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Howard Atwood Kelly: Man of science, man of God



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Howard Atwood Kelly (Figure 1) was the youngest of the “Big Four”—William Stewart Halsted, William Osler, and William Welch—the founding chairs at Johns Hopkins School of Medicine and creators of the Hopkins legacy. To Halsted he was an “enigma;” to Osler he was the “Kensington Colt” because of his surgical dexterity; and to his students and residents he was simply “The Chief.” He was a clinical innovator, performing the first successful Cesarean section (C-section) in Philadelphia in 1888, and pioneered the use of radium in the treatment of gynecological cancer. The consummate clinician, his name is behind the Kelly clamp and he is the one identified with the test to find the ureter by stimulating its peristalsis by touching it with a forcep. His lasting legacy was the residency program in obstetrics and gynecology at Hopkins and the generation of leaders he trained. His devotion to surgery and his patients were inspired by his faith.



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Upbringing and education

“Accordingly as we remember others, so those yet to come will remember us. If we live only for the present and for our own age and reject the past because of imperfections, so in turn will we ourselves as surely be forgotten and despised as the centuries roll over our dusts.”¹

—Howard A. Kelly, 1912 Presidential Address, *American Gynecological Society*

Kelly was born in Camden, New Jersey on February 20, 1858, of Irish-German ancestry and was the second of nine children (Figure). The family moved to Philadelphia where his father, Henry Kuhl Kelly, served in the Civil War as a lieutenant in 118th Pennsylvania Volunteers and was in the sugar industry business. His mother, Louisa Warner Hard, held fast her own religious upbringing by her father, Anson Bois Hard, the first graduate of the Theological Seminary of Alexandria, Virginia. Years later Kelly dedicated an altar in the seminary chapel to his grandfather’s memory.²

Kelly’s mother made sure her children used the Bible as the Word of God and their daily guide. His father’s background was no less religious. Kelly’s great-great-grandfather, Thomas Kelly, who established the family in America, was a recent Methodist convert seeking freedom from persecution. As a boy Kelly frequently took nature walks in the countryside with his mother, an experience that sparked a lifelong interest in nature and the environment.³ In 1875, the 17-year-old became a member of the Academy of Natural Sciences where he learned the names and classifications of the numerous fossils and specimens that he would continue to collect for a lifetime. His ancestors had a proud tradition of achievement in politics, business, real estate and civic service. Another great-great-grandfather was Michael Hillegas, the first Treasurer of the United States. None of his forebears were in medicine.

At 10 Kelly entered the Classical Institute in Philadelphia, a respected school founded by Reverend John W. Faires. In 1873, at age 15 he entered the University of Pennsylvania where he excelled, honored in Latin and mastered Greek and Spanish.⁴ In evenings, he attended lectures of the Franklin Scientific Society and became its president two years later. At Penn he fulfilled Faires’ prediction that “Kelly would be outstanding in leadership and first honor man because of the boy’s well established trait of sticking to his work and carrying it through completion.”^{2 p. 17}

Kelly entered the University of Pennsylvania School of Medicine in 1873. He took his father’s advice to pursue a field which offered a better livelihood and “fair financial return,”^{2 p. 20} turning away from his dream of becoming a naturalist. Of 136 students in his class he was one of only 19 who held a baccalaureate. In typical fashion he became class president. In addition to his medical studies, he made sure he continued his Bible study with his mother. He also maintained his collection of reptile



and mammal specimens (Figure 2). Overwork and insomnia drove him to a needed sabbatical year from medical school in Colorado Springs as a ranch doctor and cowhand. During the break he had an experience that reinforced his religious conviction.

There came as I sat up in bed an overwhelming sense of a great light in the room, and of the certainty of the near presence of God, lasting perhaps a few minutes and fading away. I was left with a realization and a conviction never afterward to be questioned in all the vicissitudes of life whatever they might be, a certainty above and beyond the processes of human reasoning.⁵

Upon graduation from medical school in 1882 he wrote in his diary

I dedicate myself, my time, my capabilities, my ambition, everything to Him. Blessed Lord, sanctify me to Thy uses. Give me no worldly success which may not lead me nearer to my Savior."^{2 p. 37}

Kelly interned at the Episcopal Hospital in Kensington, Philadelphia, where he continued to receive inspiration.

Hospital experiences drew me into intimate touch with the problems of suffering humanity and revealed the priceless gratitude of the

poor when treated with affectionate consideration; this was the final touch necessary to convert all my interests to my profession, no longer merely a means of livelihood, but a shining path of service replete with spiritual rewards.^{3 p. 27}

Professional career

Direct contact with the needy led the groundwork for an eventual career in gynecology and the organization of a clinic devoted to the health care of women. In an era before laboratory diagnosis and radiological imaging, diagnosis was a challenge. Kelly recalled a woman admitted to the surgical ward with what was presumed to be a "large fibroid tumor." Uncertainty led to delay, but the woman was eventually scheduled for surgery. However, on the day of her operation the surgeon received a message. "Professor, there won't be any operation today," it said. "The tumor was born last night."^{2 p. 38}

After his 16-month residency Kelly began in general surgery but soon began to concentrate on gynecological conditions, unique in an era where such specialization was rare. A clinical innovator, he described the Kelly stitch in 1883 to lift the retroflexed uterus to the anterior abdominal wall. In 1888, he performed the first successful C-section in Philadelphia. After visiting Prague and Berlin, where he met Virchow, he developed an air cystoscope and a technique of cannulating the ureter.⁶

He earned the reputation for surgical dexterity, equally skilled using either hand with a thorough knowledge of anatomy. Suspecting that one of his patients had died of nephritis and fearing that he could not obtain permission for an autopsy, he removed, postmortem, both kidneys through the vaginal vault, a harbinger of modern natural orifice surgery.^{2 p. 39} From a two-room facility where he started practice, he built the Kensington Hospital for Women. Osler admirably nicknamed him the "Kensington Colt."

Osler recommended Kelly's appointment to the faculty at Penn as an associate professor in 1888. One year later the don recruited the colt to the newly established Johns Hopkins School of Medicine. At 31, he became the youngest of Hopkins's Big Four, along with William Stewart Halsted, William Osler, and William Welch, the founding chairs responsible for the Hopkins legacy. Despite his junior status, the relationship among the four was "notable for a lack of jealousy." As was his custom, the relationship reminded Kelly of a Bible passage. He said:

We unconsciously afforded another illustration of the value of the maxim, 'In honor preferring one another,' for where love is, their happiness and progress are sure to find their congenial dwelling place.^{3 p. 28}

At Hopkins he continued a career in surgical innovation. He was among the first to use nitrous oxide for anesthesia, incorporate absorbable suture in his operations, and use electrical lights in

the operating theatre. He advocated the use of radium in the treatment of gynecological malignancy despite the opposition of many in his field. William and Charles Mayo were among the few that offered support and encouragement. When he developed gall bladder disease he was operated at the Mayo Clinic. He dedicated his book, *Diseases of the Kidney, Ureters, and Bladder*, to the Mayo brothers.^{7,8}

Like Osler and Halsted, Kelly was an educator. He established a leading training program in gynecology, the residency and the men he trained being his greatest legacy. He worked with famed medical artist Max Brödel to revolutionize the use of technical drawings to illustrate key steps in his surgical operations. He took stereoscopic photographs during surgery, and published them as "Stereo Clinics" to enhance the visualization of the procedures to benefit students and surgeons in practice.⁹

Kelly became the first professor of gynecology in the U.S. He retired in 1919 at the age of 60, having served as chief for 30 years, but continued to operate until he was 80. At the end of his career his 550 articles and books covered a wide range of clinical subjects, including urogynecology, caesarean delivery, pulmonary resuscitation, appendectomy, use of radium in malignancy, electrosurgery, and ureteral catheterization. His publications also included non-clinical topics that reflected topics important to him, such as medical history, religion, herpetology and botany.^{7,10}

Kelly was a member of major professional organizations, including American College of Surgeons, and had honorary memberships in societies in Ireland and London. The American Gynecological Society named him its president in 1912. One of his honorary doctorates was from his alma mater, the University of Pennsylvania. Of the Four Founding Doctors, only Kelly and Osler received an honorary LL.D. degree from Hopkins. His name is familiar today as one of the standard hemostats used by all surgeons. Less familiar is the Kelly test used to identify the ureter by inducing its peristalsis by gently prodding or grasping it with a pair of forceps. After his death in 1943 a US Liberty ship was christened the "SS Howard Kelly" in his honor.

Religious life

Religion guided Kelly's professional and personal life. He said

Like most boys, I owe my real start in life to my mother, who began to teach me the Bible, standing at her knee, as soon as I could dimly grasp the simple words and before I could read.^{2 p. 9}

A Christian Fundamentalist from his teens, he carried a New Testament in his pocket or a portion of Scripture that he would pass to his friends. He read the original Greek and Hebrew texts of the Bible. When the minister was unavailable for Sunday prayer, Kelly would take the pulpit, give the sermon, lead the congregation in prayer. He said a prayer before every operation.

In his book, *A Scientific Man and the Bible*, he promoted his faith. He said, "Fellow Christians, you who have families, hold family prayers daily and read and discuss some Scripture in the family at least twice a day, for the reward is a rich one."^{3 p. 38} On his lapel he wore a pink rose in a small vial of water and a blue button that featured a question mark as devices to open a discussion on faith. When asked he turned his lapel to reveal the stem in water and said, "This is a Christian rose with hidden sources of grace and life, [and the question mark signifies the questions] 'what think ye of Christ? Whose son is He?'"^{2 pp. 173-174}

Not everyone shared his zeal. To Halsted, Kelly was a mystery; to H.L. Mencken, the acerbic columnist and editor of the *Baltimore Morning Herald*, Kelly was "Dr Evangelicus Extremus."⁵ ¹¹ In a review of Kelly's book Mencken said,

*Hours on end I have discussed his theological ideas with him, and heard his reasons for cherishing them. They seem to me now, as they seemed when I first heard them, to be completely insane - yet Kelly himself is surely not insane.*¹²

Mencken remembered traveling with Kelly on a train from Washington to Baltimore where they discussed Christianity. "Three separate times I was on the point of jumping out of the train window," the journalist said.¹³ Even Mencken, however, would agree that Kelly was an honest and caring soul who truly loved mankind.

Family life and legacy

Kelly married Olga Elizabeth Laetitia Bredow in Danzig, Germany in 1889. After a Paris honeymoon they settled in Baltimore and raised nine children in the same religious tradition that Kelly was raised. Only his youngest son, Edmund Kelly, followed his footsteps into medicine. Their home at 1406 Eutaw Place today is a registered landmark in the historic Bolton Hill neighborhood (Figure 2) and so is "Liriodendron," the family's summer retreat in Bel Air, Maryland.⁵

The love of nature and animals that his mother instilled into him as a boy continued into adulthood. Fascinated with reptiles, he allowed snakes to slither freely in his house. The Division of Reptiles and Amphibians at the University of Michigan named him honorary curator, a title that no doubt pleased him. Among his many publications were articles and books on snakes. As an environmentalist, he purchased and eventually donated 200 acres of land in Florida that became Kelly Park near Apopka.¹⁴

Among the worthy causes he supported was service to the poor and women in medicine, and as an admirer of Florence Nightingale, nursing as a profession.¹⁰ He opposed child labor and prostitution. He provided housing with a housekeeper to former prostitutes needing temporary lodging.⁷

Kelly died of uremia at the Union Memorial Hospital on January 12, 1943, a few weeks short of his 85th birthday.¹⁵ His wife

of 54 years died just hours later in an adjacent room, giving poignancy to the words “till death do us part.” A joint funeral was held at the Memorial Episcopal Church, followed by a burial at Woodlawn Cemetery in Baltimore (Figure 3).

Kelly was a unique blend of surgeon and humanitarian deserving of his stature among the prominent figures in the history of medicine. His clinical achievements and humanity represent the best in the profession, a life that was well lived, guided by faith, and continues to be an inspiration.

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Legend

- A Howard A. Kelly as a young man (ca. 1912).
- B Kelly with his collections of artifacts (ca. 1930). Images reprinted with permission from The Alan Mason Chesney Medical Archives of the Johns Hopkins Medical Institutions.