

## History of Surgery

### United States

### Excerpted from the Illustrated History of Surgery

**Dr. Mostafa Jaberansari\***

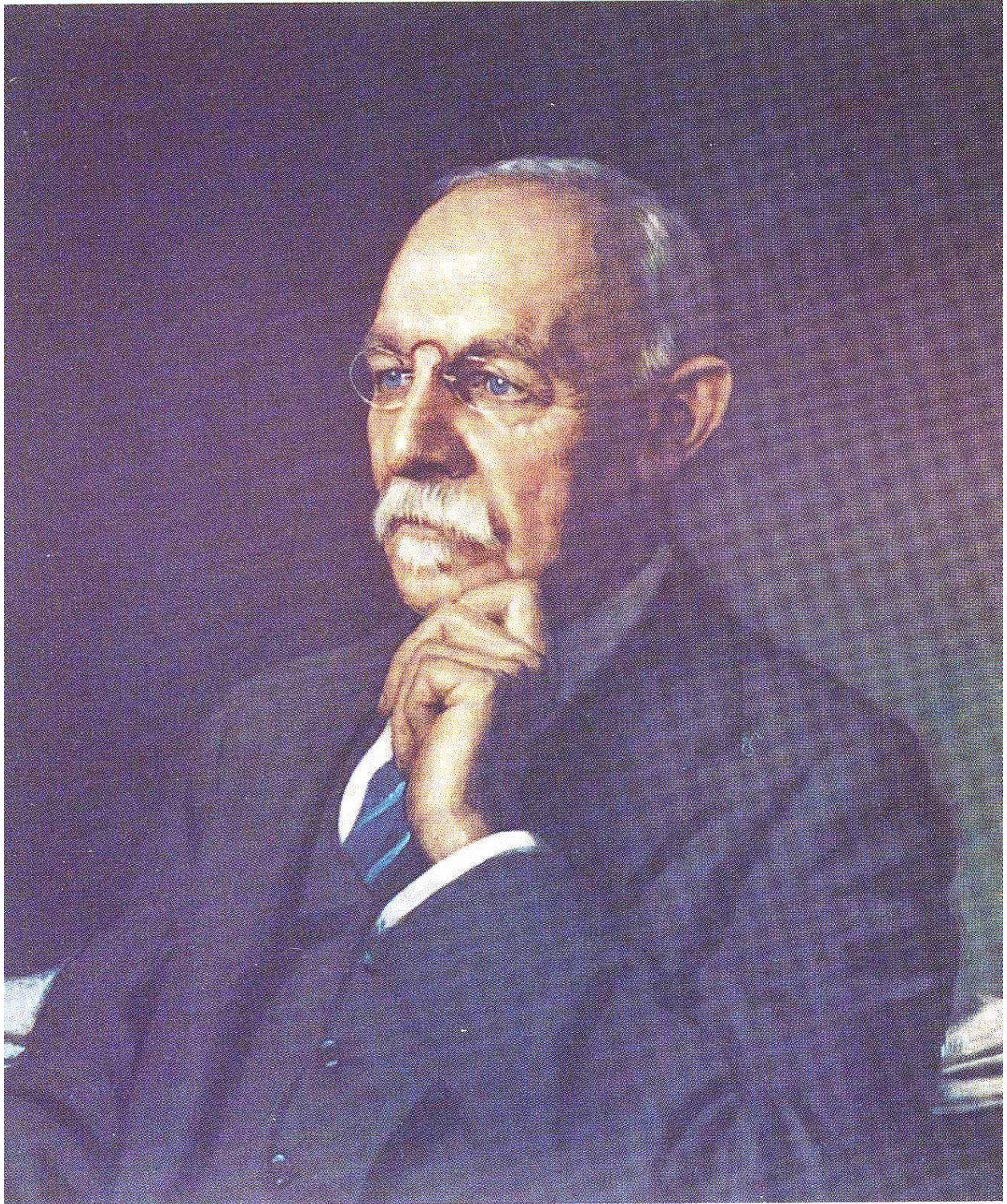
By the end of the nineteenth century, American surgery had achieved a remarkable level of maturity and excellence, firmly grounded in its professional principles. Major surgical centers had been established across the United States, and the field of surgery continued to advance and expand. However, American surgeons lacked the group solidarity that was fostered by organizations such as the Royal College of Surgeons of Great Britain or the French Academy of Surgery. Although associations and societies like the American Medical Association (AMA, founded in 1847), the American Surgical Society (ASA, founded in 1880), and various specialized group associations had been established, they lacked significant legislative power. These societies primarily served as educational gatherings and had no authority or supervision over the issuance of licenses or permits for physicians and surgeons. The absence of an organized system for the education and training of surgeons, as well as the issuance of certificates and licenses for surgical practice, persisted into the twentieth century. American surgeons, like their European counterparts, were individually distinguished and successful. Understanding the full details of the historical development and evolution of surgery in the United States is impossible without knowing about the personal lives of the surgeons. Nathan Smith (1762–1839), from Rehoboth, Massachusetts, studied at Harvard Medical School and graduated in 1790. Early in his professional life, he developed an interest in medical education and persuaded the trustees of Dartmouth College to establish a medical school. With his proposal accepted, Smith traveled to Edinburgh and London to further his education and enhance his professional abilities. In the fall of 1797, he returned to the United States and shortly thereafter began his medical education courses at Dartmouth. Smith served as a full-time professor at Dartmouth and taught his courses for many years.

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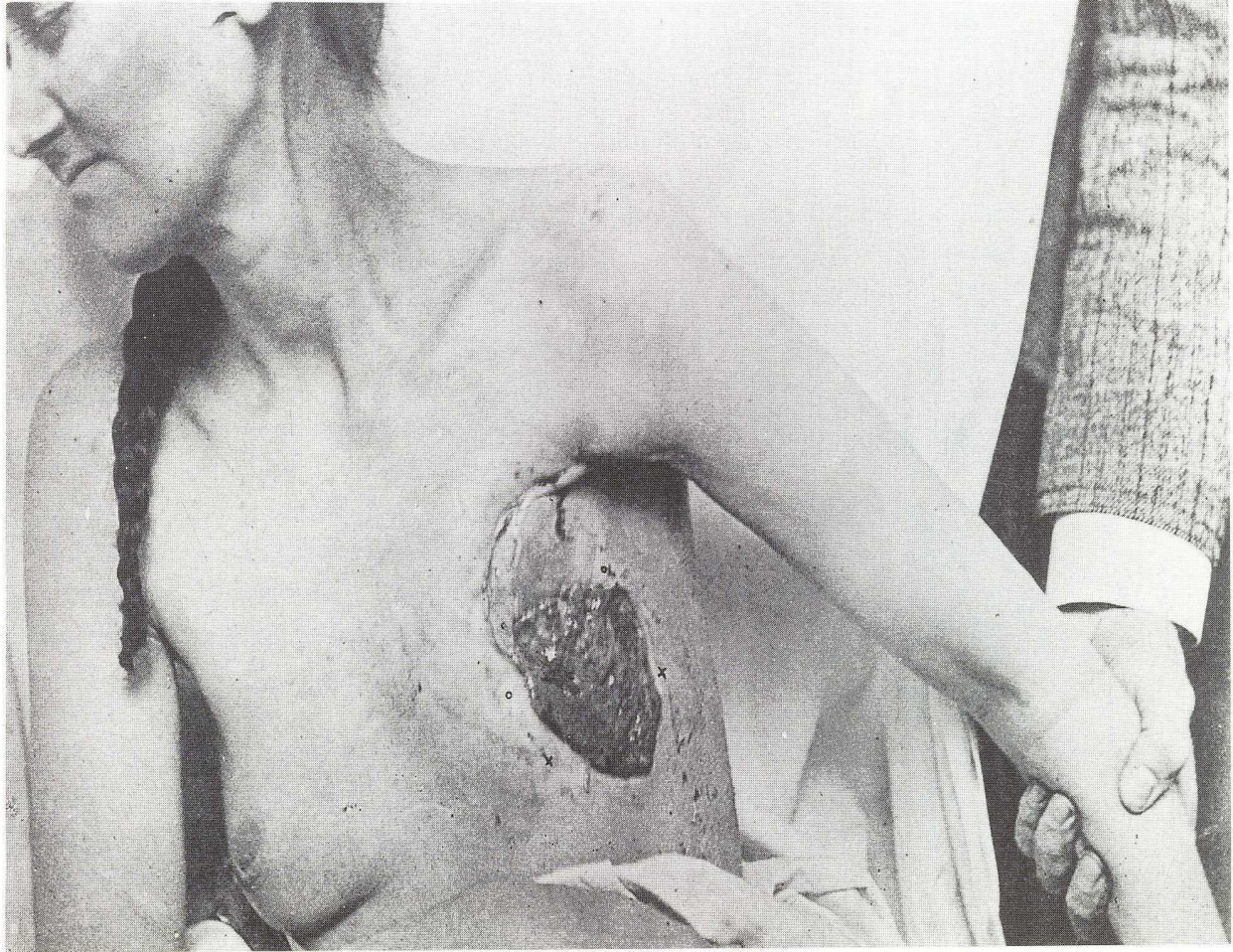
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*Image 1: William Stewart Halsted, an oil painting made from a photograph taken by John H. Stokes Dale in the winter of 1922. Halsted introduced laboratory sciences into American surgery. As an innovative and creative pioneer and a charismatic and respected professor, he laid the foundations*

*upon which the American school of surgery was built more than any other American surgeon (Author's personal collection).*



*Image 2: The first published photograph of a wound from Halsted's radical mastectomy method. The cut areas are completely filled with blood clots (Johns Hopkins Hospital Bulletin, Vol. 2, pp. 314-225, 1890-1891).*

In 1813, Smith was invited to help establish the medical school at Yale University and to accept the chair of physics, surgery, and obstetrics. Smith also founded the medical department at Bowdoin College in Maine in 1830.

He was not a prolific writer and left behind no major works. Most of his written contributions were published in medical journals and periodicals. Some of these included the report of the second ovariectomy performed in America (1822), the report of the first amputation at the knee joint in the country (1825), and an article on osteomyelitis (1827). Smith also recognized the contagious nature of typhoid fever and reported it in his classic work titled "A Practical Essay on Typhoid Fever" (1842).

Wright Post (1766–1822) apprenticed under Richard Bayley (1745–1801) in New York City. From 1784 to 1786, Post pursued studies in London and, a few years after his return, was appointed professor of surgery at Columbia College (1792). In 1811, he accepted the chair of anatomy at the newly established College of Physicians and Surgeons. Apart from a few articles about his patients, including the report of the first ligation of the common carotid artery in the United States for an aneurysm (1814), the description of the second ligation of the external iliac artery (1814), and the report of the first successful ligation of the subclavian artery in the United States (1817), he left no other written works.

John Davidge (1768–1829) studied medicine under brothers James (1739–1819) and William (1751) Murray, who practiced in Annapolis. He then attended classes in Philadelphia, Edinburgh, and Glasgow, receiving his medical degree from the University of Glasgow in 1793. Following a brief period of practice in London, he relocated to Baltimore, where he contributed to the founding of the University of Maryland's medical school and held the chair of anatomy and surgery from 1807 until 1829. In 1823, he reported the first case of parotid gland removal in America.

Philip Syng Physick (1768–1837) was born in Philadelphia and completed his university education at the University of Pennsylvania. He apprenticed for three years under Adam Kuhn (1741–1817). In 1789, Physick went to London to study under John Hunter, living with his family. Three years later, after completing a one-year training course in Edinburgh, he received his medical degree in 1792. Shortly after returning to Philadelphia, Physick was appointed surgeon at Pennsylvania Hospital (1794), and a decade later, he assumed the newly established chair of surgery at the University of Pennsylvania.

In 1819, he transferred to the chair of anatomy and remained in that position for twelve years until his retirement. Although Physick was a creative, reputable, and respected surgeon, he never considered himself a capable writer. He was the first surgeon in the United States to use fine nylon threads (Seton) in unhealed fractures (1804) and to treat mandibular (lower jaw) fractures. He published the first report on the use of mechanical traction in the reduction of hip dislocation (1805) and provided the first report on the surgical repair of arteriovenous fistulas in America (1805). He introduced and promoted the use of a stomach tube as a tool for removing unwanted substances from the stomach (1813). His other works include the invention of dissolvable ligatures and children's ligators (1816), the treatment of strangulated hernias with the creation of a colcutaneous fistula (1826), and the development of a device that became the precursor to the guillotine tonsillectomy instrument. Physick's name is associated with proctitis accompanied by mucous discharge and burning pain, primarily involving the rectal valve crevices, and iridectomy with the creation of a circular hole.

David Hosack (1769–1835) received his doctorate in 1791 from the University of Pennsylvania and continued his studies for two years in Edinburgh and London. From 1796 to 1811, Hosack served as professor of botany and materia medica at the College of Physicians and Surgeons in New York City, teaching surgery in the last four years of this period. In 1811, he transferred to the chair of the theory and practice of physics and clinical medicine, remaining in that position until 1826 when he helped establish Rutgers Medical College in New York City. In 1815, Hosack received an honorary doctorate from Union College in Schenectady, New York, the first non-denominational college in the country. Although Hosack did not invent any new surgical procedures, he was recognized as a distinguished and skilled clinical surgeon. In 1798, he introduced the method of hydrocele treatment by injection to American surgeons. Fifteen years later, he emphasized the importance of leaving wounds open for healing in an article and reported the first case of mastectomy in the United States.

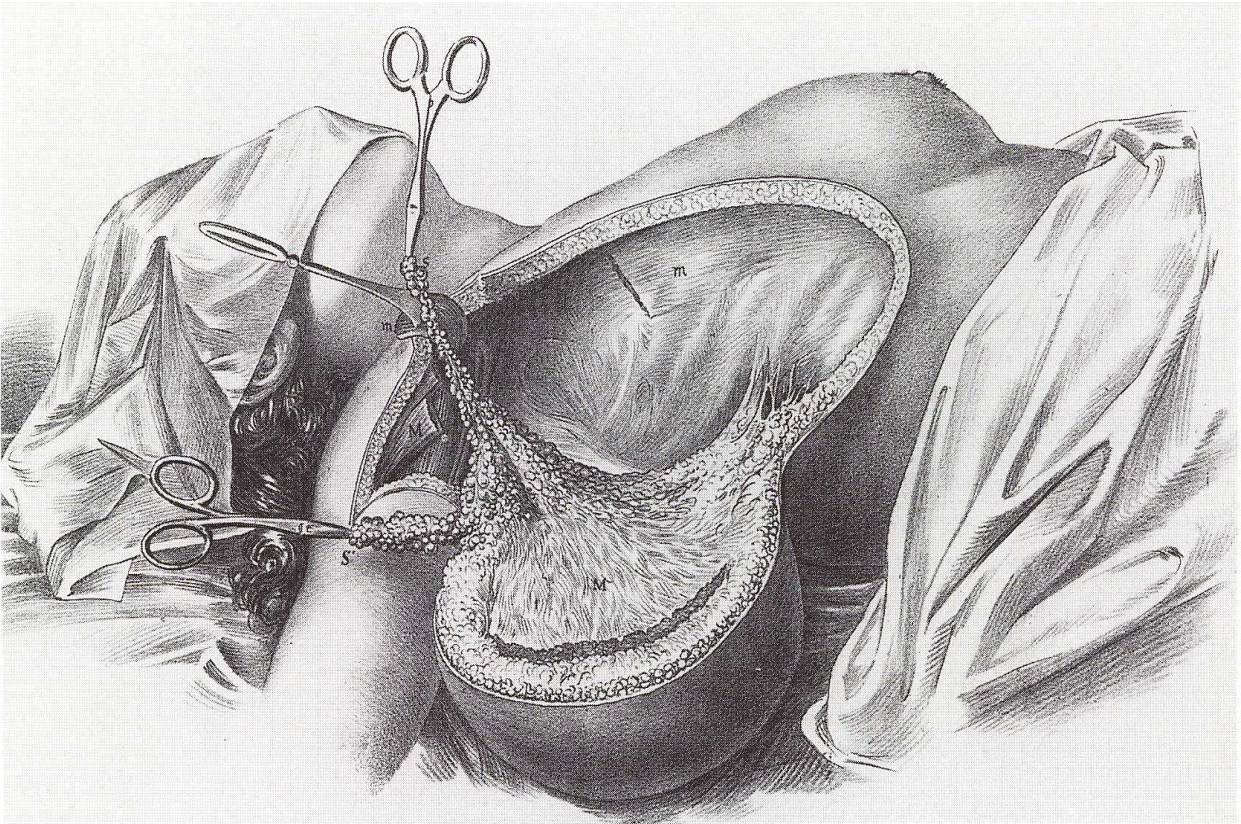
Ephraim McDowell (1771–1830) was a native of Virginia who apprenticed under a local physician. In 1793, he traveled to Edinburgh to attend classes taught by John Bell. Upon his return to the United States in 1795, he commenced practicing in Danville, Kentucky, where he earned a reputation for his general practice and surgical skills. Notably, he performed the removal of a bladder stone from James

Polk (1795–1849), who later became the President of the United States. In December 1809, McDowell introduced the ovariectomy as a successful procedure for treating ovarian tumors. However, due to his aversion to writing, he did not report this groundbreaking surgery until 1817. As with many significant medical reports, his work did not initially receive much attention, and his contemporaries showed little interest.

Horatio Jameson (1778–1855) graduated from the University of Maryland in 1811 and remained in Baltimore, where he became an influential and respected surgeon. In 1827, he founded the Washington Medical College and served as its professor of surgery. He is best known for several pioneering contributions: the first known report of resection of the upper jawbone (1821), an initial, though unsuccessful, attempt to remove a cancerous uterus through the vagina in America (1824), and an important article on various methods of controlling bleeding (1827).

John Collins Warren (1778–1856), the eldest son of John Warren, pursued his education in London and Paris following a brief apprenticeship under his father. He earned his doctorate from the University of Edinburgh in 1802. Upon returning to Boston in the same year due to his father's illness, he began his private practice. From 1806 to 1815, Warren served as an assistant professor of anatomy and surgery at Harvard University. Promoted to full professor in 1815, he held the position until his retirement in 1847. Warren was a founder of Massachusetts General Hospital (1821), the Boston Medical and Surgical Journal (1812), and the American Medical Association (1847). In 1846, he performed the first surgery using ether anesthesia. Warren's significant works include "Surgical Observation on Tumors" (1837), two treatises on ether anesthesia, "Etherization with Surgical Remarks" (1848) and "Effects of Chloroform and of Strong Chloric Ether, As Narcotic Agents" (1849), and a comprehensive book titled "Dislocation of the Hip Joint" (1824). He also authored an important article on the repair of cleft palate (1828).

Reuben Mussey (1780–1866) graduated from Dartmouth College in 1803 and apprenticed under Nathan Smith, obtaining his medical doctorate from the University of Pennsylvania in 1809. His professional life involved various relocations, during which he held numerous positions: professor of anatomy and surgery and theoretical and practical medicine at Dartmouth (1814–1838), professor of surgery at the Ohio Medical College (1838–1852), and professor of surgery at the Miami Medical College in Cincinnati (1852–1857). Mussey served as the president of the American Medical Association (AMA) in 1850. His written contributions to surgical literature are limited to case report articles published in various journals and periodicals. Among his most notable contributions are the report of ligating both common carotid arteries a few days apart to treat a vascular scalp tumor (1829) and the first reported scapulectomy (removal of the scapula bone) in the United States (1838).



***Image 3: Engravings depicting the earliest available visual representation of the Halsted radical mastectomy procedure in a pictorial and schematic manner (1894). These images were created by the renowned anatomical illustrator Max Broedel (1870–1941) and are among the first illustrations he prepared in the new anatomical illustration department at Johns Hopkins Hospital (Johns Hopkins Hospital Bulletin, Vol. 4, pp. 297-350, 1894–1895).***

John Syng Dorsey (1783–1818) was the nephew of Philip Syng Dorsey and apprenticed under his uncle. While working in his uncle's practice, he attended classes at the University of Pennsylvania and received his medical degree from the University of Pennsylvania in 1802. In 1803, he traveled to London and Paris to continue his studies. After returning to the United States, he practiced medicine in Philadelphia and was appointed professor of surgery at his alma mater in 1807. Shortly thereafter, he was chosen as a surgeon at Pennsylvania Hospital. Physick, who held the chair of surgery, was not a capable writer, so he requested Dorsey to compile his lectures and course materials into a surgical textbook. In response, Dorsey authored the two-volume "Elements of Surgery," the first systematic treatise on surgery in the United States, published in 1813. That same year, he was appointed professor of materia medica at the university, and in 1818, following Caspar Wistar (1761–1818), he assumed the chair of anatomy. In 1812, he reported the first successful ligation of the external iliac artery in America. Dorsey's success was short-lived, as he died of typhus a few days after delivering his first lecture on anatomy.

**John Ball Brown (1784–1862) apprenticed under various physicians in New England and moved to Boston in 1812, where he married the daughter of John Collins Warren. At the insistence of his father-in-law, he sought to specialize in orthopedic surgery. In 1838, he founded his orthopedic clinic. This clinic, the first specialized clinic and hospital in America, later became known as the Boston Orthopedic Institution. Brown did not leave behind many written works.**