the Chair of Medicine in 1916.

Dr. Roberts Bartholow suffered a breakdown in his health in 1890, and his course in Materia Medica and Therapeutics was taught for that year by Dr. Albert P. Brubaker, who in later years succeeded Dr. Henry Chapman as Professor of Physiology. Bartholow was made an Emeritus Professor in 1891 and was succeeded by Dr. Hobart Amory Hare (Figure 2-40).

Born in Philadelphia, the son of an Episcopalian bishop, Hare graduated in medicine from the University of Pennsylvania in 1884. After receiving the additional degree of Bachelor of Science from the University in 1885 he traveled to Leipzig where he pursued physiologic research under Ludwig. This was followed by work in Berne and London. These early years were marked by his award of an unusual number of prizes. At his medical graduation he was awarded the Faculty Prize for his thesis; he was twice the recipient of the Fiske Fund Prize of the Rhode Island Medical Society (in 1885 and 1886); and he won the Cartwright Prize of the New York College of Physicians and Surgeons in 1889 (with Dr. Martin); the Warren Triennial Prize of the Massachusetts General Hospital in 1889 (with Dr. Martin); the prize offered by the Royal Academy of Belgium for the best essay on epilepsy in 1889; and the Boylston Prize of Harvard University in 1890. Hare’s supreme honor was the award of the Fothergillian Gold Medal of the Medical Society of London in 1888 for his work on Mediastinal Tumors; he was the only American ever to attain this distinction. The medal was bequeathed to the College of Physicians of Philadelphia (Figure 2-41). Within six years of graduation Hare was elected Clinical Professor of Diseases of Children at the University of Pennsylvania.

Hare’s appointment at Jefferson was to last for 40 years, until 1931, the longest of any Chairman.
Hare supplemented his M.D. degree from the University of Pennsylvania (1884) by taking a second at Jefferson in 1893. This accounts for his membership in and later 1909 Presidency of the Alumni Association. He served as President of the College of Physicians of Philadelphia from 1925 to 1928. He was a member of the Board of City Trusts and received an LL.D. degree from the University of Pennsylvania in 1921. The Class of 1927 presented Hare’s portrait to the College.

The death of Hare in 1931 at age 69 from carcinoma of the prostate was the end of the era of materia medica at Jefferson. This year marked the establishment of the Department of Pharmacology in the basic sciences, which then covered the subject material of materia medica and pharmacy during the first and second years of the four-year course. The remaining portion of therapeutics became a clinical subject in the last two years of the curriculum that was taught successively by Drs. Elmer Funk, E. Quinn Thornton, Ross V. Patterson, and finally by Martin E. Rehfuss.

Dr. Hare kept a high profile and leadership position in the Executive Faculty from the very beginning of his long tenure of service. In this respect he worked closely with Mr. William
Potter, who became a member of the Board of Trustees in 1894. It was mainly through the efforts of Mr. Potter that Jefferson ended its just more than 70 years as a proprietary school and reorganized into a nonprofit Jefferson Medical College and Hospital under the unified control of the Board of Trustees.

References

College Reorganized: End of Proprietary Years (1895)

In the session of 1894—1895 the total number of students was 711. There were 219 in the first year, 237 in the second, 229 in the third, and 26 special students. At the annual commencement on May 15,
1895, the degree of Doctor of Medicine was conferred on 148 graduates. This brought the total number since inception of the College to 10,398. There was no external evidence that the great reform of 1895 was taking place and that a tradition of 70 years would belong to a bygone era. The issue was the reorganization of the College from a proprietary school, in which the profits were divided among the Professors, to a nonprofit organization of combined College and Hospital under absolute unified control of the Board of Trustees. The Professors would no longer share profits and would serve on fixed salaries. The time had come when Jefferson Medical College must be such not only in name but in fact, dedicated solely to the welfare of the community and devoid of personal benefit. James W. Holland, Dean at the time, alluded clearly to this subject in his history of the College: "When attempting to raise endowments to carry out the expensive improvements they had projected, the Trustees and the Faculty often encountered the objection that as the receipts in excess of expenditures were divided among the Faculty, they were practically asking for money to be given to the Faculty and not to the cause of medical education or suffering humanity. In order to end this system, complete reorganization was effected by the Trustees, which was cheerfully accepted by the Faculty."

Since 1893, the Trustees had been seriously considering replacement of the antiquated and undersized Ely Medical Hall of 1828 that had undergone successive renovations and expansions. As would be expected, some members of the Board did not favor the continued plans for improvement and the measures required to implement them. Others also were not quick to endorse the abolition of the established system in which the College had been operated directly by the Faculty and only indirectly by the Board. The minority of "status quo" proponents were peacefully won over by the missionary work and enlightened agitation of the progressive members of the Board.

In 1894, the members of the Board of Trustees were Edwin H. Fitler, President; George W. Fairman, Secretary; Edward H. Weil, Treasurer; and Joseph B. Townsend, Joseph Allison, Simon Gratz, Michael Arnold, Henry D. Welsh, Sutherland M. Prevost, George D. McCready, Thomas B. Wanamaker, Edward V. Morrell, and Luther B. Bent. Later that year, Mr. Townsend became President and Mr. William Potter was elected a member. The latter championed and spearheaded the reorganization drive, and served for thirty years (1896-1926) as President of the Board with outstanding energy and advancements for Jefferson.

In the pivotal year of 1895 other members who came into the Board were Joseph de F. Junkin, Louis C. Vanuxem, Samuel Gustine Thompson, Louis H. Biddle and William H. Newbold. They aided in the special issue of reorganization of the business management and educational mission of the College. In so doing it was not necessary to create waves, to shatter previously held ideals, to remove Professors from their held positions, or to correct abuses. The Trustees rightly assumed absolute management of the property and policy of the institution. The reorganization act was adopted by the Board on February 1, 1895, to become effective on June 1 of that year.

The Faculty voiced no dissent at the action of the Board. They had been paying a rental fee of $3,993 a year for use of the College and Hospital. Although shared profits had sometimes been alluded to as the "Professorial Jackpot," none of the Professors became affluent in this system. Indeed, they increasingly had to add funds from their own resources to maintain a Department in accord with the progress of the times. Public appeals could not be ethically solicited if the Professors were to benefit personally from the donors. To the added credit of a dedicated Faculty, the Jefferson Professors were seeking at the same time to upgrade the curriculum. In 1891, a three-year course became mandatory, although the requirement for admission was still only a high school diploma or its equivalent. It would be 1914 before the requirement would be raised to one year of college. The Faculty subsequently in the 1894-1895 session stated in the 70th "Annual Announcement" that "all persons beginning their medical studies by matriculation after June 1, 1895, must take four annual courses."

Thus, in the 1895-1896 session the College was no longer proprietary, and the curriculum was a four-year graded course. It was expected that the
lengthened course of study would temporarily affect the financial status of the school. On the contrary, the popularity of the College increased at once. The aggregate attendance was 623, of which 95 were first-year students. The first-year students increased to 112 by 1897 and to 185 by 1899. By 1898 the designation of classes as freshman, sophomore, junior and senior was adopted as in other collegiate institutions.

The salary of “non-practicing Chairmen” was set at $5,000, but by 1898 was reduced to $3,700. The following year it was stipulated at $4,000 and continued at this level for several years. Mr. Daniel Baugh, a Trustee from 1896 to 1927, induced his fellow trustees to restore the $5,000 level and pledged to cover any deficit from his own private funds.

The active Professorial Faculty of 1895–1896 was composed of Drs. James C. Wilson (Medicine), John H. Brinton (Practice of Surgery), William W. Keen (Principles of Surgery), Theophilus Parvin (Obstetrics), Edward E. Montgomery (Gynecology), Hobart A. Hare (Materia Medica and Therapeutics), William Thomson (Ophthalmology), William S. Forbes (Anatomy), James W. Holland (Chemistry and Dean) and Henry C. Chapman (Physiology). The Chair of Pathology was vacant but would be filled the following year by Dr. William M.L. Coplin.

In its newly constituted authority the Board functioned with four standing committees—College Committee, Hospital Committee, Committee on the Training School for Nurses, and Committee on Finance. The subsequent history of Jefferson will be detailed through the various Departments and Divisions that progressed until and beyond the University status, which was achieved in 1969.

References