

THE HISTORY OF CHEMICAL EDUCATION AT LAFAYETTE COLLEGE

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This paper is an overview of chemical education at Lafayette College in Easton, Pennsylvania from its founding up to the present day, but with emphasis on the curriculum, faculty, and students of the 19th century.

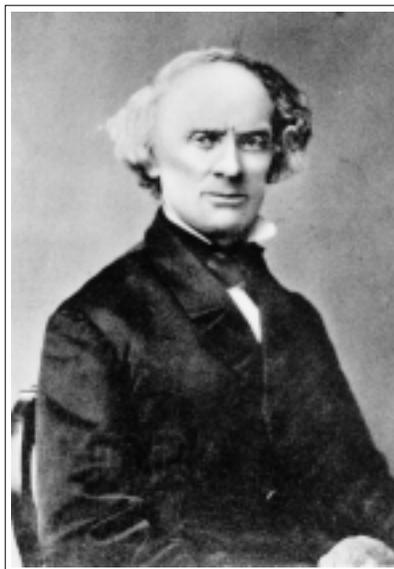
Founding

Lafayette College owes its origin primarily to James Madison Porter, an attorney, judge, and railroad founder who also served as Secretary of War under President John Tyler. Porter was born in 1797, the youngest son of the Revolutionary War General Andrew Porter. His brother David was Governor of Pennsylvania and another brother, George, was the Governor of Michigan. Porter's sister, Eliza Ann, was the mother of Abraham Lincoln's wife, Mary Todd. James Porter persuaded the legislature of Pennsylvania to grant a charter to Lafayette College on March 9, 1826; but it was not until May 9, 1832 that classes were first held. He served as the president of the board of trustees of Lafayette for the first 25 years of its existence (1, 2). The school was not originally church-related, but all the early presidents and board members, and nearly all the early faculty were members of the Presbyterian Church. In 1849 the college formally aligned itself with that denomination, and the charter was modified in 1854 to reflect this affiliation (3).

Until 1865 Lafayette offered only one curriculum, an A.B. degree based mostly on Latin and Greek literature and religion courses. Most of its early graduates became ministers, attorneys, or physicians. Chemistry, included in the curriculum from the founding of the college, consisted of only two terms of study in the junior and senior years until 1853, when it was reduced to one term in the senior year (4).

The first professor to hold the chemistry chair at Lafayette was Samuel David Gross, M.D. Born on his father's farm near Easton on July 8, 1805, he studied medicine at the recently founded Jefferson Medical College in Philadelphia. After graduation in 1828, he practiced medicine in Philadelphia for three years, then returned to Easton where he practiced, studied, and carried out experiments on dogs relating to gunshot wounds of the abdomen. In 1832 he became the first faculty member appointed to the new Lafayette College as Professor of Chemistry, Mineralogy, and Botany; but he never actually taught a chemistry course. He said in his autobiography that he would not have accepted the position if he had actually been required to teach chemistry because he had never made chemistry a "special study." In 1834 Gross resigned his position at Lafayette to become Demonstrator of Anatomy at the Medical College of Ohio and then was appointed Professor of Pathological Anatomy at the Cincinnati Medical College upon its founding in 1835. He subsequently took positions at the University of Louisville in 1840 and fi-

nally at Jefferson Medical College in 1856. Gross, considered to be one of the finest surgeons in the world in his day, was the founder of the Philadelphia Pathological Society, the Philadelphia Academy of Surgery, and the American Surgical Society. Among the many honors he received was the degree of D.C.L. from Oxford University and the L.L.D. from the University of Pennsylvania. Samuel Gross died in Philadelphia on May 6, 1884 (5, 6).



Traill Green, M.D.

The second faculty member to hold the chair in chemistry was Traill Green, a physician who immediately after graduation with an M.D. from the University of Pennsylvania in 1835 at the age of 22 went into private practice in Easton. In 1837 he joined the faculty of Lafayette, but left in 1841 to take the Chair of Natural Sciences at Marshall College (now Franklin and Marshall College) after a dispute with the Lafayette Board of Trustees over the faculty's authority to discipline students. Green was also a trustee along with serving as a professor, but was strongly on the side of the faculty in this conflict. He taught at Marshall until 1847, at which time he returned to Easton to resume his medical practice (7, 8).

From the date of Traill Green's resignation until he rejoined the Lafayette faculty in 1853, chemistry was taught successively by professors with no formal chemical education. From 1841 until 1845, chemistry was taught by David P. Yeomans, M.D., the brother of the then president of Lafayette, Rev. John W. Yeomans. In the 1845-1846 academic year E. Thompson Baird, an attorney and Presbyterian minister, taught the subject. From 1846 until 1851 the duty of teaching chemistry was carried out by Lafayette's Professor of Mathematics and Natural Philosophy, James H. Coffin. Coffin has also been described as the father of American meteorology (9). In 1851 Coffin became vice-president of

the college, and no chemistry instruction was held for one year (4).

Traill Green rejoined the Lafayette faculty in 1853 and taught chemistry until 1874. From 1865 until 1874 he held the Adamson Chair of General and Applied Chemistry. After 1874 he continued on the faculty but no longer taught courses. He became Dean of the Pardee Scientific Department in 1881, remaining in that position until 1890 when he became acting president of the college. Upon retirement in 1891 he became Emeritus Professor of Chemistry. He also served as a trustee of the college from 1881 until his death in 1897 (4,10).

Scientific and technical education at Lafayette began on a large scale in 1865 with the founding of the Pardee Scientific Department. The driving force behind its founding was Ario Pardee, a self-made millionaire whose principal business was coal mining in Hazleton, Pennsylvania. Pardee saw the need for technically trained employees in the new industries of the late 19th century and initially donated \$20,000 to the college and subsequently an additional \$100,000 to fund the founding of a scientific school (11). He later underwrote the construction of a large building, Pardee Hall, to house technical education at Lafayette. The new degrees offered within the Pardee Scientific Department were B.S. or B.Ph degrees in general science and chemistry, C.E. (civil engineering), and E.M. (mining engineer) (4,12).

The first building used specifically for chemical education was Jenks Hall, built in 1865 at a cost of \$22,000 and named after Barton Jenks, who had donated \$10,000 towards its construction (13). Jenks, who lived in Bridestown near Philadelphia, was the son of a former trustee of the college and a manufacturer of machinery for the textile industry. Except for a few years when it was used by biology, it served the Chemistry Department until 1902, when it was renovated for permanent use by the Biology Department. After that department moved into a new building in 1969, it housed the Art and Music Departments. In 1986 it was renovated again and renamed the William E. Simon Center for Economics and Business after the 1952 Lafayette graduate and trustee who financed the renovation and who is best known as a former U.S. Secretary of the Treasury.

Pardee Scientific Department

With the founding of the Pardee Scientific Department and the retirement of Traill Green from teaching, Lafayette needed a new chemistry professor with the

professional reputation to attract science students to the school. That turned out to be Thomas Messinger Drown. He was born in Philadelphia on March 19, 1842, the youngest of three sons of William Appleton Drown, a manufacturer of umbrellas, and Mary Pierce Drown (14). The young Drown was an excellent student, eventually graduating in 1859 from Central High School, the first public high school in Philadelphia. Drown's chemistry professor at Central was Martin Hans Boye, the well-known former assistant to Robert Hare and later consulting chemist in partnership with the even better known James Curtis Booth. Booth had preceded Boye as chemistry professor at Central (15).

After graduating from high school in 1859, Drown continued his education as a medical student at the University of Pennsylvania, where he graduated in 1862 with an M.D. after writing a 337-page thesis entitled "An Essay on Urological Chemistry." Upon graduation he took a job as a surgeon on a packet steamer that traveled between Philadelphia and London. He evidently did not enjoy this job because he resigned after only one round-trip voyage and never practiced medicine again. Instead, he decided to return to his favorite subject in both high school and medical school: chemistry (16).

He first went to the Sheffield Scientific School at Yale where he studied with George J. Brush and Samuel Johnson but soon left to study at the Lawrence Scientific School of Harvard, where he spent two years working under the direction of Oliver Wolcott Gibbs on the problem of separation of rare earths. Drown considered Gibbs to be his primary mentor (16, 17).

In 1865 he left Harvard and sailed to Europe where he studied first at the School of Mines at Freiburg with Karl Plattner and later at Heidelberg with Bunsen. He never did receive a degree from either German institution. While he was in Heidelberg, he met an English



Jenks Hall

woman, Helen Leighton, whom he married in 1869 at her parents' home in Leamington, England. After their honeymoon, Drown returned to America with his wife and accepted the first instructorship in metallurgy at the Lawrence Scientific School of Harvard. He left this position after only one year to work as an analytical and consulting

chemist with Dr. Frederick Augustus Genth, a Marburg D. Phil., who had worked as Bunsen's assistant from 1845 through 1848 before emigrating from Germany to America. Genth had also served as an assistant to J. W. Gibbs at Yale and was eventually president of the American Chemical Society in 1880. Drown worked in this capacity for four years until accepting the Adamson Professorship in Analytical Chemistry at Lafayette in 1874 (10).

During his years at Lafayette, Drown published extensively on analytical methods for use in the iron and steel industry, with most of his papers appearing in the *Transactions of the American Institute of Mining Engineers*, an organization of which he was a founding member, secretary (1873-1883), and president (1897-1898) (17). Drown alone wrote most of the papers published between 1873 and 1883, but several written after 1879 were co-authored by Porter W. Shimer, a former student who had graduated from Lafayette with an E.M. (mining engineer) degree in 1878.

Besides donating the funds to found the Pardee Scientific Department, Ario Pardee also provided \$250,000 for Pardee Hall, a five-story building 256 feet long, which was built between 1871 and 1873 to house the new technical school. The total cost to build and equip the hall was nearly \$300,000. Upon completion of this building, chemistry instruction was moved from Jenks Hall into Pardee Hall (18).

On June 4, 1879 disaster struck. Fearing he would be late for chapel, a chemistry student in a laboratory class supervised by Dr. Drown's assistant, Edward Hart,

put a red-hot retort and oily coveralls into his lab drawer at the end of the day. By the time the fire was brought under control, nothing of the magnificent building remained except for an intact foundation, the



Thomas Messinger Drown

radiators, and a pile of stones that could be reused in the rebuilding. Rushing to the building, Dr. Drown managed to save the correspondence of the American Institute of Mining Engineers, along with the only complete copy of the *Transactions* of the society. By the time the AIME's documents were removed, however, there was no time for Drown to save his personal library, worth an estimated \$5,000. The membership of the society was so grateful that a committee of its officers, led by coal baron Eckley Coxe and Lafayette professor Rossiter Raymond, raised enough funds for a complete replacement of Drown's books and instruments. Reconstruction of Pardee eventually cost \$130,000 (19).

The professors in the Classical Department of the college, already uneasy about the new technical school, immediately blamed technical education in general and Dr. Drown in particular for the fire. Chemistry laboratory instruction and Professor Drown's office were moved into the basement of McKeen Hall, a dormitory that had earlier been called Central House. After Pardee was rebuilt, the administration would not allow chemistry to move back in, so it was forced to remain in McKeen until after Drown resigned in 1881. At this time the technical school was under heavy criticism from the classical professors for being expensive to run and for not attracting enough students. Drown proposed a course in metallurgy, but the trustees never even gave him the courtesy of a reply. The battle came to a climax when Drown resigned at commencement in 1881. He had very strong supporters on the faculty and among the alumni and students. Assembled that same evening in a special meeting, the alumni prepared a petition asking the trust-

ees "to use every legitimate means to retain Dr. Drown" (20).

Drown agreed to withdraw his resignation and accept a year's leave of absence, provided he be able to keep a private laboratory and office in McKeen. The trustees agreed to this but later changed their minds, objecting to odors and increased fire insurance rates. Under these conditions, Drown resigned in the fall of 1881. Simultaneously, three other faculty members resigned in sympathy: Dr. Rossiter Raymond, Professor of Mineralogy and Geology, Dr. Frederick Prime, Professor of Mining and Metallurgy, and Allen Berlin, Adjunct Professor of Mathematics. Berlin later rejoined the faculty. After his resignation, Drown returned to the private practice of chemistry, both in Easton and in Philadelphia. He briefly took over the family umbrella manufacturing business after it had fallen on hard times because of the death of his father and illness of his brother. Drown kept the enterprise afloat long enough to liquidate it and save the firm from bankruptcy (16). Interestingly, even though it was Edward Hart who was actually supervising the laboratory section where the fire originated in Pardee, no one seems to have blamed him, and he was promoted into the Adamson Chair upon Drown's resignation.

In 1883 Lafayette's president of the previous twenty years, Dr. William Cattell, announced his retirement. There was a strong movement by the supporters of Drown to have him chosen the next president of the college; but Cattell, a prominent member of the anti-Drown contingent, and the trustees moved quickly to name James Hall Mason Knox, a Mental and Moral Philosopher to the post. Thus the classicists retained power over the institution (21).

Drown's supporters made one last effort to place him on the board of trustees that year. A petition requesting his appointment was signed by many prominent alumni and every member of the graduating class, but the trustees could not bring themselves to add Drown to their group (22). This decision cost the college the financial support of many wealthy alumni for several years.

Pardee Hall burned a second time on December 18, 1897 as a result of arson by George Stephens, a disgruntled former professor of Moral Philosophy and Ethics, who had been fired a year earlier (23). Rebuilt a second time, it is now occupied by humanities departments.

In 1885 Drown moved to Cambridge, Massachusetts to become Professor of Analytical Chemistry at the Massachusetts Institute of Technology. Three years later he became head of the Chemistry Department, and in 1893 he also took charge of the chemical engineering curriculum. Drown was elected president of Lehigh University on April 9, 1895, and remained in that position until his death in 1904 (16, 17).

With the founding of the Pardee Scientific Department in 1865, the college added a B.S. degree, which required no classical language. If a technical student added Latin to his curriculum, the degree awarded was a B.Ph. That year a three-term chemical course was offered as a specialization within the B.S. or B.Ph. In 1868-1869 the chemical course was expanded and given a separate curriculum for the junior and senior years, and by 1876-1877 a full four-year program in chemistry was added. The degree awarded in chemistry was changed to A.C. (analytical chemist) in 1874-1875, but again became a B.S. or B.Ph. in 1879-1880. The B.Ph. was discontinued in 1918, and from then on the only undergraduate degree offered in chemistry was the B.S (4).

The chemistry curriculum was fairly constant during the late 19th century, but did change gradually as the science matured. Reproduced below is the curriculum leading to the A.C. degree that appeared in the Lafayette College Catalogue in the academic year 1876-1877 (24).

Graduate studies were instituted at Lafayette at about the same time as the founding of the Pardee Scientific Department. The Master of Science degree was conferred upon any graduate of the Scientific Department who pursued for two years the post-graduate course of the college in any of the scientific departments, or who had elsewhere for three or more years engaged in scientific pursuits, and during that time sustained a good moral character. Beginning in 1874, a Ph.D. could be conferred by vote of the faculty upon graduates of the college who spent three years in resident post-graduate studies, passed a special examination, and wrote a thesis (25). At some point in the 1880s graduates of other institutions became eligible for admission as graduate students (4).

The first graduate student in chemistry at Lafayette, A. F. Bechdolt, was in residence for the academic year 1867-1868 but did not receive a degree. The first Ph.D. in chemistry was awarded in 1875 to William McMurtrie. McMurtrie, born on March 10, 1851 in Belvidere, New

Jersey, was a 1871 Lafayette graduate in mining engineering who spent the 1871-1872 year as a chemistry graduate student. He does not appear to have satisfied the three-year residency requirement, but by 1873 he was the chief chemist of the U.S. Department of Agriculture. He was the 1900 president of the American Chemical Society, a professor of chemistry at the University of Illinois from 1882 until 1888, and also served as a Lafayette College trustee from 1906 until 1912. He died on May 24, 1913 (26).

By 1899, eight individuals had been awarded an in-course Doctor of Philosophy degree in chemistry. Only one of these actually spent three years as a graduate student. The Ph.D. remained on the books until 1918, although no doctorate in chemistry was awarded after 1899 (4, 27, 28, 29).

Faculty

Thomas Drown was succeeded as the head of Lafayette's chemistry department by Edward Hart, who was born in Doylestown, Pennsylvania on November 18, 1854. He had been a special student of chemistry under Professor Drown in his private laboratory in Philadelphia and came to Lafayette in 1874 as Drown's assistant in chemistry. Although he never formally studied chemistry at the undergraduate level, Lafayette awarded him an honorary B.S. degree in 1874. The following year he was appointed Tutor in Chemistry at Lafayette and served in that position until Professor Drown arranged for him to receive a fellowship at the newly organized Johns Hopkins University. From 1876 until 1878 he was a graduate student of Ira Remsen at Johns Hopkins and in 1879 was awarded the first Ph.D. degree in chemistry from that institution. He returned to Lafayette as Adjunct Professor of Chemistry in 1878 and was named Adamson Professor in 1882, a position he held until his retirement in 1916. Hart was a co-founder with J. T. Baker of the Baker and Adamson Chemical company. After the General Chemical Company bought that company in 1913, Hart remained to manage the plant until 1915. Upon his retirement from Lafayette in 1916, he became Vice-President and General Manager of the Clinchfield Products Company at Johnson City, Tennessee. Returning to Easton in 1918, he founded his own company, Hart Laboratories. On the 50th anniversary of his association with Lafayette, the college awarded him an honorary Doctor of Laws degree. Professor Hart won the John Scott Medal of the Franklin Institute for the invention of a wax-lined bottle for the storage of

CHEMISTRY CURRICULUM IN 1876-1877

CHEMICAL COURSE.

FRESHMAN YEAR.

FIRST TERM.

Chemistry, with Laboratory Practice. English, French.
Nursery Elementary Drawing. Colman's Biblical Geography.
Algebra, (completed.) Old Testament in English.

SECOND TERM.

Chemistry, with Laboratory Practice, German and French.
Drawing, Plane Problems. Celestial and Local Geography.
Geometry, (completed.) Old Testament in English.

THIRD TERM.

Analytical Chemistry. German and French.
Trigonometry and Mensuration. Colman's Biblical Geography.
Geometrical Drawing. New Testament in English.

Throughout the Year—Declamations and Themes.

SOPHOMORE YEAR.

FIRST TERM.

Analytical Chemistry. German and French.
Geometrical Drawing. English, French on Words.
Mineralogy. Acts of the Apostles.

SECOND TERM.

Analytical Chemistry. German.
Botany and Zoology. French.
Mineralogy. Acts of the Apostles.

THIRD TERM.

Analytical Chemistry. History.
Universal or Mineralogy. Zoology.
French and German. Acts of the Apostles.

Throughout the Year—Declamations and Themes.

JUNIOR YEAR.

FIRST TERM.

German.
French.
New Testament Epistles.

SECOND TERM.

Physics.
Accounting.
New Testament Epistles.

THIRD TERM.

Physics.
New Testament Epistles.

Throughout the Year—Declamations, Themes and written Debates.
Text books in Chemistry in the German language are used during the year.

SENIOR YEAR.

FIRST TERM.

Physiological Chemistry.
Zoology.
Basis of Faith.

SECOND TERM.

Political Economy.
Agricultural Chemistry.
Evidences of Christianity.

THIRD TERM.

History.
Graduation Theme.
Ritter's Zoology.

Throughout the Year—Themes and Speaking.
Text books in Chemistry in the German language are used.

hydrofluoric acid. He also invented the Hart condenser, used in both the United States and England during World War I for condensing the large amounts of nitric acid necessary in making nitroglycerin and gun cotton. Founder of the *Journal of Analytical and Applied Chemistry* in 1882, he is also well known as the second editor of the *Journal of the American Chemical Society* from 1892 until 1901. Professor Hart died in his home on the Lafayette campus on June 6, 1931 (30, 31, 32).

Hart's best known student was probably John Townsend Baker. Baker, born in Orange, New Jersey on June 30, 1860, received a B.S. degree in chemistry from Lafayette in 1882 and an M.S. in 1884 (31). During his senior year he went into partnership with Hart in the manufacture of pure chemicals. In 1884 another of Hart's students, George P. Adamson, joined them and

they began to use the company name Baker and Adamson (32, 33). Adamson's uncle William had endowed Lafayette's chemistry professorship in 1865 (13). Hart's name was omitted from the corporate name because Lafayette College did not want the name of a faculty member to be attached to a company. Baker left that company in 1904 to form the J. T. Baker Chemical Company in Philipsburg, New Jersey to produce reagent grade chemicals. By the time of his death in 1935 the company listed 1,600 chemicals for sale in its catalog (31). This company is now a division of Tyco. Adamson remained with General Chemical and eventually became Director of Research at the company's headquarters in New York City. He served as a Lafayette trustee from 1920 until 1932 and died in Searsport, Maine on February 16, 1933 (33).

Porter William Shimer was the last to be awarded a Ph.D. degree in chemistry from Lafayette. Shimer was born in Shimersville, Pennsylvania on March 13, 1857. After graduation from Lafayette with an E.M. (mining engineer) degree in 1878, he was employed as chief chemist of the Thomas Iron Company for one year, then became Dr. Drown's chief assistant in his chemical laboratory, both at Lafayette, and later in his private laboratory, from 1879 until 1884. When Drown moved to the Massachusetts Institute of Technology in 1885, Shimer opened his own private chemical and metallurgical laboratory in Easton. From 1892 until 1902 he served as resident lecturer in iron and steel at Lafayette and also enrolled as a graduate student in 1898. He was awarded his Ph.D. in chemistry from Lafayette in 1899. In 1901 Shimer was awarded the John Scott Medal of the Franklin Institute for the invention of a platinum crucible with a water-cooled stopper, which greatly increased the speed and accuracy of the determination of carbon in the quantitative analysis of steel. He is also credited with the discovery of titanium carbide. He died December 7, 1938 (34, 35).

Jenks Hall was replaced in 1902 with a new chemistry building, Gayley Hall. It was donated by James Gayley, an E.M. graduate of Lafayette's Class of 1876 and trustee of the college from 1892 until his death in 1920. Born in Lock Haven, Pennsylvania on October 11, 1855, Gayley was a scholarship student from a poor family. President William Cattell advised him that, because of his free tuition, he was under a moral obligation to return the money with interest if he was ever able to do so. Gayley eventually became Managing Director of Carnegie Steel in 1885 and then First Vice President of the U.S. Steel Corporation from 1901 until 1909. The building, 88 feet long and three stories tall, was constructed of brick and trimmed with limestone and terra-cotta at a cost of \$34,000. Speakers at the dedication of the building included Thomas Drown, who by then was president of Lehigh University, Ira Remsen of Johns Hopkins University, and Dr. Henry Howe of Columbia University. Mr. Gayley received the Elliot

Cresson Medal of the Franklin Institute for the invention of the dry air blast process for the production of steel. He also won the Perkin Medal in 1913 and was a president of the American Institute of Mining Engineers (36, 37).

Students

Many early Lafayette graduates in chemistry headed west to seek their fortunes in the mining industry. One such individual who was especially successful in that career was Stuart Croasdale. Born in Delaware Water Gap, Pennsylvania on November 21, 1866, Croasdale earned a B.S. in chemistry in 1891 and a Ph.D. in 1898. He received what was probably the first post-doctoral fellowship in the history of the college from 1898 until 1891, then became the Chief Chemist at the Holden Lixiviation Company in Aspen, Colorado from 1891 through 1893. From 1894 through 1896 he worked as an assayer and chemist in Summitville and Gillett, Colorado and then became the chief chemist at the Globe Smelting and Refining Company in Denver from 1896 until 1900. In 1900 he became a consultant, selling his services to companies including Anaconda Copper and Calumet and Arizona Copper, and he eventually served as president of the Alma Gold Mining Company in Denver. Croasdale is best known as the co-inventor of the Pohle-Croasdale process for the treatment of refractory ores. He died in Denver on September 30, 1934 (38).

The Lafayette chemistry graduate who received the greatest variety of advanced degrees was probably George H. Meeker. Born in Philipsburg, New Jersey on August 13, 1871, Meeker graduated from Lafayette in 1893 with a B.S. in chemistry and remained there as a graduate student to earn an M.S. in 1895 and a Ph.D. in 1898. He was employed as Professor of Physics, Chemistry, Metallurgy, and Toxicology at the Medico-Chirurgical College in Philadelphia from 1897 through 1916 and Dean of the Department of Pharmaceutical Chemistry there from 1907 until 1916. While at that institution he earned a Pharm. D. in 1906 and a D.D.S. in 1907. From 1918 through 1941 he was the Dean of



John Townsend Baker

the Medical School of the University of Pennsylvania. He received the L.L.D. from Ursinus College in 1905 and from Lafayette in 1925, and the Sc.D. from Villanova University in 1913 and from the University of Pennsylvania in 1940. Meeker, winner of the John Scott Medal of the Franklin Institute, was also an inventor of many mechanical, electrical, and chemical devices and an expert chemical and toxicological witness in many prominent court cases. He died in Hunt Lake, New Jersey on September 4, 1945 (39).

When Edward Hart retired in 1916, he was succeeded as William Adamson Professor and Head by Eugene C. Bingham. Bingham had earned a B.A. from Middlebury College in 1899 and a Ph.D. from Johns Hopkins University in 1905. He is best known as the founder of the modern science of rheology. Although he stepped down as department head in 1938, he remained at Lafayette as a research professor until 1945 (40, 42).

Near the end of Bingham's administration, Lafayette became the first chemistry department in the country to form a student affiliate chapter of the American Chemical Society. Students at Lafayette and nine other colleges had formed the Intercollegiate Student Chemists (ISC) in 1936, with a goal of forming a national organization and also strongly advocating the affiliation of students with the ACS. The ACS changed its national bylaws concerning associate members in 1936 in a way that allowed local sections to admit students to section membership. The Lehigh Valley Section quickly acted to change its local bylaws and suggested a series of resolutions allowing the formation of student affiliate chapters. These were submitted as a report to the Spring 1937 national meeting in Chapel Hill, NC. At the 1937 Fall National Meeting in Rochester NY, the ACS adopted bylaws for the establishment of student affiliate chapters. The students at Lafayette acted very quickly, passing a resolution at the first meeting of the Student Chemical Society in the fall of 1937 "to secure

the first chapter for Lafayette College." Charles Parsons, Secretary of the ACS, sent a letter to Dr. Croesen, the faculty advisor to the organization, that the application for affiliation was approved on November 15th, 1937 (41).

1938 - 1997

Bingham was succeeded as chemistry department head in 1938 by John H. Wilson, who had also come to Lafayette at the time of Edward Hart's retirement in 1916, but as the first Assistant Professor of Chemistry. He had earned his B.S. from Lafayette in 1905, then enrolled at Harvard University where he received an M.S. in 1907 and a Ph.D. in 1908. He was promoted to Associate Professor in 1919 and then to Professor in 1931. He headed the department from 1938 until his retirement in 1957 (40, 42, 43).

Wilson was replaced as department head by another Lafayette graduate (B.A., 1927), William F. Hart (no relation to Edward Hart). Hart earned an M.A. from Princeton University in 1928, then worked as an Instructor at Lafayette during the 1928-1929 school year. He left Lafayette to study at New York University, earning his Ph.D. there in 1936. He was rehired by Lafayette, holding the rank of Instructor from 1937 to 1939, Assistant Professor from 1939 to 1942, Associate Professor from 1942 to 1954, and finally Professor from 1954 until his retirement in 1971. He served as department head from 1957 until 1968 (42,44).

A major addition to chemistry at Lafayette during William Hart's tenure was the construction of the Olin Hall of Science. In 1955 the Olin Foundation donated

\$1.25 million for the construction of a 40,000 square foot engineering science building to house the physics, chemistry, graphics, and mathematics departments. Dedicated on January 11, 1957, it is still in use by the chemistry department (45,46).



Olin Hall of Science

William Hart was succeeded as department head in 1968 by Thomas G. Miller. Miller had earned his B.A. from Miami University in 1948, and his M.S. (1949) and Ph.D. (1951) degrees from the University of Illinois. He held the rank of Assistant Professor from 1957 to 1960, then Associate Professor from 1960 to 1969. He was promoted to Professor in 1969 and became the John D. and Francis H. Larkin Professor of Chemistry in 1974. Miller held that Chair until his retirement in 1987 (42, 46, 47).

Thomas Miller stepped down as head of the chemistry department in 1979. He was succeeded in that position by Laylin K. James, Jr., who had received his B.S. in 1950 and M.S. in 1952 from the University of Michigan, and his Ph.D. in 1958 from University of Illinois. He joined the Lafayette faculty as Assistant Professor in 1959 and was promoted to Associate Professor in 1966 and to Professor in 1977. He headed the department until 1984 and retired in 1990 (42, 46, 47).

James' successor as head of the chemistry was Joseph A. Sherma, Jr., who led the department from 1984 until 1997. Sherma received his B.S. from Upsala College in 1955 and his Ph.D. in analytical chemistry from Rutgers University in 1958. He served Lafayette as Instructor during the academic year 1958-1959, then was promoted to Assistant Professor in 1959, Associate Professor in 1963, and Professor in 1974. In 1982 he was named Charles A. Dana Professor of Chemistry, a title he held until 1991 when he was named the John D. and Francis H. Larkin Professor of Chemistry. Professor Sherma was the winner of the E. Emmet Reid Award of the Middle Atlantic Region of the American Chemical Society for Excellence in Teaching Chemistry in 1988 and the national ACS Award for Research at an Undergraduate College in 1995 (42, 46, 47).

The current head of the chemistry department since 1997 is H. David Husic. Professor Husic is a biochemist who received his B.S. from The Pennsylvania State University in 1977 and his Ph.D. from Michigan State University in 1982. He was hired by Lafayette as Assistant Professor in 1986 and promoted to Associate Professor in 1992 (48). A new 40,000 square foot facility for the chemistry and physics department, Charles Hugel Science Center, was completed in 2000. Attached to the Olin Hall of Science, it contains physical facilities that will allow Lafayette to remain the superb place to learn chemistry that it has been since the middle of the nineteenth century (46, 48).

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