The History of Surgery in Massachusetts

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Thomas Carlyle noted that “The history of the world is but the biography of great men.”1 The history of surgery in Massachusetts is full of great men who have made enormous contributions to the art and the science of surgery. I will concentrate for the most part on the century just past, and on the surgeons, mostly from Massachusetts but some from the other New England states, who have made those contributions and provided leadership and vision to the New England Surgical Society (NESS).

At the turn of the 19th century, surgical practice, and indeed medical practice as a whole, was chaotic. Many of the 11 medical schools in Massachusetts were of poor quality. In most instances, medical education consisted of a series of lectures and an examination, usually an oral one since most of the students could not read.2 Surgical training consisted of an internship of 1 year, followed either by practice or perhaps an assistantship. Only a fortunate few could go to Europe to study in the great clinics and universities before returning to a practice in the United States. Therefore, many surgeons were poorly trained by our standards.

Massachusetts had a long intellectual tradition, and was known as the “reading state.”3 Massachusetts’ surgeons, notably the great Warren family, made significant contributions to the development of surgery. The high point of the 19th century came in 1846 when John Collins Warren, MD, demonstrated the efficacy of ether anesthesia at Massachusetts General Hospital (MGH), Boston. His son, J. Collins Warren, MD, the first Moseley Professor of Surgery at Harvard Medical School, Boston, Mass, and the president of the American Surgical Association (ASA) in 1897, was influential in helping to raise the standards of medical education at the medical school by increasing the requirements for admission and lengthening the curriculum from 1 to 3 years. Massachusetts General Hospital was the leading hospital of its day, and was the leader in advancing surgical science. Boston surgeons, however, did not always have the foresight that they have today. When they were challenged by Henry I. Bowditch, MD, the Jackson Professor of Clinical Medicine at Harvard Medical School, to consider removing the gallbladder for stone disease, they demurred, and left the leadership in this area to others in Rochester, Minn, and in the middle West.4 Maurice H. Richardson, MD, the second Moseley Professor of Surgery at Harvard Medical School and the surgeon-in-chief at MGH, was approached by Philemon E. Truesdale, MD, of Fall River, Mass, in 1909 with the idea of starting an NESS. The times were conducive to the development of elite specialty societies with limited membership. These societies offered opportunities for education and fellowship, but were influenced by the increasing push toward specialization and the need for the development of markers of quality.5 A member of an elite society would be granted increased prestige, and perhaps some competitive advantage. Richardson reacted favorably to Truesdale’s suggestion, although most Boston surgeons did not, but he died before any action could be taken. It was not until 1916 that Samuel J. Mixter, MD, under the urging of Truesdale and Peer P. Johnson, MD, of Beverly, Mass, agreed to endorse the concept of a new society and
to become its first president. Boston surgeons, hitherto reluctant, became enthusiastic supporters of the new organization.

**PRESIDENTIAL ADDRESSES**

In the years of its existence, the NESS has had 80 presidents, 43 of whom were from Massachusetts. The presidential addresses of the society cover a great range of issues, ranging back in history to Hippocrates and looking forward to the space-age future. Of the 76 extant addresses, by far the greatest number (n=26) deal with historical subjects. There are reviews of the early history of surgery in each of the New England states. Massachusetts’ history is particularly well presented by David Cheever, MD, who traced the careers of several early surgeons, from Samuel Fuller, MD, who came to America on the Mayflower and was the first physician to settle in America, through John Warren, MD, Nathan Smith, MD, John Collins Warren, MD, Henry J. Bigelow, MD, David Williams Cheever, MD, John Homans, MD, and Maurice H. Richardson, MD. Bentley Colcock, MD, reviewed the educational and intellectual framework in which the early surgeons worked, and described the “religious toughness that encouraged sound intellectual work, together with a fervent love of learning” that characterized them. Fred Bates Lund, MD, who presided over the meeting of the Clinical Congress of Surgery in 1913 at which the American College of Surgeons (ACS) was founded, was also a classical scholar and an outstanding surgeon at the Boston City Hospital. He reviewed the life and writings of Hippocrates and put them in the context of Periclean and post-Periclean Athens; the strife of the Peloponnesian Wars; and the teachings of Socrates, Plato, and Aristotle.

Other presidents addressed themselves to their individual heroes, such as J. Gordon Scannell, MD, who paid tribute to Edward D. Churchill, MD; and Frederick P. Ross, MD, who honored Elliott C. Cutler, MD. Truesdale traced the history of medical illustration from antiquity, and suggested the use of the new concepts of medical audiocinematography in surgical education. He was the first surgeon to make a sound motion picture of a surgical procedure. Gordon Donaldson, MD, reviewed the heroic achievements of Nathan Smith, who played a role in the founding of 4 New England medical schools, and called him “the first all New England surgeon.” “In the New England area, and perhaps in this country, no man contributed more than did Nathan Smith, not only to the birth of surgery as a specialty, but to the early evolution of the medical teaching institution.” The Distinguished Service Award was first set down by Hippocrates, but learning and progress are not automatic and must be carefully cultivated. Burke also noted the importance of the education of the public. “Education is our task,” not only in the classic sense but also in the education of patients as well, so that they can make informed judgments and can understand the nature of and the need for progress. It is clear that progress cannot be assumed or taken for granted. The idea of progress is “an interpretation of history and a philosophy of action. . . . In the idea of progress, accordingly, there is inevitably an ethical element. It implies that the stream of history flows in a desirable direction on the whole; and at once we are plunged in the middle of ethics.”

The fundamental relationship between the medical profession, education, and ethics has been the focus of 12 of the presidential addresses, starting with Samuel J. Mixter in 1916 and progressing to Peter J. Deckers, MD, of Connecticut in 1999. Even when ethical issues were not the primary focus, comments relating to duty, responsibility, honor, and humanism in medical practice were made by many, if not most, of the presidents. Grantley W. Taylor, MD, linked duty with education by stating that “Teaching must be an essential function, not only of our individual members, but of the society as a whole.” H. Brownell Wheeler, MD, noted that a humanistic approach to the practice of surgery is the tradition of the NESS, and that new members pledge to “evidence the attributes of basic honesty, kindness, tolerance, equanimity, good manners, and social consciousness.” Wheeler notes that “We must learn to think of ourselves first as humanitarians and only secondarily as technicians,” and that we should, as the astronauts did when they looked at the world from space, take a “long and transforming look at our profession.” Clement A. Hiebert, MD, of Maine and James H. Foster, MD, of Connecticut emphasized the spiritual dimensions of surgical life, and emphasized the fundamental qualities of commitment to excellence, compassion, and courtesy and the rejection of hype, sham, and excessive materialism. Irving J. Walker, MD, expressed great concern about the race for worldly goods and about the substitution of television and entertainment for education. “We have distorted our sense of values by overestimating the importance of materialism and minimizing the merits of the finer attributes of humanitarianism as exemplified by the Golden Rule.” It is curious that these themes bear constant repetition, and that we do not seem to have made much progress in incorporating these concepts into the fabric of the profession. Indeed, Plato voiced similar concerns in *The Republic*, when Socrates discussed the nature of the virtuous physician. He argued that true physicians do not act in their own best interests, but in the best interests of their patients. Clearly, there were some physicians in ancient Greece who did not adhere to those principles, just as there are today.

Sixteen presidents focused on socioeconomic and professional issues. During the lifetime of the NESS, there was increasing concern about what appeared to be rapid
change in the profession. Frederick B. Sweet, MD, described his professional lifetime as a period of “unrest, change, of strife and movement, of invention and scientific progress, during which things spiritual and material, economic and social have been shaped and molded, destroyed and re-created as seldom, if ever before, in so brief a time.”21 One of the key issues was the maintenance of the professional integrity of surgeons. Daniel Fiske Jones, MD,22 decried the rise of the diagnostic physician, and challenged surgeons not to abrogate their professional responsibilities to the patient by becoming mere technicians. Richard Warren, MD,23 made a plea for surgeons to recapture their leadership positions and to preserve the freedom of each surgeon to control his or her own destiny. Frank H. Lahey, MD, believed that it was the “duty of the doctor of the future to take a greater interest than he has in the past in the economic as well as the scientific side of medicine.”24 He also believed that there were too many surgeons being trained. “There is but one way to know surgery, and that is by doing a great deal of it. Better surgeons would be developed if there were fewer of them.”24 George R. Dunlop, MD,25 addressed the highly controversial issue of the use of private patients for teaching purposes. The NESS created a committee, chaired by Dunlop, that recommended that the use of private patients for teaching purposes is ethical if the attending surgeon is present and actually participating in the operation. This position was adopted by the NESS, and subsequently by the ACS. Reflecting on the growth of insurance programs and on the loss of surgical patients cared for by residents, he called not just for discussing problems but also for taking a leadership position in solving them. He stated that “This developing social consciousness is, I believe, the life blood of societies such as this.”25 John J. Byrne, MD,26 focused on the role of the specialty societies, and analyzed the reasons for the decline of interest in academic surgery. He pointed out that there were still substantial benefits to be gained by participating in scholarship, research, and teaching. “The top pleasure is probably a quest for knowledge and a belief that there is inherent joy in the intellectual life.”26

The presidents of the NESS have been a varied group, but their commitment to the ideals of the society is clear. Their presidential addresses are also highly varied, but each one, in its own way, is profound and wise, and reflects the fundamental truths and issues of great importance at the time. Many of the presidents of the society have assumed leadership roles in other organizations, as have other members who were not elected to the office of president. If we can include Richardson, perhaps the spiritual godfather of the NESS, and J. Collins Warren, 17 members of the society have been elected president of the ASA. Seven members were president of the ACS, 6 were chair of the American Board of Surgery, and 3 were chair of the Residency Review Committee for Surgery. W. Gerald Austen, MD, Harvey Cushing, MD, J. Englebert Dunphy, MD, and Claude E. Welch, MD, held the ASA and the ACS presidencies, and Dunphy also held the chair of the American Board of Surgery. Even though Dunphy’s appointments came after he left Massachusetts, he retained his membership in the NESS (Table). The NESS, and especially its Massachusetts contingent, has, therefore, had a great influence on a national level in striving for the advancement of surgery.

JUDGMENTS OF HISTORY

How will history judge us? One of the ways in which the NESS can be judged is not only through the people who have led it and served it but also through those people whom it has chosen to honor. The Distinguished Service Award in honor of Nathan Smith was first given in 1985, and has now been given to 9 individuals, 7 of them
from Massachusetts. The first recipient, in 1985, of the Smith award was Claude E. Welch, MD, of Boston, who was an outstanding role model in clinical surgery and everybody’s “Mr Surgery” in New England. He was a superb clinician and a great teacher, widely respected throughout the world for his surgical skill, knowledge, leadership, and great academic accomplishments. The next recipient, in 1989, was Francis D. Moore, MD, of Boston, who was the fifth Moseley Professor of Surgery at Harvard Medical School and surgeon-in-chief at Peter Bent Brigham Hospital, Boston. Moore has been considered one of the most influential figures in surgery during the past century. He was on duty as a surgical resident at MGH on the night of the Cocoanut Grove fire on November 28, 1942, in which almost 500 people died, and was immediately thrust into the maelstrom of trying to provide care for the injured and severely burned patients. That experience led Moore back to the research laboratory, where he conducted the elegant studies of fluid balance, body composition, and metabolism that eventually led to his major classic text, *The Metabolic Care of the Surgical Patient*. Moore has received innumerable awards for his accomplishments, including the Medallion for Scientific Achievement and the Flance-Karl Award of the ASA. Moore also was a guiding spirit behind the development of the kidney transplantation program at Peter Bent Brigham Hospital. In 1991, the Smith award was given to Moore’s colleague at Peter Bent Brigham Hospital, Joseph E. Murray, MD, who performed the first successful kidney transplantation (Figure 1) in 1954, arguably the high point of surgery in Massachusetts in the 20th century. Murray received the Nobel Prize for Physiology and Medicine in 1990 (Figure 2) for his contributions to the technique and science of transplantation and to the control of the immune response, the 10th surgeon to be so honored. Murray was president of the NESS in 1987, and received the Medallion for Scientific Achievement from the ASA. The next Smith award was given in 1992 to George R. Dunlop, MD, of Worcester, Mass, a former president (in 1966) of the NESS. Dunlop was also an outstanding clinical surgeon and leader, who served as president of the ACS from 1976 to 1977. In addition, he served on the Joint Commission for the Accreditation of Hospitals and became the chair of that organization as well. In 1994, the Smith award went to John F. Burke, MD, also a former president of the NESS (in 1990), for his outstanding work in developing a technique for skin grafting of extensively burned patients with skin grown from autologous cells. He also received the Jacobson Award for scientific achievement and innovation from the ACS in 1999. In 1999, the Smith award went to John A. Mannick, MD, Moore’s successor as Moseley Professor of Surgery at Harvard Medical School and surgeon-in-chief at Brigham and Women’s Hospital, for his pioneering work in vascular surgery and in immunology. The society has, therefore, chosen to honor its leaders for their scientific and clinical contributions and for their leadership of other major national surgical organizations. But there is another facet to the Smith award, because in 1995, it was given to Frank J. Lepreau, Jr, MD, of Massachusetts. Lepreau was vice president of the NESS in 1977, but he was honored for his commitment to community service and to the care of underserved and impoverished patients in New England and in other parts of the United States and the world. Similar considerations prompted the granting of the Smith award to Harry McDade, MD, of New Hampshire in 1996. The award given to John H. Davis, MD, of Vermont in 1997 was based not only on Davis’ contributions to surgical education and scholarship but also on his personal courage and equanimity in dealing with the effects of a devastating illness. These recipients of the Smith award reflect the values that the NESS honors, and they all reflect, in different ways, the basic principles articulated by Samuel J. Mixter in 1916.
In addition to the recipients of the Smith award, the surgical history of Massachusetts is full of other outstanding individuals who have made great contributions to the surgical sciences and to the care of surgical patients. It is simply impossible to identify all of the major contributions that have been made by Massachusetts' surgeons. It is highly presumptuous of me to pick out a few individuals whose names stand out over the course of the past century, and I apologize to those who have made important contributions who are not included. Nevertheless, let us proceed, and, as Scannell proposed, let us now praise famous men.

PRAISING FAMOUS MEN

Harvey Cushing was a dominant figure, not only in New England but also throughout the world, in the early part of the century. He came to Boston in 1912 as the first surgeon-in-chief at the new Peter Bent Brigham Hospital and as the third Moseley Professor of Surgery at Harvard Medical School. He was recruited from The Johns Hopkins University, Baltimore, Md, and he instituted a surgical residency at Peter Bent Brigham Hospital based on the concepts of surgical education and research espoused by William S. Halsted, MD. He also was the preeminent pioneer in the development of neurologic surgery, and served as president of the ACS from 1922 to 1923 and as president of the ASA in 1927. He won a Pulitzer Prize in 1926 for his superb biography of Sir William Osler.

William E. Ladd, MD, was the surgeon-in-chief at Children's Hospital in Boston. He was a pioneer in the development of pediatric surgery, and his efforts really initiated pediatric surgery as a separate discipline. He wrote original and classic descriptions of numerous surgical illnesses of childhood, such as intussusception, biliary atresia, esophageal atresia, pyloric stenosis, megacolon, and exstrophy of the bladder. He also wrote, in conjunction with Robert E. Gross, MD, the classic textbook, *Abdominal Surgery of Infancy and Childhood*.

Robert E. Gross followed William Ladd as surgeon-in-chief at Children's Hospital, and became the William E. Ladd Professor at Harvard Medical School. He was a pioneer in the cardiac surgery of childhood, and opened the door to the correction of congenital anomalies of the heart and great vessels. He was the first to demonstrate that a patent ductus arteriosus could be safely ligated in a child. He established the pediatric surgical residency at Children's Hospital, and was responsible for the training of a generation of pediatric surgeons who have themselves become leaders in the field. He was awarded the Medallion for Scientific Achievement from the ASA in 1973, the first New England surgeon to be so honored.

Elliott C. Cutler, MD, was Cushing's successor as surgeon-in-chief at Peter Bent Brigham Hospital and as Moseley Professor of Surgery at Harvard Medical School. As a clinical surgeon, he was the first to operate on the mitral valve. He also maintained a strong commitment to surgical education, and many of his residents went on to achieve national fame in their own right, including Robert Zollinger, MD, Carl Walter, MD, J. Englebert Dunphy, MD, Richard Warren, MD, Orvar Swenson, MD, Joseph E. Murray, MD, Robert E. Gross, MD, Edward Beatty, MD, Charles Hufnagel, MD, Henry Swan, MD, and David Hume, MD. He was president-elect of the ASA at the time of his death in 1948.

Frank H. Lahey, MD, was professor of surgery at Tufts University School of Medicine, Boston, before beginning the clinical group practice that bears his name. The success of the Lahey Clinic, Burlington, Mass, and its contributions to clinical care and education have made it one of the preeminent group practices in the world. Lahey was a superb clinical surgeon, a pioneer in thyroid surgery and in surgery for rectal cancer. He was president of the NESS in 1932, and became president of the American Medical Association in 1940.

Edward D. Churchill, MD, was Homans Professor of Surgery and chief of the General Surgical Services at MGH. During his career, he was president of the ASA, and he was president-elect of the NESS at the time of his death in 1972. He was a pioneer in the surgery of the parathyroid glands, and performed the first successful pericardiectomy for constrictive pericarditis. It was as an educator, however, that he made his greatest mark, putting into place a rectangular structure instead of a pyramidal structure for the surgical residency in 1939, presaging a similar move by the Residency Review Committee for Surgery almost 60 years later.

Oliver Cope, MD, was professor of surgery at Harvard Medical School and visiting surgeon at MGH, where he also achieved fame in dealing with the Cocoanut Grove disaster. He had a precise, inquisitive mind, and was not afraid to challenge the accepted dogma of the day. He originated the concept of the Delphian node in thyroid cancer, and developed the pathophysiologic basis for surgery of the parathyroid glands. He understood that more surgery is not necessarily better for some diseases, and became an early and vigorous proponent of less radical surgery for breast cancer. He was president of the ASA in 1963.

M. Judah Folkman, MD, is the Andrus Professor of Pediatric Surgery and professor of cell biology at Harvard Medical School and director of the Surgical Research Laboratories at Children's Hospital Medical Center. He is nationally and internationally acclaimed for his research accomplishments. He has virtually single-handedly developed the science of angiogenesis, which has enormous potential applications in tissue engineering and transplantation, treatment of ischemic states, and treatment of neoplasia. He has won the Flance-Karl Award and the Medallion for Scientific Achievement of the ASA for his contributions to surgical research.

Massachusetts' surgeons, and the NESS, are still at the forefront of developing new advances and new concepts in surgery. However, we are firmly rooted in our historical past, and value the precepts and contributions of our colleagues and forebears. These contributions are beautifully presented in the memoirs of 3 great surgeons of Massachusetts, J. Collins Warren, Francis D. Moore, and Claude E. Welch. The membership certificate of the NESS (Figure 3) also has historical roots. It was designed by President Robert Osgood, MD (of Os-
from the border of the title page of the first edition of Ambroise Pare’s Surgery, published in 1568. On one side of the border there is a depiction of the water of life coming down to make the wheat grow, and on the other side, the wine of life is coming down to make the grapes grow. At the top, the seal of the society, made up of oak leaves and laurel, symbolizing duty and skill, is placed, together with the motto “primum non nocere,” which Pare is often used. In 1930, Charles G. Mixter, MD, the son of Samuel J. Mixter, presented the society with a gavel, which is still in use today, made from the timbers taken from the Ether Dome of the Bulfinch Building at MGH.30

Our profession can trace a direct ancestral line back not only to Hippocrates but also to his compatriots and contemporaries, Socrates, Plato, and Aristotle.7 In Plato’s The Republic, Socrates engaged a sophist in a dialogue concerning the duties and responsibilities of the virtuous physician. The word virtue is translated from the Greek areté, which also has the connotations of excellence, honor, skill, knowledge, valor, and morality. The concept of areté was central to Greek civilization. Socrates stated that virtuous man must act to provide benefit to others, not himself, and that the essence of that benefit is education. In conducting these educational exercises of the Ness, we are continuing an ancient tradition of the unceasing search for areté, the search for excellence, virtue, and knowledge through the means of rational inquiry and logical discourse. That is what Socrates believed and taught, that is how progress is achieved, and that is how the Ness and our other academic surgical societies must move into an uncertain and challenging future.


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