

With the creation of the position of Director of Financial Development (see DEVELOPMENT OFFICE) the College added a professional fund-raiser to its staff in 1948. By 1953 the Annual Fund was yielding over one hundred thousand dollars a year, and the trustees forced the Council to allow them a voice in its expenditure. Not long after, the fund came entirely under College control.

In 1959, the trustees—inspired in part by Harvard's launching of a campaign to raise the then-unheard-of sum of eighty-two-and-a-half million dollars—decided to launch an eleven-year campaign to raise fifteen million dollars for the endowment and new plant facilities by 1970, the College's 175th anniversary. Several years of preliminary effort ensued; the system of class agents was set up in 1961, but on the whole little was accomplished except that the campaign's goal was redefined as raising twenty million dollars between 1963 and 1973. The public phase of the drive was further postponed by Carter Davidson's 1964 resignation announcement, and in June 1965, with HAROLD C. MARTIN in the president's office, the trustees tacitly scrapped the previous plans and voted to launch what was considered a fresh campaign.

The goal of the new campaign, officially launched on October 28, 1966, was to raise thirty million dollars over a decade. The first phase aimed to secure twelve-and-a-half million for buildings and endowment by 1970. In late 1971, with the total at eight-and-a-half million, the first phase was declared over; although routine fund-raising continued, nothing more was said about the campaign or its goals. The College had borrowed very substantially to finance building construction in anticipation of revenues from the campaign, and had eventually to repay the loans from funds functioning as endowment.

The reasons for these failures were many. In part, the College suffered from its late start in conducting such campaigns; it was slow to develop a strong cultivation program and a sustained effort for deferred giving and bequests. Although possessed of other presidential strengths, neither Davidson nor Martin was adept at fund-raising. Davidson probably did not adhere to his 1946 promise to the alumni ("I hope and intend never to ask a Union alumnus to make a gift to his college, for I consider that his private affair"), but lack of enthusiasm for the demands which the impending drive would make on him was thought to have influenced his decision to resign.

Except for Walter Baker and Henry Schaffer, the trustees of this period were generally unprepared to make exemplary donations, and consequently they were not fully committed to the campaign. The College fund-raising staff was inexperienced and suffered from high turnover, while the firm hired to run the first campaign proved ineffective. Although Union es-

caped the student violence experienced by many institutions during the VIETNAM WAR, the 1966 capital campaign doubtless suffered because many alumni in a position to contribute significantly did not like what they heard about campus anti-war activity. In the later 1970s, the controversies that swamped the THOMAS BONNER administration may have similarly alienated some of the alumni who knew of them.

On April 19, 1980, a few months after the arrival of president JOHN MORRIS, the College launched the public phase of an entirely successful fund drive, the "Campaign for Union." The twin goals of the effort—which counted all contributions made from 1977 on—were to double Union's thirty million dollar endowment by 1985, and to raise eight million dollars through the Annual Fund by that date. With both goals already exceeded by the fall of 1983, the endowment target was then increased to fifty million dollars. At the campaign's close on June 30, 1985, more than fifty-one million had been received or pledged.

Since 1973/74, Union has been among the relatively few colleges receiving contributions to its Annual Fund from more than half of all alumni; participation peaked at fifty-nine percent in 1982/83. The Annual Fund first raised a million dollars in 1976/77, and passed the two million dollar mark in 1984/85.

### **Gamma Phi Beta (Epsilon Epsilon chapter).**

A national sorority founded November 11, 1874, at Syracuse University, Gamma Phi Beta colonized a chapter at Union on January 17, 1986; it was chartered May 3, 1986, becoming Union's fourth sorority. The chapter had no living quarters until it occupied a part of HICKOK HOUSE in 1991.

**Garis, Charles Frederick Fleming** (Feb. 1, 1881–Jan. 2, 1957). Professor of Mathematics, 1903–47; Dean of Students, 1919–34; Dean of the College, 1934–47.

A native of Easton, Pennsylvania, one of three sons of Cornelius Weygant Garis and Minnie Fleming Garis, Charles Garis attended Lafayette College in that city, winning honors in English and mathematics and election to both Phi Beta Kappa and Sigma Xi. He graduated as valedictorian with a PhB degree in 1903.

The Garises had been fine furniture makers for over a century, but the family business was apparently in decline by that time, and Charles was free to pursue an academic career. Union recruited him directly from college to teach mathematics, sending Professor JOHN MARCH (a Lafayette alumnus) to interview him before he graduated. Garis obtained a master's degree from Lafayette three years later by sitting for an examination, but although he later undertook summer graduate study at the University of Chicago, he never earned a PhD.

Hugh Garnett Davis '07, who came to Union as a student at the same time Garis joined the faculty, much later recorded his impression of

a young, new instructor of mathematics, of medium height, slender build, hair inclined to the tawny side, complexion inclined to sallowness but with a heightened color like a blush, a large mouth with thin and mobile lips, whose movements were slow and deliberate but, like his speech, along with a trace of hesitancy had a definite and final placement reflecting accuracy and incisiveness....

Garis had a simple dignity in his teaching, clearness of expression and great definiteness. He was patient and seemed to sense the lack of grasp inherent in those only about four years younger than he. There was never a situation of which he was not master. The little hesitancy and apparent bashfulness were covers for those occasions when a student was on the verge of impertinence or of misconception. At those times he marshaled his forces and harnessed his temper and his ideas and set things to right without hurting the student or himself. He grew in stature rapidly.

Within five years after arriving at Union as an instructor in mathematics, Garis had become a full professor and chairman of the department. His genius for organization manifested itself only a year after he joined the faculty, when he revised and regularized the entire system of scheduling classes and examinations to minimize the number of conflicts. As department chairman, he merged what had been virtually a separate department of engineering mathematics with the "academic" mathematics department.

Garis served for several years as chairman of the Freshman Committee, a position carrying many duties later assumed by the dean of students. Dean of the College BENJAMIN RIPTON assigned Garis more responsibility, and after Ripton retired in 1919, the College divided his job, assigning Garis to the newly-created position of DEAN OF STUDENTS. He served in that post until 1934, when the two deanships again merged. Garis remained Dean of the College until retirement in 1947 (see DEAN OF THE FACULTY / DEAN OF THE COLLEGE).

As dean of students, Garis was responsible for numerous innovations and reforms. He began to drop more students for poor scholarship, but he also devised the faculty advisor system instituted in 1929 by President Day. For years, he handed each student his ad-interim grades in person, with a few words of congratulation, encouragement or admonition. As long-time president of the Athletic Board, he resisted over-emphasis on sports and instigated the reform of the athletic department under J. HAROLD WITTNER. While leaving no doubt that he was in charge, he was only rarely heavy-handed (see UNION SOOT and PARIETAL RULES), and he was credited by his contemporaries with allowing students great freedom of expression.

A quiet man who declined most invitations to speak in public, he usually prevailed in confrontations

by lowering his voice. Students nicknamed him "Garnie"; colleagues called him "Fritz." CHARLES WALDRON '06, who knew him as student and colleague, and thought him very close in spirit to the best of Union's late nineteenth-century faculty, considered Garis both a natural teacher and a natural politician, a man who knew how to get people to cooperate in systems that would work. He wrote nothing and made no general pronouncements on education, but Waldron thought "he had a right to feel that a large part of our procedure had been his brain-child."

In the fall of 1925, Garis suffered a nervous breakdown, attributed to the weight of his responsibilities. Although he returned a year later after recuperating at a sanitarium, photographs taken both before and after this period show an unsmiling man who appears worried, perhaps morose. Formerly a tennis player, he became an ardent golfer; for recreation he also played on the faculty bridge team and collected cactus plants, accumulating several hundred specimens.

Garis married Rose D. Lansing of Albany in 1908; they had one daughter. Resident in the south faculty house in North College from 1920, the Garises frequently entertained students at Sunday afternoon teas. The portrait of "Dean Sloan" in Carlyn Coffin's 1939 roman-a-clef BEER FOR THE KITTEN was generally thought to be based on Garis.

Garis turned sixty-five a month before Carter Davidson took office, but he stayed in office nearly a year longer so that Davidson could choose his own dean; he then retired in the winter of 1946/47.

He served on the Schenectady Board of Education (1937-47), and on several other local civic and business boards. Lafayette awarded him an ScD in 1923 and Union gave him an LHD in 1947. In 1958, a year after his death, the College named the Nott Street playing field "Garis Field" in his memory.

**Garis Cup.** In 1936 Dean CHARLES GARIS personally established a cup to be presented annually to the dormitory section whose scholastic rating was highest at the end of the marking period. Conceived as a compliment to the BERG SCHOLARSHIP CUP, which rewarded fraternities for high average grades, the Garis Cup was awarded through 1942; disruptions in College routine caused by the Second World War then made it impossible to continue. Garis retired in 1947.

**Garnet (color).** American colleges began to adopt distinctive colors for their sports teams in the mid-nineteenth century. In 1866 (the same year Princeton and Brown chose their colors), a committee of three members of each Union undergraduate class met to select a college color, and chose magenta. Union's baseball teams began to wear magenta-trimmed uniforms in 1874.

Union's admission to the Rowing Association of American Colleges the following year precipitated a crisis because Harvard also used magenta. (Crews wore colored handkerchiefs on their heads so that spectators could identify them from a distance.) A flurry of dubious claims to priority on both sides ensued, though Harvard probably was in fact the earlier school to use magenta in sports.

One of the most persistent myths in Union's history would have it that the issue was settled by a boat race between Harvard and Union. The less romantic truth is that a group of Harvard alumni reminded their school that its real color was crimson, used as early as 1859 (the crew changed to magenta in 1866 when they could no longer purchase crimson handkerchiefs). Meanwhile, tacitly admitting that it would not be able to force Harvard to change, Union switched to garnet, wearing it for the first time in a regatta on Saratoga Lake in July 1875.

Many other colleges use some red-based color, and for a time the *Concordiensis* delighted in running such sports headlines as "Garnet to Clash with Violet."

Sometime in the mid-twentieth century, the College adopted PMS 202 as the standard for garnet (the same color used by Colgate for "red" and Lafayette for "maroon").

**Garnet (Yearbook).** *The Garnet* has been published annually since 1877, except 1892 and 1946. From 1969 through 1979, it was titled *The Union Book*.

The yearbook evolved from an annual series titled *Catalogue of the Officers and Students...*, published by the students in most years from 1840 until 1874 (see CATALOGUE, COLLEGE). Starting as a near imitation of the official College catalogue, in 1847 it added the phrase "*with Register of Societies*" to its title and began to list members of fraternities, then gradually added other information of interest to students. From at least 1847 it was edited and published by the fraternities. An 1875 continuation was titled *The Centennial*; like the last few years of the *Catalogue*, it had some humorous content which carried over into the *Garnet*.

Although the *Garnet* descended directly from the student edition of the *Catalogue*, it had other precursors. From 1854 until 1871, the sophomore class published an annual, never longer than eight pages, that served as a kind of yearbook (see *UNIONIAN*). From 1857 until at least 1897, the senior class usually commissioned a class album consisting entirely of photographs of class members, faculty members, and College scenes; the volumes contained no captions or other text. The *Garnet* began publishing student photographs in its 1902 volume, five years after the last known class album.

**Sponsorship.** The *Garnet* began in 1877, the same year as the *CONCORDIENSIS*. Senior class fraternity members published the first four volumes, then juniors and seniors jointly edited a transitional 1881 volume. Beginning with the following year, fraternity members of the junior class published the yearbook. Because the annuals were named for the class publishing them, the 1881 volume was followed by the 1883 volume.

The first *Garnet* had six editors, one from each active fraternity; thereafter, the position of editor-in-chief rotated among the fraternities. From 1881 through 1884, however, Kappa Alpha refused to participate, and the yearbook ceased to recognize its existence, no longer allocating to it a separate page on which to list members. Kappa Alpha members appeared in the class lists without fraternity affiliation.

Other fraternities sometimes declined to cooperate, but the yearbook (also called "the secret society catalogue,") remained very much a fraternity publication through 1907. Beginning with the 1908 volume, it was a publication of the entire junior class. Although the student body voted on December 22, 1919, to change it to an all-college publication, supported by student tax instead of by the sale of copies, the junior class continued to edit it, and to feature their own members, through 1938. After that year it became a senior class publication (consequently the Class of 1939 was featured in both the 1939 "Junior" *Garnet*, published in 1938, and the 1939 "Senior" *Garnet*, published in 1939.)

From the 1879 through the 1911 volumes, the *Garnet* functioned intermittently as the yearbook of Union University, often listing students, faculty and clubs from the Albany branches.

Since 1910, the *Garnet* has been overseen by the PUBLICATIONS BOARD and its successors.

**Contents.** Except that both contain the names of all (or nearly all) members of the senior class, the early *Garnets* have almost nothing in common with those of the late twentieth century. The rise of photography accounts for the most immediately apparent difference; the nineteenth-century editors used prose to accomplish what some later editors sought to do in part (or during some periods, almost exclusively) with photography.

More fundamental are the differences in what the editors were trying to accomplish. Most later editors probably gave the question little thought; they did their best to imitate the yearbook with which they were familiar, perhaps attempting some minor innovations. The earliest editors, however, did think about their purpose, and editorials in the first two volumes allude to the two functions of a yearbook that, separately or in combination, have held the greatest appeal to subsequent editors.

The 1877 editors understood the yearbook to be a remembrance book (though they were not quite able to see that it would primarily serve their own classmates at some future time)

If any 'son of old Union,' burdened with the care and responsibility of business or professional life, shall, in glancing over these pages, have his work made easier, his burden lighter, by the recollection of his own joyous 'College Days,' we shall feel that our labor will not all have been in vain.

The next year's editor had clearly felt the temptation to address the campus as immediately and directly as did other student publications, and he regretted that it seemed impossible

A publication of the professed character of the Garnet, however, for the most part a mere compilation, presents at best but little margin for real criticism, adverse or favorable, as the case may be.

The 1894 editor sounded the theme again

The college public knows that the field which its annual covers, though wide and extensive, has very little depth - the hard pan is only just beneath the surface. It can, to be sure, record the triumphs of our nines and elevens, the records of our athletic association, the scores of our tennis tournaments; it can show the work of our clubs and the strength of our societies, but of itself it accomplishes little.

But the 1926 editor reiterated the first editors' vision in a foreword that read, in its entirety,

In this you have our record to use or not. If it may help at some future time to revive the faded memories of this pleasant life, its purpose will have been fulfilled.

As this sequence suggests, the editors' conception of the *Garnet's* role, instead of evolving, oscillated irregularly. Very likely the editors who felt good enough about the College to speak of "joyous College days" and "this pleasant life" found it easiest to produce a remembrance book, but even they were also tempted to address the contemporary college.

In the early decades, the *Garnet* often contained jokes ("Stayle Joacques" in the first volume). Literary contributions (usually poetry) appeared through at least 1917, returning briefly in 1924-25 and in the late 1960s and the 1970s.

From time to time early editorials complained about such issues as required military drill (1881) and the failure of the trustees to choose a new president (1887, 1888). The *Garnet* would again take a strong stand on issues in the 1960s and 1970s, discussed below.

For long periods, however, the yearbook was designed primarily to create a record of the college experience of most students. From 1928 through 1936, the yearbook included a several-page "Chronology" of the past year. Athletics figured prominently, with end-of-season summaries for most sports, and photographs of athletes. The first action sports photos

appeared in 1896, but they did not become common until much later.

Student clubs, and usually the names of their officers, were a staple of the annual until about 1962; a few were included until 1967, after which they were usually ignored. In the earliest years, however, the *Garnet*, like its predecessors, not only included all active student organizations, it also permitted students to invent clubs solely for the purpose of seeing their names in print as officers. This practice was a frequent subject of complaints against the yearbook; the first letter-to-the-editor published in the *Concordiensis* (December 1881) deplored

page after page of eating clubs, whist clubs, boating associations, orchestras, quartettes, etc., etc., that exist only in the minds of the editors, and are only a mass of names to tickle those who love to see themselves in print.

Even those editors who were apparently most aware that their real audience was their own class in future years found it difficult to create a record of the College's academic life, and some hardly tried. Through 1940, *Garnets* contained lists of the faculty. The first annual included a photo-montage of faculty heads mounted on drawings of gymnasts' bodies, and a few faculty photos appeared in 1883, but for the most part photographs of any kind were scarce in the *Garnet* until 1902. Individual photos of faculty members appeared for the first time in the unusually innovative 1934 volume, and the following year the yearbook published individual photographs of all of the faculty except instructors and those who were away from the campus.

Such thoroughness was never attempted again; the following years saw varying coverage of the faculty: sometimes photos of departmental groups—in the later years without identification of the individuals; sometimes lists without photographs; or photos of department or division heads only; or a selection of photos of individuals, not necessarily identified; or no notice of the faculty at all. 1960 set a new standard for the quality of faculty portraits, but from 1966 through 1988 faculty members appeared only incidentally in the yearbook and were rarely identified.

Through 1954, the yearbook was usually dedicated to someone, often a faculty member.

The essence of the yearbook is the record of the class and the students who constitute it. The *Garnet* listed all four classes until it became a senior class publication in 1939, and until 1937 each class contributed a history to each volume. The class histories usually combined jocularly with sentimentality; the freshman and sophomore historians typically devoted most of their space to shedding the best possible light on success or failure in the class fights (see HAZING AND CLASS FIGHTS).

Individual photographs of the featured class (the juniors, until 1939) were introduced in 1902, and in the same issue a group photo of the senior class was added (group photos of classes became common for a while).

Membership in student organizations was first noted in the senior lists in 1894 and became a regular feature in 1899. These notes began to accompany the photos in 1902; the feature became optional in 1969 and appeared for the last time in 1971.

Teasing characterizations of students first appeared in 1881 in the form of real or invented literary quotations; they would later accompany the photographs until 1928.

Fraternity group photos, common from 1916 until 1956, yielded briefly to composites, then disappeared until beginning a comeback in 1976. Fraternity histories first appear in 1934.

The *Garnet* of the 1960s and 1970s not only mirrored radical changes in student life and attitudes; it sometimes also became a participant. This period saw markedly increased sophistication in the use of photography—although not all editors seemed interested in sustaining the higher standards. The 1960 annual, as mentioned above, featured excellent photo portraits of faculty members; the first color photograph appeared the following year. The 1965 *Garnet*, on the other hand, relied heavily on candid snapshots—fully one-fourth of them, some students complained, taken in the editor's fraternity—and on dirty jokes.

Under the influence of Artist-in-Residence ARNOLD BITTLEMAN, the 1967 *Garnet*—the only one to be published in two volumes—went much further than its predecessors in using photography, with a few words of text, to evoke the experience of four years at Union, but the photographers rarely took their cameras into classrooms or pointed them at student activities. The next year's editors, continuing to feature photo-essays, also evinced a much greater preoccupation with social and political issues. Their yearbook began with a recitation of recent assassinations—John F. Kennedy, Martin Luther King, Robert F. Kennedy—and quoted Carl Sandburg: "What place is this / Where are we now?" It published long interviews with President Martin, faculty members, and students, focusing on the "quiet revolution" at Union. Campus photographs, usually dark and seldom of frivolous activities, were accompanied by many grim shots of downtown Schenectady and local slums.

Reflecting deepening student opposition to the war in Vietnam, and the accompanying rebellion against institutional traditions of any kind, the 1969 yearbook, edited by Donald Beach Barrett, was perhaps Union's most provocative. Renaming itself "The Union Book," it published even more interviews than in 1968, and more of them were hostile to the College. Students and a few faculty members contributed

poems, essays, and screeds on creativity, racism and nuclear power. Graduating seniors were allowed to accompany their photograph with a brief message to the world, often a quotation or thanks to a professor; the practice continued through 1971. A few photographs were themselves unconventional, showing the student with back to the camera, or naked, or with wife or dog, or holding a pistol or a guitar.

Though eventually selected by the Museum of Modern Art for its collection of "outstanding and innovative college publications," the 1969 yearbook aroused some immediate local controversy with one photograph: an instructor and his wife posed in their home with their small child, unclothed and unmistakably male; it faced, on the opposite page, a formal photograph of a conservative trustee.

The *Union Book* continued in roughly the same vein for several years; 1970 included abundant coverage of the anti-war movement and many essays. Campus photographs were often snapshots. Senior photos were presented in random order, and students frequently devoted the adjacent space to angry or sentimental messages. The next two years saw a return of aesthetically ambitious photography, usually high-contrast, but some students complained that the yearbook made too little attempt to record campus life. The 1971 yearbook, measuring 16.25 inches high and 12.5 inches wide, was the largest Union had ever published; 1972 was only slightly smaller.

From the late 1960s until the mid-1970s, yearbook photographs of campus life were usually quite austere, rarely showing frivolity or partying. By the end of the 1970s, the mood had changed entirely, and for the next decade most of the annuals portrayed student life as centered on partying. With a few exceptions, such as 1986, the yearbook used many snapshots, often of low quality.

In 1976 the editors chose the brightest binding in many years (sky-blue); they and a large number of students felt good enough about the College to create an ensemble photograph of the student body on the Terrace Wall, something no one would have thought to attempt a few years earlier. Several student body photographs appeared in the next few years. In 1978, the yearbook devoted a section to the arts, including color reproduction of oil paintings, poetry, etc.

In 1980, justifying their decision to return to the name *Garnet*, the editors explained

As we pass from one decade to the next, our needs and sentiments have been altered. We no longer need to remain broken from tradition, in order that our voices be heard.

In the final decade covered by this volume, the yearbook was almost entirely graphic, and its photographs conveyed a dominant impression of communal high spirits. Solitude, a common theme of some earlier periods, virtually disappeared, and relatively few

photographs captured the formal occasions that had once accounted for nearly all the yearbook's photography. Although the grounds had never looked better, landscape scenes were rarely featured, while the inside of the ever-more-complex academic and other facilities, where students spent much of their time, went virtually unrecorded.

**Garnet Guard.** The Garnet Guard, an organization comprising all alumni who graduated from Union fifty or more years earlier, was founded at ReUnion, 1988. It holds an annual dinner.

**Garnet Review, a Journal of Opinion.** A tabloid-sized student journal to which faculty members also contributed, the *Garnet Review* intended to publish twice a term, beginning in November 1982. Only three issues appeared, the last, in the fall of 1983, under the name *CrossCurrents, a Journal of Opinion*.

**General Electric and Union College.** Union was ninety-one years old when Thomas Edison brought his recently created electrical machine works to Schenectady in 1886, but the College had become so weak that even some trustees doubted its survival (see LANDON, JUDSON S.). Just six years later, when Edison's companies merged with others to form General Electric (GE), the machine works by the river already dwarfed in size and local influence the college on the hill. As Union celebrated its centennial in 1895, the works clattered with machines and construction consequent on the decision to make Schenectady the company's operating headquarters.

The relation between the General Electric and Union College in the twentieth-century echoes some themes of President ELIPHALET NOTT's efforts to relate money, manufacturing, and education in the nineteenth century. There is the same sense of pioneering ideas, of confused motives, and of missed opportunities. Had either initiative led to permanent ties of dependence, the result would not necessarily have been beneficial to American education. (If one believes such critics of American technical education as historian David Noble, such ties did lead to domination of colleges by big industry, and the result was disastrous.)

GE's first impact on Union involved real estate. In 1899, with several top GE executives already living in the vicinity of Union, the company purchased from the cash-poor College seventy-six acres of woods just east of the campus and began building a controlled real estate subdivision for executives and leading engineers and scientists (see GENERAL ELECTRIC REALTY PLOT). For example, EDWIN RICE, to be GE's second president, became Union College's next door neighbor.

Around the corner from Rice and also close to Union lived CHARLES PROTEUS STEINMETZ, scientist, socialist and Schenectadian. More important to

Union, he was an electrical engineer itching in 1902 to escape industry for academe.

That spring he had just received an honorary degree from Harvard, where Charles Eliot had called him the "foremost expert in applied electricity in this country and therefore the world." This increased his academic employability, and also his value to GE. Steinmetz was not only a superb technical contributor and consultant, but also a high-toned sales tool for GE power equipment. High-level customer representatives were often brought to meet the short, bearded man whose presence assured that the foremost expertise in applied electricity in the world would be embodied in GE equipment.

In the summer of 1902 Union President ANDREW VAN VRANKEN RAYMOND proposed to Steinmetz that he reorganize and run the Union department of electrical engineering. "It seems likely GE arranged this position with Union," writes Steinmetz biographer Ron Kline, "in order to keep Steinmetz in Schenectady." There may have been even more to the story. GE was engaged in a number of efforts to reshape Schenectady to support one of the world's biggest industrial works, putting ten thousand people to work on a meadow where not many years earlier a few farmers had grown broom straw. This required constantly expanding the plant, building the GE Realty Plot and other residential developments, ripping up the city's streets and laying street railway tracks, and modernizing the city's water and electrical systems. This in turn required the support of the city's politically powerful interests. Helping out Union College may have been one step in GE's efforts to build this local power base.

The deal was certainly not made by GE as any effort to get permanently into the business of reshaping college education. The company had no particular educational agenda, and had no trouble attracting sufficient college graduates from all over the country. (Finding enough skilled workers was more difficult; in 1900 GE had set up an apprentice program to train some of its own.)

Union had organized an electrical engineering program in 1895, but it had not really gotten off the ground. It had had seven graduates in 1898 and would have only four in 1903.

President Raymond, who had been searching for a way to reverse the College's long post-Civil War decline, heralded Steinmetz's arrival as the beginning of "Union's New Era." He predicted that the College would soon have the "best electrical engineering department in the country." By the standards of the time, GE's proffered support was substantial. When Steinmetz joined the faculty, the company donated \$12,000 worth of apparatus over the next six years. It paid one-half of the cost of the electrical engineering department, plus Steinmetz's salary, which was then \$18,000 per year, and in 1905 it contributed \$25,000 for the

construction of an Electrical Engineering building (see BIOLOGY BUILDING).

Steinmetz organized the department, gave two lectures a week, and directed a laboratory and postgraduate work. In the fall of 1903, eleven leading GE engineers gave postgraduate lectures at Union. Over the next decades, GE engineers supplemented the regular faculty to teach courses in electrical engineering practice and in design.

The results of all this, however, were less spectacular than originally hoped. Union's electrical engineering department grew, graduating some twenty people per year by 1913. But this was only about one-third or one-fourth as many as the nation's leading electrical engineering programs. Several GE engineers earned a Master of Electrical Engineering degree at Union between 1905 and 1920, but in the latter year GE launched an in-house "Advanced Course," discussed below. Although two men who would be numbered among GE's most accomplished engineers—Frank Peek and Ernest Alexanderson—began Union's PhD program in Electrical Engineering (1917–32), Ellsworth DeWitt Cook is the only known GE engineer among the eight men who earned the degree.

The modest success of the electrical engineering department did lead Union's recovery in the early twentieth century, but Steinmetz, whose socialist ideals inclined more to cooperation than to entrepreneurship, never focused all his energies on the department. Had he been so inclined, and had his organizational skills approached his technical skills, Steinmetz, who was even more famous as a technologist than Nott had been in his time, might have brought the College to national prominence as a technical institution.

Steinmetz's joint tenure at GE and Union, then, marked no new era, but it did lead to some important results. Elmer Creighton, brought in from GE as an assistant professor from 1904 to 1906, made important inventions that helped protect electric power systems from lightning and established a GE-funded Protective Apparatus Laboratory in the basement of Washburn Hall for work on the field of lighting arresters. Steinmetz worked with assistant professor Olin Ferguson at Union to write *Theory and calculation of transient electric phenomena and oscillations* (1909), an important advanced electrical engineering textbook.

Steinmetz retired from undergraduate teaching in 1913, though for a while he occasionally lectured to graduate students, and he remained a nominal member of the faculty until his death ten years later. GE continued to support the post of professor and electrical engineering department head, which next went to ERNST BERG. He had worked for GE, and became department head at the University of Illinois in 1909. GE president Charles Coffin guaranteed Berg \$10,000 per year in salary and consulting fees to come to Union. During Berg's tenure, repeated attempts were made to

set up some kind of a cooperative program between GE and Union. They never succeeded, in contrast to the situation at MIT, where a long-running cooperative EE course with GE was established.

Steinmetz, Berg, and the Union administrations they served did not believe in cooperative education. They agreed that the relation of industry and academia should be what Kline calls "autonomy through cooperation." Colleges should concentrate on teaching theory, and leave the practical side of education to industry. The company would accomplish this through its "test course": programs of rotating assignments in the factory for new hires that exposed them to industrial reality. The test course also helped the company indoctrinate new employees and select future leaders.

Potential existed for closer ties in graduate studies. But GE decided in 1920 to set up its own equivalent of a master's degree level engineering program, the Advanced Course. This largely superseded advanced graduate training for GE engineers for many decades, although eventually the academic credential won out. In 1978, GE established the Edison Engineering Program, which combines participation in the Advanced Course with the earning of a university MS degree. Union became one location where a program participant could earn a master's degree under company auspices.

Many Union alumni became prominent in GE. Among the most outstanding were Philip Alger (MA, 1920), one of the leaders in the development of the modern electric motor, and Walter R.G. Baker '19, who later became GE's vice-president in charge of electronics. On a different note, Julius Emspak '33, a machinist who attended Union with the help of a GE educational loan, went on to become a successful union organizer at GE's Schenectady Works in 1936. In that campaign, he gained allies and helpers at the College.

Many more conventional GE leaders who were not Union alumni became active supporters of the college. For example, Willis R. Whitney, GE's director of research from 1900 to 1932, served as a Union trustee (1919–52), and actively raised funds in the mid 1920s for the College's science and engineering programs. Whitney also proposed to Union biology professor JAMES MAVOR a program of research on inducing mutations in fruit flies using GE's X-ray equipment. Mavor completed and published important work in this era that foreshadowed and contributed to the later Nobel Prize-winning achievements of Hermann Müller. Company president EDWIN RICE JR., a trustee from 1906 to 1935, served as board president, 1931–34. Until 1965, Union's board always included at least one GE executive: Roy C. Muir (1943–60), W.R.G. Baker (1944–46), C. Guy Suits (1952–63), John W. Belanger (1960–65).

Many former GE staff members have followed Steinmetz onto the Union faculty, and many faculty

members in engineering and the sciences have benefited from summer or sabbatical employment as consultants to the company; indeed, the potential for such extra income was sometimes a factor in the College's successful recruiting of faculty.

Such local institutions as the Dudley Observatory, the Schenectady Museum, and the local chapters of scientific and engineering societies are meeting places for Union and GE scientists and engineers. Even in a few liberal arts areas, some opportunities for cooperation have emerged. For example, the College library maintains the SCHENECTADY ARCHIVES OF SCIENCE AND TECHNOLOGY, set up with an initial grant from the GE Foundation as an archive of historical documents, many of them about GE. Union College American Studies scholar David Nye published *Image worlds* (1985) a book about GE's use of photography.

Like other local institutions, the College long benefitted from GE's philanthropy, such as a \$75,000 contribution on the occasion of the company's seventy-fifth anniversary in 1953, and the 1967 gift of a GE 415 computer and related equipment valued at about \$400,000. Union's EVENING DIVISION was launched in 1914 in part to serve GE employees in search of further education, and such enrollments remained an important factor in the success of extension programs. In 1960/61, about three-quarters of the students in Union's graduate programs were GE employees.

However, the results of the Union-GE connection never lived up to the "New Era" hopes that heralded Steinmetz' arrival. The impact of GE and Union on one another are not remarkably different from those of any other giant corporation and its local college. GE and Union, for better or worse, did not take full advantage of the opportunity opened up in 1902 for an intimate connection, and no similar opportunity has since emerged.

See also: SUMMER INSTITUTES FOR TEACHERS.

—George Wise

**General Electric Realty Plot.** Between 1807 and 1812, President ELIPHALET NOTT and his wife acquired the land comprising the present campus along with about two hundred additional acres to the east, west and south. The subsequent disposition of the "extra" land is discussed in the article on CAMPUS.

Except for the College quarry, located southwest of the present Brown School on Rugby Road, Union never made significant use of the mostly wooded land lying east of the campus. In 1882/83, the College sold two large lots comprising most of what is now the east side of Wendell Avenue, in the block north of Rugby Road. After the College had sold its Long Island City property in 1898 (see HUNTER'S POINT, GREENPOINT AND STUYVESANT COVE PROPERTIES OF UNION COLLEGE) and used most of the proceeds to retire debts, the institution had much less cash than many trustees had

hoped. Under pressure from President RAYMOND and alumni, the board then agreed to sell the remainder of its surplus land in Schenectady.

In March 1899 the board approved the sale of lands west of the present Seward Place as individual building lots and the sale of seventy-six acres east of the campus to the Schenectady Realty Co., for \$750 an acre. The latter sale was made on March 30, 1899, and the property was deeded on May 6. It was described at the time as "all the woods from the western line [i.e., the present Lenox Road] to the extreme eastern end of the woods, except some little land that is owned by private parties [i.e., the Wendell Avenue land sold earlier]." As far as can be determined from photographs, the area was in fact one of sparse woods interspersed with meadows.

Formed by a group of the principal directors of the General Electric Co., the Schenectady Realty Co. bought the land in order to sell building lots to General Electric's officers and leading employees, though in the event other people purchased many of the lots. The plot was laid out by the firm of Parse and DeForrest, but each owner retained his own builder, and in many cases his own architect (some of the houses were built from published plans). The houses were consequently designed in a variety of mostly traditional styles.

Beginning in 1900, about 125 houses, most of them larger and more expensive and on larger lots than the average Schenectady homestead, were erected on the roads laid out in this area, presently bounded by Union Avenue, Lenox Road, Nott Street, West Alley, the rear property lines on the south side of Rugby Road, and a short section of Wendell Avenue.

From Union's viewpoint, the sale not only raised some badly needed cash (the \$57,000 it received slightly exceeded the College's annual operating budget), but also ensured that the school would have respectable neighbors to the east. At that time, no permanent campus buildings lay east of Washburn Hall—i.e., east of the present Schaffer Library plaza. Simple survival was a more tangible concern than the College's possible future need for more space than the hundred-acre campus could provide.

For about fifty years, the College and the residents of the plot (who included several faculty members) lived amicably as neighbors. The first serious problem arose in 1948, after H. LAURENCE ACHILLES, the College's Director of Religious Education from 1925 to 1938, gave Union his house at 1811 Avon Road. When the city's Zoning Board denied the College's request for a variance in order to house the CHARACTER RESEARCH PROJECT there, the College decided not to appeal, and it subsequently sold the house in 1950.

Shortly after the Zoning Board's decision, DELTA CHI purchased 1227 Wendell Avenue, the long-vacant home of General Electric president G.E. Emmons, on April 5, 1948, and sought a variance from the single-



family zoning. Denied the variance, fraternity members tried to move in without it on April 16, and the city blocked them with an injunction. About sixty local residents signed a petition against the fraternity.

The ensuing litigation lasted eleven years. Delta Chi and three other fraternities tried to argue that a fraternity could legally be construed as a single family, but they lost at every stage.

Delta Chi was joined in the litigation by KAPPA SIGMA, which in late 1949 bought the Gilbert estate on the corner of Avon Road and Lenox Avenue, SIGMA CHI, which bought the Horman house at 1173 Wendell Avenue in July 1952, and THETA DELTA CHI, which bought the Lovejoy house at 1222 Lenox Road in October 1954. The College did not encourage the fraternities in this battle, and President Davidson privately predicted that they would lose. While the case was in the courts, a new ordinance passed in 1956 specifically barred fraternities in the plot.

When the Zoning Board ruled in September 1959 that the fraternities must move out of the plot within a year, the fraternities abandoned the fight. Union agreed to erect College-owned buildings for them on campus (the present POTTER and RAYMOND HOUSES), giving three of them a stipulated amount of free rent in exchange for ownership of their houses in the plot (Delta Chi had sold its property to the Unitarian Association).

The College thus acquired three more houses in the plot (it had just purchased Professor Gordon Silber's house at 69 Union Avenue), and it had a prospect of acquiring other houses. After selling the Achilles House in 1950, the trustees had changed their policy in 1954, agreeing that:

expansion in the college campus will be essential in the foreseeable future and that the logical direction of growth is toward the east.... Provided rezoning to permit college use can be approved, it is the intention of the trustees, as favorable opportunities are offered, to reacquire title to properties in this area to the extent that their use for college purposes would be permitted by zoning considerations.

Although efforts to have the zoning changed were unsuccessful, in 1956 the board adopted a naive plan to gradually acquire all of the plot by outright gifts or by life-use gifts (purchase was ruled out). In 1958, the board decided to acquire property in the plot as far east as Wendell Avenue, "by purchase if necessary," but zoning remained an obstacle to the use of these houses. Davidson reported to the board in that year that the principal objections had been made by the property owners nearest the campus, but that they had been backed by the Realty Plot Association, making it impossible thus far to change the single-family zoning.

There the matter rested for the next two decades, as Union leased some of its houses to faculty members and hoped for a change of climate. However, the houses began to require repairs that seemed more expensive

than their use justified. The College razed the former Kappa Sigma house at 1017 Avon Road (corner of Lenox Road) in 1961 and two years later it tore down the Lovejoy house (the former Theta Delta Chi house) at 1222 Lenox Road. In 1976 and 1978, Union's houses at 4 and 2 Douglas Road fell to the bulldozer.

Cumulatively, these actions alarmed some residents of the plot, and in April 1978 the Realty Plot Association announced that it would ask the City to designate the entire plot an historic district, a change that would, among other restrictions, narrowly limit the circumstances under which owners could tear down their buildings. A few weeks later, the College applied for a demolition permit for the Horman house at 1173 Wendell Avenue (the former Sigma Chi house, originally built by the president of the H.S. Barney department store).

The City refused to issue a permit while the historic district designation was pending, and on July 13, 1978, the City Council created the GE Realty Plot Historic District. In hearings connected with this process, the College provost mentioned tennis courts or athletic fields as possible future uses of Union's property in the plot, and the College's attorney depreciated claims that the plot was sufficiently old or special to warrant protection.

An incident during the time that the College's application for a demolition permit was pending has entered the folklore of the conflict in distorted form. When a backhoe crew arrived to disconnect the utilities leading to the Horman House, a neighbor, thinking demolition was imminent, blocked the machine with her car and confronted the crew, which then left. It came to be widely, but erroneously, believed that she had saved the house by standing in front of a bulldozer.

The whole episode strengthened the resolve of the association (though not of all plot residents) to resist the College's presence in the area. Of the six houses in the plot that no longer exist, one, the Steinmetz house, was razed by the City in 1944, and another, the former Delta Chi house, was demolished by the Unitarian Association to make way for its church. The other four were those torn down by the College, which was very slow to take into account the increasing aesthetic value residents and others had placed on the houses and on the neighborhood as a whole.

During those years, the College gradually acquired more property in the plot, by gift and by purchase, but generally leased the houses to faculty members or administrators, and did not try to use them for College purposes.

The largest property in the plot, the Rice-Parker house at the corner of Lenox Road and Union Avenue, originally built for GE president and Union trustee EDWIN RICE JR., came to Union by bequest in 1981. By 1984, the College owned all but two of the buildings in the area bounded by Lenox Road, Union Av-

enue, Wendell Avenue and Douglas Road, as well as several properties elsewhere in the plot. In 1985, the City changed the zoning law to prohibit the issuance of special use permits for educational and religious uses in the plot.

The former Silber house at 69 Union Avenue has been the home of DUDLEY OBSERVATORY since spring 1979, and the College has used 1294 Lenox Road, the former Edward Raymond house, as a guest house since 1988.

After the period covered by this book, the College successfully challenged the constitutionality of the 1985 zoning law.

**Geological Hall.** The building at the east end of South Colonnade, erected in 1855–56, has at various times contained the chapel and meeting hall, administrative offices, the Geology and Biology Departments, the library and museum, the bookstore, and the offices of the Security Department. The basement was used as a library annex (1941–48), and since 1949 has housed the RATHSKELLER.

Geological Hall is probably the least firmly named of Union's major buildings. During the early stages of planning and construction, JONATHAN PEARSON called it "the library building"; he first used the term "Geological Hall" in his diary on May 23, 1855. That name—which signified only that the building would house, *inter alia*, a mineral collection—was probably chosen because President Nott refused to call the hall "chapel" or "library"; he was determined to transfer both to the "round building" when completed. That plan was finally abandoned only long after his death when it became clear in the late 1870s that the round building was nearly impossible to heat in winter.

Geological Hall was also sometimes called Natural History Hall and "the Treasurer's building." Sometime before 1963 it was named Stoller Hall, for JAMES STOLLER, but the name fell out of use about two decades later. The whole building is now often loosely called Old Chapel, properly the name only of the western part of the first floor.

Ramée's 1813 plan called for buildings at the east ends of North and South Colonnades, but the College could not afford to build them when the colonnades were completed by 1816. The north building, called Philosophical Hall (see ARTS BUILDING), was completed in 1852 to house physics and chemistry. In 1855, the College borrowed against anticipated income from the NOTT TRUST FUND to begin Geological Hall.

The size and general exterior appearance of the building had been determined by Ramée's plan, but the interior layout was settled only after Eliphalet Nott, Jonathan Pearson and others had produced and debated numerous proposals, including Nott's scheme to put the stairs in an external bell/clock tower. Pearson

consulted William L. Woollett, an Albany architect who had previously worked on Philosophical Hall, which Geological Hall was intended to mimic in external appearance; Woollett prepared plans for the basement vaulting and gave advice on several points, but otherwise the interior design was apparently worked out by Nott, Pearson, et al. Supervision of the builders also fell to Pearson.

Ground was broken May 24, 1855; the chapel was first used in January 1856, and the treasurer's office in April 1856.

The internal configuration of the building placed the two-room office of Treasurer Pearson on the east end of the first floor and the chapel on the west end. There were only two floors; the ceiling of the first was high (as it remains in Old Chapel) and a single long, steep flight of stairs rose between the chapel and the offices to the second floor, which housed the library and the natural history museum.

The effects of completion of Geological Hall were manifold. The chapel moved from South Colonnade to larger and more attractive quarters in the new building, freeing space for recitation rooms in South Colonnade. The treasurer's office moved from rooms on the first floor of North Section, South College, it had long shared with the Registrar and the post office, to a spacious and airy office with a separate fireproof room for the college records. The natural history museum and the library, both in storage since 1854, could now be conveniently displayed.

Designed to serve several different functions, each of the building's three major parts—the chapel, the east end, and the second floor—has had a more-or-less independent history.

**"Old Chapel."** As the location of compulsory morning services until well into the twentieth century, and the only space large enough for student body meetings, the chapel was at the heart of campus life. Although intended to be temporary, the Geological Hall chapel was a pleasanter place than its predecessors (see CHAPELS), but it did not become the attractive room we now know until it was renovated in 1873, during the administration of President ELIPHALET NOTT POTTER. The present balconies were constructed to accommodate library books formerly shelved on the second floor, the west wall of the room was paneled, a raised platform was constructed for the pulpit, and ornate stairs to the balcony were built at the west end of the room.

After the library books were removed to the Nott Memorial in 1879, mineralogical display cases took their place, and sometime before 1890 the stairs were moved to the east end of the room. By 1873, the chapel had an Estey cabinet organ, later replaced by a piano. Electric lighting was installed in 1894. By 1916 many portraits hung on the walls.

Students originally sat on pine benches, probably taken from previous chapels. In 1890 these were replaced by "opera chairs"—i.e., theatre seats, which were in turn replaced in 1915 by dark oak pews. The theatre seats were then moved to the balcony, which needed more seating capacity. In 1920, more seats had to be added, bringing capacity to a very crowded five hundred. Freshmen were required to sit in the balcony, and to leave last. In 1919 a door was created in the east end of Geological Hall for the use of freshmen.

After MEMORIAL CHAPEL opened in 1925, the Geological Hall room (which quickly began to be called Old Chapel) ceased to be used regularly for religious services, though it continued to be the site of lectures, meetings and occasional film showings. It was redecorated in the summer of 1935.

The pews remained until 1949, when the room was converted to an art gallery; some were then moved to the Rathskeller, where they are still in use as booths. With creation of the art gallery, the balcony was partitioned into two offices and a classroom for the Art faculty. The two-man faculty left Old Chapel by fall 1967, but the gallery remained in use until the Arts Building provided exhibit space in 1974. "The Coffeehouse," a student-run performing arts organization featuring ballad-singing, stand-up comedy, and discussions, gave Friday night programs in Old Chapel from 1971 until it moved to the Student Center in 1980.

During the winter of 1980/81, the Hale House dining hall expanded into Old Chapel. Not long after, a \$180,000 grant from the Mobil Foundation underwrote the 1983/84 renovation of the entire first floor of Geological Hall as a seminar and meeting center.

**The Top Floor.** Geological Hall originally had only two floors. Some time not long before August 1856, the library, which, like the museum, had been in storage since August 1854, was set up in alcoves on the north and south sides of the room above the chapel. It is not clear whether Pearson, who was librarian as well as treasurer, ever carried out his plan to place cases for the mineral collections on top of the book cases, rising to the ceiling, and erect a catwalk to give access to the upper shelves (an idea he got while inspecting libraries in New York City and New Haven).

The natural history MUSEUM was at first housed elsewhere on the second floor; the Wheatley mineral collection, purchased in 1858, had its own room. After the library moved down to the Old Chapel balconies in the early 1870s, the museum took its place in the room above the chapel, which, by 1896 (and perhaps from the beginning) had simple balconies of its own, mirroring those in the room below. The museum moved to the Nott Memorial in 1906, and its space was divided into classrooms.

The BIOLOGICAL SCIENCES DEPARTMENT, in the person of Harrison Webster, moved in 1874 from

Philosophical Hall into the west end of the second floor. Forty-five years later, the department moved back across the campus to North Colonnade. During that time, however, Geology had finally established itself in Geological Hall, beginning with James Stoller, who taught both Biology and Geology. When Biology left in 1919, Geology and Stoller stayed.

Other departments were also wholly or partially lodged on the first or second floor of Geological Hall until Bailey Hall opened in 1927, and the English and History Departments moved there from Geological Hall. The English Department's space was then remodeled for the sole use of Geology. The laboratory on the east end of the second floor was converted to an exhibit room and the space over Old Chapel was reconfigured: the two rooms on the south side became one large laboratory and the two north rooms were combined into a lecture room. Following a further renovation in 1935, the second floor accommodated an elementary and an advanced laboratory, a lecture room, and the department library and office.

The GEOLOGY DEPARTMENT, much diminished after 1967, remained in Geological Hall until it moved to the Science and Engineering Building in 1971. In 1970/71 it shared the second floor with the *Concordiensis* and the Black Alliance (both of which left after that year), the Academic Opportunity Consortium (which moved to Old Gym about 1974), and the Department of Religion (which left after 1971/72). Upward Bound had offices on the second floor circa 1971–77.

Following the 1983/84 renovation of Old Chapel, the College used a \$150,000 Pew grant to renovate the second floor in 1984, creating a new floor at the east end of the building between the first floor and the top floor, at the level of the Old Chapel balcony. The famous old stairs, ascending from the outside doorway to the top floor in a single steep flight, were now interrupted by a landing at the new second floor.

The Writing Center occupied the new floor from the fall of 1984 until it moved to Whitaker House in the fall of 1987; since then, that floor and the top floor have housed the Career Development Center (the former Placement Office). During construction of the CAMPUS CENTER, 1985–88, various offices displaced from that building, including the *Concordiensis* and WRUC, were temporarily quartered on the upper floors of Geological Hall.

**The First Floor East.** The east end of the first floor was originally used only by Pearson as treasurer, but by 1869 the Registrar's office had also moved there from South College. By 1886, the offices of the president, the bursar, and the secretary of the College were there too, although it is possible that space for some or all of these was taken from the east end of Old Chapel or from the east end of what is now Hale House dining

hall. Later, presidents Webster and Raymond used an office in WASHBURN HALL, but President Richmond returned to Geological Hall. Various administrative offices and the bookstore, started about 1909, continued to be in the east end of Geological Hall until they all moved to the ADMINISTRATION BUILDING in 1919.

In that year a door to the outside was created at the east end of the building; a corridor connected it with the stairs to the balcony at the rear of the chapel, for the use of freshmen attending chapel. The remaining space became recitation rooms and an office for the Economics Department. The *Concordiensis* had its office (later called the Student Activities Office) in the southeast corner from at least 1922 until 1928, when it moved to Washburn Hall. In 1935, the Geology Department expanded to the first floor and created a mineralogy laboratory in the southeast corner and an exhibition room for the Wheatley Collection in the northeast corner.

After Geology moved out in 1971, its first floor space was occupied until 1982 by the Security Office. The 1983/84 renovation of Old Chapel replaced the offices on the first floor east with a large vestibule, cloakroom and restrooms.

**Basement and Attic.** The basement was unused until the summer of 1941, when a gift from Bernard Baruch enabled the College to finish it for storage of library books. The floor was lowered and paved, and stacks installed for 40,000 volumes. After the books were removed to the LIBRARY ANNEX in 1948, the basement was remodeled for the Rathskeller, a use which had long been suggested by the massive piers and vaulted ceilings. The present entrance to the Rathskeller was created at that time (entrance to the basement had formerly been through Mrs. Perkins' Garden); the present roof over the entrance was probably constructed in 1983/84.

The attic of Geological Hall, long convenient to the Treasurer's and Registrar's offices, gradually accumulated papers, ledgers, books and museum objects, some of them now among the most valuable parts of the College Archives. The work of retrieving and preserving them was done over a period of time by Codman Hislop, CHARLES WALDRON and HELMER WEBB. The College's elephant folio edition of Audubon's *Birds of America* is said to have been retrieved from the attic sometime before 1922.

Belfries were erected on the roofs of Geological Hall and Philosophical Hall in the summer of 1925; the bells were controlled by a clock in the administration building.

**Geology Department.** The geological sciences began at Union in 1809 when Professor of Logic and Belles Lettres THOMAS CHURCH BROWNELL was sent to Europe to prepare himself for the new position of

Professor of Chemistry and Mineralogy and to acquire specimens and apparatus. Chemistry and mineralogy were closely allied at that time, as much of the search for new chemical elements focused on exotic minerals of unusual composition. Geology, on the other hand, was typically included in the broader field of natural history, and at Union College the professor of natural history normally taught botany, zoology, and geological subjects, devoting one trimester or less to the latter (see BIOLOGICAL SCIENCES).

Brownell returned in 1810 and presumably—records of the curriculum are spotty in that period—began to offer the new courses. During the following ten years the mineral collection grew through Brownell's efforts in the field and donations from alumni and others. When he left Union to pursue a ministerial career, the collection, for which he had maintained a partial catalogue, numbered about two thousand specimens.

JOEL NOTT, President Eliphalet Nott's eldest son, joined the faculty in 1820, taking over teaching mineralogy and chemistry upon Brownell's departure. While on the faculty he participated as a geologist/mineralogist in a survey in upper Michigan and in another, under Amos Eaton, preliminary to construction of the Erie Canal. Becoming increasingly involved in his father's business ventures, he did not teach after the summer of 1830.

After Joel Nott, chemistry, and perhaps mineralogy, were taught by CHESTER AVERILL '28 (1830–35); by Edward Savage '33 (1837); and following Savage's death of tuberculosis, by JONATHAN PEARSON '35 (1837–57). Averill and Pearson also taught natural history, but only Pearson is definitely known to have taught geology, which does not specifically appear in the curriculum until 1837/38, when it is mentioned in the College's report to the Regents (but not—such was its peripheral status—in the College catalogue). The Regents' report for the following year gives the first account of teaching in this field: "Geology was taught by regular recitations from De La Beche's *Principles of geology* and mineralogy by comparing the minerals placed before the class with the description found in Cleveland's work."

In his diary for April 1845, Pearson confirms what other records suggest: "Nat. His. has been hitherto lamentably neglected in our Colleges and of course in this. It is still imperfectly taught here; Mineralogy little or none; Geology, somewhat, by Hitchcocks elementary book; Botany, much better by lectures, etc..."

For a long period, though not always annually, Pearson taught an optional recitation course in geology twice a week to sophmores, and a one-term lecture course on botany, geology, and mineralogy in the third term of the senior year. With the introduction of the divided curriculum of 1854, geology became an optional one-term recitation course in the senior year for

students of the scientific course and was no longer offered to the students of the classical course.

It is not certain where geology had its headquarters before the opening in 1856 of GEOLOGICAL HALL at the east end of South Colonnade. That building would house the mineral collections (except for the period 1907–32, when they were on the third floor of the Nott Memorial) and the geological laboratory until 1971.

Pearson shed responsibility for chemistry when the Analytical Chemistry Laboratory was opened in 1857, and CHARLES JOY was hired to teach the subject. At the same time, Pearson stopped teaching geology and mineralogy, which remained absent from the undergraduate curriculum for about four years.

Joy was succeeded later in 1857 by CHARLES CHANDLER, who had earned a German PhD with a dissertation on mineralogical analysis. Although the Analytical Chemistry Laboratory was used for the single undergraduate chemistry course, it was primarily devoted to a series of advanced courses outside the regular curriculum, taken by special students solely interested in training in chemistry. The description in the College bulletin shows that mineralogy was an important part of that work: "When [the student] has in this manner acquired sufficient confidence in his skill, he can proceed to the actual Analysis of Minerals, Soils, Manures, [etc.].... Mineralogists will have access to the College [mineral] Cabinet, and can also take a full course with the blowpipe, and in Qualitative and Quantitative Analysis."

Pearson noted in his diary for December 1858 the presence on campus of a young mining engineer named Freeman, apparently spending the winter with his friend Chandler: "A few students embrace the opportunity of studying mineralogy with him." Chandler himself, very busy with chemistry, did not reintroduce undergraduate geology and mineralogy until 1861/62, when the report to the Regents describes him teaching mineralogy to the junior and other classes for two terms and teaching geology to third-term seniors, using Tenney's textbook supplemented by thirty-eight lectures. Over the next few years, the two subjects were taught, sometimes separately and sometimes combined in a single term, by Chandler and by his successors.

The College MUSEUM, including its mineral collections, had been under the successive curatorship of Averill, Pearson, and Chandler. In 1858, trustee Edward Delavan purchased the Wheatley Collection and donated it to the College (see WHEATLEY AND PFORDTE MINERAL COLLECTIONS); ever since it has been the core of the departmental collections.

Union had begun a two-year civil engineering curriculum in 1845, but it had no room for geology or mineralogy until it expanded in 1875 to a four-year program.

Maurice Perkins took over Chandler's responsibilities as professor of chemistry and museum curator in 1865, but he apparently soon handed off the teaching of geology to HARRISON WEBSTER '68 who had joined the faculty as a tutor in natural history immediately after graduation and quickly advanced to a regular faculty position. A marine zoologist who published extensively in that field, Webster apparently had some interest in geology as well. When his leadership of the faculty opposition to President Eliphalet Nott Potter led to his dismissal in 1883, he accepted the professorship of geology and natural history at the University of Rochester, and when he returned to Union as president five years later, he revised the curriculum to make geology a required course for all students.

In the meantime, Webster's successor as Union's professor of natural history was another alumnus, JAMES STOLLER '84, who began teaching early in 1885 but took a leave at the beginning 1886/87 for a period of further study in Europe. Perkins again taught geology through part or all of the five years after Webster's departure in 1883, and is recorded as turning that responsibility over to Stoller in 1888.

Stoller's main interest at that time was biology, and six years later he ceded geology to Union's first full-fledged geologist, CHARLES S. PROSSER. Prosser introduced a fairly complete geology curriculum, with courses in geology, historical geology, paleontology, economic geology, areal geology, field geology, and mineralogy and lithology. The Wheatley Collection had become part of the Geology Department in 1890, and during his five-year stay at the college, Prosser put considerable effort into rehabilitating and adding to the collection, especially with paleontologic specimens. Prosser's ambitions for a strong geology department initially received some support from the trustees and administration, but at the beginning of 1899 the board imposed severe retrenchments and ordered the president to dismiss three faculty members, including Prosser, who left at the end of 1898/99.

Stoller then resumed responsibility for geology and the mineral collections as well as biology, but his interests gradually shifted to geology, and he carried out some very significant early work on the surficial and glacial geology of the Mohawk-Hudson region. Stoller's divided responsibilities necessitated a reduction in course offerings in geology for the next twenty years, but geology continued as part of the department of biology and geology.

The importance of fieldwork to a geological education, recognized at least as early as 1889, grew during Stoller's years until an honors course in glacial geology required at least sixty hours of fieldwork, while an honors course in field geology required (in 1916/17) at least 120 hours of fieldwork and a detailed report on an assigned area.

The mineral collections remained an important educational asset, curated from 1908 to 1917 by a volunteer, Dr. D.S. Martin. The developments of X-ray crystallographic methods, beginning with the Braggs in 1912, reached Union College in 1919 when Albert W. Hull and Wheeler P. Davy taught a series of special lectures in crystallography and x-rays.

Geology again became a separate department in 1919, and as Stoller neared retirement, the need for a successor led to the appointment in 1922 of EDWARD STAPLES COUSINS SMITH. E.S.C. Smith—one of whose student nicknames, Alphabet Smith, derived from his use of three initials—was the Geology Department for thirty-five years, from Stoller's retirement in 1925 until 1960. During that interval the department was a successful, smoothly functioning operation which produced many fine geologists who left the College with considerable pride in their department.

Often consisting only of Smith and a series of young visiting lecturers, however, the Geology Department did not participate during those decades in the College's growth. During the 1930s the department offered a master's degree, and the lecturer was often a graduate student working on his degree, or a recent graduate of the department.

As Smith in his turn neared retirement, Philip Hewitt was hired in 1957 as assistant professor. He took over in 1960, and in 1961 the department expanded for the first time to two regular faculty members with the appointment of Leo Hall. Through much of the 1960s these two gradually increased the offerings in geology. The greater interest, stemming in part from improved employment opportunities, coupled with a steady increase in Union's enrollments, encouraged Hewitt and Hall to ask for additional faculty in the department.

This request was bolstered by the report of an external examining committee chaired by Franklin and Marshall geology professor John Moss. The need for an additional faculty member, and for a restructuring of the course offerings in geology, was apparent to the visiting committee. But the small number of geology majors (averaging five a year for the decade 1955–65), and declining enrollments in introductory geology (the result of changed curricular requirements), led the administration to refuse. Although the formal decision was made by the trustees, the board, undertaking little or no investigation of its own, apparently merely ratified the administration's decision.

Faced with continuation of what they perceived as inadequate support for geology, Hewitt and Hall resigned in 1967 to accept positions at other institutions. Union's department was allowed to "run down" as no new majors were added to the program and courses were taught to remaining geology majors, until 1971, through an arrangement with RPI.

Although the geology major was dead, and no investment in a full-fledged department was considered, the College wanted some geology courses taught as part of the general education of Union students, and in 1971 it hired marine geologist Herman Zimmerman to teach introductory-level geology and oceanography. For the next thirteen years his success was measured, in part, by the number of students who left Union to pursue a major in geology at other institutions. Officially a part of the civil engineering department, Zimmerman and the former geology department's physical possessions, including the mineral collections, occupied the second floor of BUTTERFIELD HALL when civil engineering moved to the first and third floors in 1971.

During the late 1970s and early 1980s, civil engineering department chairman Frank Griggs led an effort to reestablish a geology department and major. A group of geology alumni also discussed the possibility. This movement finally bore fruit through the singular contribution of John S. Wold, a geology major of the Class of 1938, and his wife, Jane. At the end of 1982 the Wolds contributed a million-dollar endowment with the hope, ultimately realized, that it would spur the re-establishment of a geology department at Union and support a chair in geology.

Wold's support did not result in the rapid renewal of geology one might expect, however. During deliberations over the possibility of restarting geology, the College requested advice from an external committee which, perhaps on the basis of its understanding of what Union considered possible for geology, made what can best be described as minimal recommendations. In particular it gave little consideration to the equipment and space needs of a new, modern geology department. Even the recommendation of at least three full-time faculty was a bare minimum rather than an estimate of the optimal size. The College clearly began the renewal of geology with a substantial underestimate of the costs involved for a quality program. Since the administration insisted that the new department should be a quality addition to Union, the new department was placed in a resource squeeze, especially regarding space. The lack of appreciation of the facilities needed by a geology department is an old problem; Charles Prosser clearly had some difficulty in making his needs known to the administration in the late 1890s, and as did Hewitt and Hall in the 1960s.

The Geology Department was officially re-established in 1985, with Zimmerman as chairman and three full-time faculty lines. Kurt Hollocher was hired as a new assistant professor, but before the third position could be filled Zimmerman announced his resignation to take a position with the National Science Foundation. The College then hired Paul Ryberg in the fall of 1986 as a visiting professor, and began the search for a new chairman.

The two-year search ended with the appointment in the fall of 1988 of George Shaw as the John and Jane Wold Professor of Geology and chair of the Geology Department. During the 1988/89 academic year the department hired John Garver as the permanent third faculty member, filling the complement of faculty envisioned for the rebirth of geology at Union. At the same time the department added more than a quarter of a million dollars in new equipment to start it on the path to becoming one of the country's best equipped undergraduate programs. In addition, the first batch of geology majors began a trend of increasing numbers of majors. Indeed, this history must end just at the point where the Geology Department begins its new life in earnest, perhaps to achieve the promise first envisioned by Charles Prosser.

—George H. Shaw

**German.** Union's first CURRICULUM allowed students to substitute FRENCH for Greek, but other modern languages were not offered until much later. German was apparently first taught as an optional course for some members of the senior class in the third term of 1829/30. It was offered in most years from 1832 onward.

The identity of the earliest instructor or instructors is unknown. JOHANN LUDWIG TELLKAMPF, a political refugee from the faculty of Göttingen University, joined the Union faculty in the fall of 1838 to lecture on Political Economy and on Roman Law; he remained until 1843, sometimes also teaching German.

Following Tellkamp's departure, someone taught German during the eight years before the arrival of the next regular professor of the subject, another exile. The German-born ELIAS PEISSNER (1851–63) also taught French, Spanish and Italian; he published a *Comparative English-German grammar* in 1853.

When Peissner left in 1863 to fight in the Civil War (where he perished a few months later), he was briefly replaced by WENDELL LAMOROUX, and then, in 1865, by WILLIAM WELLS, who had worked in Germany and earned a PhD from Bonn University. Wells remained at Union until 1902, at first teaching all modern languages himself. From at least 1888 he had assistance in teaching German.

The principal long-term professors of German since then have been:

FRANK COE BARNES (1903–34), who earned his PhD in Germany and served as visiting observer of schools in Prussia and Saxony.

MORTON COLLINS STEWART (1910–41), who published five textbooks for German students.

GEORGE HENRY DANTON (1935–47), whose books included *Germany ten years after* (1928) and several American textbooks for students of German.

Frederick Klemm (1947–78)

HANS HAINEBACH (1948–66)

Anton Warde '64 (1969–)

Sigrid Kellenter (1977–), who published *Die Sonett bei Rilke* (1982).

Hainebach and Kellenter were German-born.

German has usually been an elective subject, but some study of the language was required of scientific students from 1842, and of classical students from 1887. With the onset of the First World War, students in both courses were usually allowed to choose between French and German, and instruction in German may have ceased entirely during 1917/18.

The special, highly pre-professional BS in Chemistry and BS in Physics courses originally allowed a choice of modern languages, but from 1931 until their demise in 1950–51 they required four years of a one-hour course in German.

German clubs have existed at Union intermittently since 1926. (See STUDENT ORGANIZATIONS: ACAD-EMIC / PRE-PROFESSIONAL.)

**Gillespie, William Mitchell** (1816–Jan. 1, 1868). Professor of Civil Engineering and Mathematics, 1845–68.

Born in New York City, the only child of James Gillespie, a prosperous Canadian-born merchant tailor, and Ann Waldron Gillespie (who shared an early American ancestor with CHARLES WALDRON '06), William Gillespie attended Columbia College, graduating in 1834.

He then studied at the École des Ponts et Chaussées in Paris. This period of his life is obscure. Gillespie is usually said to have remained in Europe for the entire decade following his graduation from Columbia, but there is much evidence to the contrary. He dated a poem about the Hudson Highlands "Sing Sing, Aug. 1835." In an 1844 draft of a letter to ALONZO POTTER he alluded to "my ten years practice of Civil Engin. in an unusually varied range." When Gillespie arrived at Union in May 1845, JONATHAN PEARSON noted in his diary, "He is a grad. of Columbia College, by prof[ession] an Engineer, at which he has laboured some 8 to 10 years, traveled 1 yr in Europe...."

CADY STALEY '65, who had known Gillespie as teacher and colleague, and edited some of his books, said in an 1895 address that, after studying in Europe, Gillespie "returned to this country and had considerable practice in railroad engineering and other branches of engineering before he came [to Union] to teach."

Nothing is known, however, of Gillespie's actual employment during this period.

A manuscript volume of his quite conventional poetry preserves verses dated each year from 1833 to

1838, but ten years after graduating from Columbia he seems to have made a more serious trial of the writing life. When he sailed from New York on July 1, 1843, "carrying despatches for the U.S. Legation in Naples" (according to a newspaper "Departures" notice which is confirmed but not explained by his travel diary), he had arranged to send travel articles to the *New York Tribune*. The "Special Correspondent" identified only as "W.M.G." filed thirty-four "Glimpses of Europe" from Scotland, Ireland, Belgium, Germany, Switzerland and Italy. The Italian reports omitted his weeks in Rome; following his return to New York on May 25, 1844, he turned his detailed notes into a guidebook, *Rome as seen by a New Yorker* (1845). He also wrote at this time for the *New World* and for the *American Review*.

In mid-1844 he had several conversations with professor Alonzo Potter, Union's vice-president and the teacher of a course on technology. In September Gillespie apparently sent Potter a long letter (which survives only in draft) setting forth his views, based on his knowledge of European engineering education, of how an American engineering course should be structured, and the advantages that would accrue to a liberal arts college inaugurating such a program:

The addition of such a Course to Union College, which had the character of aiming ... to mould her students into useful, practical and efficient men, would increase her popular reputation & make her still more the nucleus of general science,—attract to her more students in other departments as well as the new one ... and prove her willingness to keep pace with the higher aims of the utilizing spirit of the age. Students would be drawn aside from crowding the professions which have hitherto monopolized the title of "Liberal," and would learn that the most honorable post is that in which they can be most useful. Those who subsequently devoted themselves to engineering as their occupation would at once enter on their duties with qualifications, cultivated ability and experience which would give them a high rank among their associates, and would rapidly advance them from grade to grade, far beyond those who on the one hand with evermore practical experience would show by their inevitable deficiencies and blunders their want of a scientific education, and those, who, on the other hand with the best math. & sci. instruction of ordinary colleges would be totally inefficient from their inability to apply in practice their treasures of theory. These two classes conjointly form ninety-ninths of the juniors of the profession...

The letter's closing ("Trusting that my ideas may meet with your approbation & that you may consider the foundation of a Professorship of Civil Engineering & Math applied to the arts, advantageous to the College as well as useful to the cause of science in general") strongly suggests that the immediate impetus for teaching civil engineering at Union came, not—as has long been supposed—from President ELIPHALET NOTT, but from Gillespie. Whether designedly or not, however, Gillespie's letter could scarcely have been better calculated to harmonize with Nott's long-standing

educational views. Moreover, the proposal came at a time when the technical school then known as the Rensselaer Institute, which Nott had long served as president, seemed about to close.

Wherever the impetus originated, it resulted in Gillespie's joining the faculty in May 1845, a month after Nott resigned his Rensselaer position. Shortly afterward, Edgar Allan Poe, who still considered Gillespie primarily a writer, included a "character" of him in "The Literati of New York."

In character he has much general amiability, is warm-hearted, excitable, nervous. His address is somewhat awkward, but "insinuating" from its warmth and vivacity. Speaks continuously and rapidly, with a lisp which, at times, is by no means unpleasant; is fidgety, and never knows how to sit or stand, or what to do with his hands and feet, or his hat. In the street walks irregularly, mutters to himself, and, in general, appears in a state of profound abstraction.

In person he is about five feet seven inches high, neither stout nor thin, angularly proportioned; eyes large and dark hazel, hair dark and curling, an ill-formed nose, fine teeth, and a smile of peculiar sweetness; nothing remarkable about the forehead. The general expression of the countenance when in repose is rather unprepossessing, but animation very much alters its character.

Gillespie may not yet have grown the beard he wears in all surviving likenesses.

From the start, Gillespie was an important member of the faculty, not only because he had charge of building the first engineering school in a liberal arts college, but also because he was an energetic man of parts. He remained abreast of his field during a period of rapid change—sometimes even anticipating changes—yet he was able to give attention to other interests as well. When appointed he was the only member of the faculty who had never been Nott's pupil and the only one with extensive knowledge of Europe. Though a very sociable man, he was too exacting and reserved a teacher to be popular with students, but he seems to have been thoroughly respected. His nickname among undergraduates was "Old Geodesy."

Pearson several times tried to summarize Gillespie in his diaries, writing in 1854

Wm M. Gillespie professes Engineering, and may be considered a very industrious, hard-working man, has a thorough knowledge and decided taste for his department and has built it up to what it now is, one of the best Engineering schools in the country. Our young Engineers are spoken well of and readily succeed in getting desirable places on leaving college. He is looked upon as an indispensable man for the college. His books are much used and are about to be increased by the addition of a surveying [book] on which he has spent great labor and thought.

and in 1861

Speaking of order and executive talent—no one in our Fac. has these qualities to the same degree Gillespie has. He prides himself on them, boasts of them—and sometimes carries them to excess perhaps. Nevertheless it is better to have an occasional excess than a constant want of them.



He is a great enthusiast in his profession—a great buyer of books on the subject and a close student. I know of no one among the Faculty whom I more highly respect for industry, faithfulness in teaching, conscientious discharge of duty and willingness to work.

Yet there was something enigmatic about Gillespie. Stealy B. Rossiter of the Class of 1865 noticed it, and tried thirty years later to define it:

He was a man different from all the others; a man singular in habit, in reserve, in sensitiveness and in a certain solitariness that he always carried about him.... His was a fine, penetrating intellectuality. There was a strain of dissent about him, a sort of reserve of conclusion, a hold of faith not as yet a grip, but only the faintest kind of a touch, that was piquant and attractive to some minds that felt coerced by the positiveness of Hickok and Lewis.... His nature was rather cold, but not insensible to beauties of nature, nor unobservant of passing events...nor unappreciative of the loyalty and regard of the students. But he was not a man to inspire ardent affection.... He walked apart.

One factor in Gillespie's reserve was probably his religious heterodoxy. He was one of the first Americans to take an interest in Auguste Comte, publishing, under the title *Philosophy of mathematics* (1851), a translation of part of the first section of the French philosopher's massive *Cours de philosophie positive*. Though he admired Comte sufficiently to visit him and commission his portrait, Gillespie was not a disciple: prudence led him to omit from the translation two chapters that would have provoked religious opposition, and intellectual scruples compelled him to warn more committed Comteans that he did not entirely subscribe to positivism ("I should tell you that I do not fully accept Comte's new religion. It may be from not comprehending it," he wrote to one). He was careful to keep Union's name out of his activities in this realm.

Nevertheless, when Eliphalet Nott suggested Gillespie in December 1846 for the Rumford professorship at Harvard, he confided to President Everett that some at Union objected to Gillespie on religious grounds, an issue he thought would be less troublesome in Cambridge. Gillespie remained at Union and kept his religious views to himself, but he was sometimes trapped. Once, forced to devise a prayer in chapel, he said (if the story is not apocryphal) "O Lord, Thou art a very gentlemanly person; we thank Thee for thy gentlemanly conduct toward us."

Gillespie not only served as the sole professor in the school of engineering, which graduated an average of nine students a year, he also taught a course on architecture open to all students and found time to write three standard treatises. His *Manual of the principles and practices of road-making, comprising the location, construction and improvement of roads ... and railroads*, first published in 1847, remained in print through 1899 and contributed to the rapid improvement of American transportation. Probably the most influen-

tial book published by a Union faculty member in the nineteenth century, it was also translated into Japanese.

The *Treatise on land-surveying*, printed for his classes in 1851 and first published in 1854, was reissued in various forms through 1887, as was his posthumously published *Treatise of levelling, topography and higher surveying*, edited by Cady Staley. By 1859, the road-making and land-surveying books together were earning him a thousand dollars a year, equal to the salary of most senior professors. Except for a mediocre poem on the death of Abraham Lincoln, he apparently produced no non-technical writing after coming to Union.

In 1853, when the noted engineer James Renwick retired from Columbia's professorship of natural philosophy, Gillespie was mentioned for the job (Renwick called him the best-qualified Columbia alumnus), but Gillespie declined to apply. "If the prospect ahead at Union be fair & sure," he told Union trustee ALONZO PAIGE, "I prefer, for several personal reasons, remaining there."

Gillespie returned to Europe from May to September 1855, traveling five thousand miles through France, Germany and Austria to visit technical schools and collect instruments, models and drawings. Among the purchases he sent back were the magnificent geometrical string models he bought from the widow of their maker, mathematician Theodore Olivier (see OLIVIER MODELS).

The University of Tennessee gave him an LLD in 1857, and Columbia, which had sounded him out that year about heading an engineering school (not founded until much later), gave him another in 1859.

Sometimes called on to survey the campus, Gillespie made a large and still-invaluable map of the College property in 1847, and later he laid out the foundation of the NOTT MEMORIAL. During the Civil War, he delivered lectures on military engineering and laid out earthworks and entrenchments for the UNION COLLEGE ZOUAVES to practice on.

One of the few senior professors to live off campus, Gillespie resided, both before and after his 1864 marriage to Harriet Amelia Bates, on Union Street near the foot of the hill; there they began the custom of hosting a dinner for the senior engineering majors. The couple had one son.

By 1867 Gillespie was seriously ill with tuberculosis. The disease had apparently not been correctly diagnosed at first, and even after it was, he refused to take to his bed. Chosen one of the United States Commissioners to the World Exposition, he made a last trip to Paris in the summer of 1867, hoping for some improvement, but when he returned he had nearly lost his voice. He nevertheless tried to continue teaching in the fall semester that year, sometimes whispering his lectures to the newly-hired CADY STALEY, who repeat-

ed them aloud. Gillespie died on New Year's Day, 1868, aged fifty-one.

Nothing on the campus commemorates the founder of engineering at Union, though a short nearby street is named for him.

**Girling Center.** The Girling Center, a former private club off Aqueduct Road about three miles north of the campus, was owned by the College from 1970 until 1990.

The facilities were built in 1908 for the Locomotive Club, a private club run by American Locomotive Co. employees. Renamed the Niskayuna Club in 1959, it opened its membership rolls; a skating rink and swimming pool were built the next year. By 1970, the Niskayuna Club had become bankrupt, and in January of that year the College acquired the property, together with some adjacent land—a total of about fifty acres—intending to use it to supplement campus athletic facilities.

Bought with a gift from trustee Wallace S. Girling '17, the property was named the Girling Center in his honor. A retired vice president and director of Ginn and Co., publishers, Girling had been an all-round athlete and star tennis player at Union, a football referee for over fifty years, and former president of the Touchdown Club of America. He died five months after the College's purchase of the property.

The College announced that starting in 1971, Union would play varsity football and baseball games on fields to be constructed at the Girling Center, thereby freeing Alexander Field for intramural sports. The Athletic Department and players resisted, however, and the plan was never executed. Until Achilles Rink opened in 1975, the Girling Center rink was used for general skating and by the hockey club, which had formerly been dependent on finding free time on RPI's ice. The College used the clubhouse for various social functions and the pool was open in the summer to faculty and alumni families, but these functions did not seem to justify the upkeep, and by 1982 the College had put the property up for sale. It was removed from the market in 1985 while the trustees considered other possible uses: in January 1990, the College sold the property to the Lawrence Group, which used it for corporate offices. The pool became the Niskayuna Town Swimming Pool.

**Godshall, Wilson Leon** (April 26, 1895–June 1, 1956). Professor of Political Science, 1923–34.

Born in Lansdale, Pennsylvania, the only child of Wilson Hackman Godshall, a banker whose ancestor came to America from the Netherlands in 1702, and Blanche Rosenberger Godshall, Leon Godshall was educated entirely in the Philadelphia area.

His studies at the University of Pennsylvania, where he ran on the track team and joined Lambda

Chi Alpha, were interrupted by wartime service in the U.S. Navy, 1917–18. He had charge of instruction in signaling and navigation at Cape May, New Jersey, and in the naval unit at the university.

Taking a BS in 1919, Godshall taught English at a Philadelphia high school (1919–21) while taking graduate courses at the University of Pennsylvania. After earning an MA in anthropology (1920) he switched to political science, receiving a PhD in 1923. He also taught during this period as a graduate assistant in anthropology and political science.

In 1920 he married Annetta Howard Metcalf; they had no children. An Episcopalian, he served as a vestryman while he lived in Philadelphia. He described himself at this time as a Republican, a philatelist, and a dog fancier.

Godshall came to Union in 1923 as the only man teaching political science in the combined Department of History and Political Science. Specializing in contemporary politics of the Far East, he published his dissertation, *International aspects of the Shantung question* (1923), and took a leave during his second year at Union (1924/25) to travel to China on the University of Pennsylvania's Penfield Scholarship. Although his research there was hampered by the civil war, he lectured at St. John's University, Shanghai, and gathered material for his book *Tsingtau under three flags* (1929). *Documents illustrative of American foreign relations* appeared in 1931.

On a sabbatical leave in 1931/32, Godshall spent fifteen months traveling in Russia, China and the Philippines, after which he frequently addressed local groups on the situation in the Far East. He also made the news by successfully suing the Soviet travel agency, Intourist, for \$240, the amount he had been forced to pay for railway sleeping accommodations which he had been led to believe were included in the price of the ticket.

The first professional political scientist at Union, Godshall was an effective teacher and an energetic promoter of the discipline. He advanced quickly, to associate professor in 1927 and to professor in 1929. In 1927 he persuaded the College to establish a separate Department of Political Science, staffed by himself and an instructor. The staff increased in 1930 to three men teaching twelve courses. During the summers he usually taught at other institutions, including the University of Washington, the University of Pennsylvania, the Potsdam (N.Y.) Normal School, and the University of the Philippines.

Godshall also directed the College debate team, and at President Day's request he undertook an investigation (as "auditor of student affairs") which uncovered serious graft in the student sale of dance tickets. He contributed an article on "A United State of Europe" to the 1931 *Faculty papers*, and served as an officer of the local Kiwanis Club, which he frequently addressed.

With the development during 1933 of the divisional system of college structure and the accompanying major curricular revision, however, the College temporarily took a direction quite contrary to that which Godshall had been pursuing, and his zeal brought him into conflict with most of his colleagues in the social sciences. The divisional system (see DEPARTMENTS, DIVISIONS AND CENTERS) was intended to replace departments—including the one Godshall had recently created—and the new CURRICULUM was expected to save money by, among other means, abolishing courses judged too narrow. Godshall's "highly particularized course on the Far East" was singled out for criticism (though it did survive in the new curriculum).

While Godshall claimed to favor the new dispensation, many of his colleagues felt certain that he opposed it and that he was less willing than they were to sacrifice for the common good. In this charged atmosphere, several incidents provoked abnormally strong reactions. Godshall apparently persistently gave his students false information about the consequences of the new curriculum; based on this misinformation (which Godshall claimed was innocent) a student wrote to the *Concordiensis* falsely warning that the new curriculum would deprive pre-law students of a necessary course. At an assembly in Memorial Chapel, Acting President Ellery, who knew that Godshall was responsible for the letter, branded it "disloyal to Union College," and the *Concordiensis* then editorialized: "If a member of the faculty is responsible for the false and disloyal statements...we recommend his instant dismissal."

Godshall had also annoyed his colleagues by walking out of a faculty committee meeting which had altered the political science schedule against his wishes, and by ignoring Ellery's instruction to obtain divisional approval before transferring funds from the defunct PI GAMMA MU to the International Relations Club.

A strong sentiment for Godshall's dismissal arose in the Social Studies division. Ellery was reluctant to act because DIXON RYAN FOX had been chosen as the next president, to take office July 1, 1934. After Godshall tried to lobby the new president, Graduate Secretary CHARLES WALDRON wrote to Fox on March 31, 1934: "[Godshall] must be told very firmly to either get out or work fairly with those in charge. No college can afford to have a professor actively misrepresent situations and foment dissatisfaction."

Fox was inclined to suspect the faculty of provinciality and precipitateness: "The bonds that unite professors and clergymen to their charges should not be dissolved for light and transient causes," he told Waldron. "We must not think of the College as a club of altogether like-minded people." Waldron responded that the *Concordiensis* letter "would be passed over if it stood alone. It was just the last of a series of difficulties [Godshall] had raised during the year....[T]he bad

part of it to me consists of the lack of sticking to the truth, to put it mildly, and the behavior which has led every man in the division to feel that he is not to be trusted and to desire his leaving."

Fox then apparently approved Godshall's removal, provided that the divisional faculty would put their reasons in writing and that the College would give him a paid terminal leave. Nearly all of the senior faculty in the social studies division signed a May 1, 1934, petition asking Ellery to request Godshall's resignation, on grounds of "incompatibility and loss of confidence."

Given a leave for 1934/35, Godshall quickly found a position as assistant to the president and chairman of the department of political science and history at Williamsport Dickinson Junior College. In 1939 he moved to Lehigh as professor of international relations, becoming head of the department in 1946 and remaining until his sudden death ten years later, at sixty-one. He wrote or co-authored several textbooks after leaving Union, and served during 1952-54 as cultural affairs officer at the U.S. Embassy in Tokyo. He returned to Union once: in 1949, as National Director of the Foreign Policy Association, he delivered an address in Memorial Chapel to a local group called the Cooperative Evening Assemblies.

**Golf.** Faculty members founded Union's first golf club, the College Hill Golf Club, in 1896. President ANDREW V.V. RAYMOND—an accomplished golfer—alternated with Professor E.E. HALE as its president, but students could join as associate members. Although Harvard played Yale that year in America's first intercollegiate golf match, Union's golfers played only local clubs—often a team from General Electric.

At first the team used a golf links laid out in the College PASTURE, but following an 1898 merger of the College Hill club with the Schenectady Golf Club, the combined club played on a country club course. Students continued to use the Pasture course for a few years, but student participation in the club seems to have ended about 1904.

In 1923, Union students Norman Bates '24 and Robert Cox '26 finished first and third respectively in intercollegiate competition at the New York State Championships. Union did not then have the four golfers necessary to enter a team, but the following year the Athletic Board accepted golf as a minor sport and students formed a team.

The College maintained a golf team for the next thirty-eight years, except the war years 1941/42-1945/46. Frequent matches with boys' schools in the early 1930s proved helpful in admissions recruiting, but by 1961 the team's overall record was a dismal 63-155-14. The team had lost all seven games the previous year, and thirty-four of forty in the most recent five years; when the local courses began to charge the College higher rents, the sport was abandoned.

In 1965/66, after arranging to use the newly opened Walhalla Country Club in Rexford, a revived golf team returned to intercollegiate play; it enjoyed successful seasons in 1969/70, 1973/74, and from 1978/79 through 1986/87, but otherwise fared rather poorly, losing all its matches in 1974/75 and 1975/76 and winning only one each in 1987/88 and 1988/89.

**Goose Hill.** The residential area of Schenectady north of the College was once called "Goose Hill."

**Gotshall, William Charles** (May 9, 1875–Aug. 20, 1935). A prominent railroad engineer and inventor who had no connection with the College, William C. Gotshall established by bequest a scholarship fund for engineering students at Union. The gift apparently came about because a Union alumnus, John A. Delehanty '77, was the law partner of Gotshall's friend and attorney, James J. Farren. Plaques honoring Gotshall and Farren were installed in the portico of the General Engineering Building in 1937.

**Governance.** "Governance" refers to the process of making and implementing decisions about campus policies and procedures, ranging from matters of curriculum and academic requirements to faculty evaluation, student conduct, facility development, budgetary allocations, and extra-curricular activities. While the BOARD OF TRUSTEES remains the final authority on all campus matters, Union's board, like those of most colleges, has delegated much decision-making to College employees. What changes over Union's two centuries is the nature and extent of this delegation.

Three national trends in higher education governance are clearly visible in Union's history. First, in the nineteenth century most early American colleges, despite their original sectarian control and religious mission, became essentially secular in their outlooks and appointments. Union was atypical in its non-denominational origins, but Protestant clergy nevertheless constituted nearly half of Union's board in its first fifty years. By 1895 clerical representation had dropped to thirteen percent, mirroring national trends.

A second national nineteenth-century trend was an increase in the campus authority of presidents as the executive began making many decisions that had formerly been deferred to the infrequent meetings of the board (held annually at Union, 1804–70, and semi-annually, 1795–1803; 1871–1911—though the local "resident trustees" were empowered to act between meetings.) By dint of his personality and his sixty-two year tenure (1804–66), ELIPHALET NOTT became an extraordinary example of the concentration of decision-making in the president's office, going far beyond the delegation of authority from boards to presidents that was happening elsewhere; he even kept the board in the dark about major commitments he had made.

During the century following Nott's death, the board reasserted its authority in fits and starts, and not until the presidency of HAROLD MARTIN (1965–74) did another president seek—with board consent—to move some authority from the trustees to the office of the president.

Third, the national trend away from the concentration of power in the presidency and towards more dispersed governance which began in the late nineteenth century is also clearly visible at Union, beginning with the gradual emergence of deans as powerful decision-makers. President ELIPHALET NOTT POTTER appointed Union's first dean in 1880, and that position was divided in 1919 between a Dean of the Faculty and a Dean of Students, although for reasons of economy the College reverted to a single Dean of the College in 1934. (See DEAN OF THE FACULTY / DEAN OF THE COLLEGE and DEAN OF STUDENTS). Perhaps more importantly, as faculty began to be hired with PhDs and well-defined areas of expertise, there began systematic efforts to expand faculty powers and authority. Union faculty established an AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS chapter in 1918 to unite faculty interests, and the movement toward granting tenure began in 1921.

With the introduction in 1933 of the division system (see DEPARTMENTS, DIVISIONS AND CENTERS), the four divisions became responsible for most of the decisions affecting their own students and faculty, while the remaining legislative power of the monthly general faculty meetings was shifted to committees, especially the curriculum committee. The faculty as a whole continued to meet, but only four or five times a year instead of monthly, and mainly to hear announcements and reports, air general problems, and vote commencement prizes.

This left the faculty with little role in making educational decisions on a college-wide basis, a problem which led in 1941 to creation of a Faculty Council with a preponderant faculty majority. Its monthly meetings were far more effective and efficient than the General Faculty meetings had been before 1933, and it became the major source of academic policies, procedures, and requirements. Three decades later, demands for student power, both nationally and at Union, resulted in a radically new campus governance system at Union in 1971.

In other ways, however, the evolution of governance at Union is atypical of national trends. While most private American colleges remained distant from governmental influence and funding until the 1950s, Union plunged into a close—though ultimately impermanent—relationship almost 150 years earlier. When President Nott sought permission from the state in 1805 to raise \$80,000 through four public LOTTERIES, the legislature consented, but with one critical *quid pro quo*: eleven state officials were immediately

added to Union's board of trustees as ex officio members, and the rules governing the filling of vacancies were changed so that the board would evolve over time until a majority of members were state officials or state appointees. Eventually the state would have been in a position to control the College, but in the mid 1820s, before this could happen, Nott seized on a legal technicality in the reorganization of the state's judiciary to successfully wrest formal control back for Union's permanent trustees.

Later, state legislative investigations (1849–54) of Nott's practice of co-mingling his personal funds with those of the College carried an implicit threat that if the charges were sustained, the state would exercise closer supervision of the College. The threat was beaten back, however (see NOTT TRUST FUND).

The second anomaly at Union was the assertive role the alumni played immediately following the Civil War. The elderly President Nott's ineffectiveness in his last few years in office, in combination with the weaknesses exhibited by his immediate successors, and the controversial administration of President ELIPHALET NOTT POTTER, sparked alumni complaints about deteriorating finances and facilities on campus. Bowing to a four-year campaign, the board added alumni trustees in 1871, making Union one of the first U.S. colleges whose alumni independently elected trustees.

Local conditions also affected the increase in the faculty's role in governance, at first retarding, and then encouraging it. For most of Union's history until the 1920s, faculty were not well organized and lacked even the modicum of job security granted by the trustees in 1921. President Nott and his immediate successors determined the curriculum, faculty salaries, and penalties for student misconduct. Although meetings of the whole faculty have been held throughout Union's history, the function of those meetings well into the twentieth century was largely limited to deciding issues concerning the standing of individual students, appointing chapel monitors, scheduling examinations, making commencement arrangements, and similar routine chores. For the decade 1851–60, no minutes survive, and apparently none were taken. In 1858, Professor Pearson complained in his diary

At the January [faculty] meeting, Prof. G[illispie] proposed that we have a Secretary and that a record be kept of our proceedings—[President Nott] did not favor the plan & it failed—like a parcel of children we never do anything without his sanction. We have had our thinking done for so long that the power is quite taken from us of doing it. At our meetings nothing is ever put to vote if it can be helped....

Early in his tenure, after concluding that the faculty was too harsh and legalistic in the exercise of its traditional responsibility for student discipline, Nott took personal charge of that function. His shrewd methods of controlling and reforming errant students became a

part of his legend, but in his dotage these methods faltered, and the faculty, which had never been reconciled to losing a power they considered integral to their role as educators, became increasingly restive. Through provisions of the deed controlling the NOTT TRUST FUND, Nott tried to bind the faculty *in perpetuo* to his methods, which he called “paternal government.” Many board members were apparently sympathetic to Nott's attempt, and the faculty consequently continued for some time to regard authority over student discipline as a fundamental governance issue. The problem dissipated with the introduction of deans.

After President Potter clashed with the faculty on the question of authority over standing of students and other education issues, the board ruled in 1880 that all matters relating to instruction were to be determined by vote at faculty meetings, and that the meetings were to be held fortnightly, rather than at the pleasure of the president. After President Potter's resignation in 1884, conditions at Union for the next forty-four years were favorable to a gradual increase in the faculty's role in educational governance. For the first four years JUDSON LANDON served as interim president, but his duties as a judge kept him in Albany much of the time, and he told the faculty in a letter that the secretary saw fit to transcribe into the faculty minutes:

The College so far as instruction and government are concerned is committed to your hands.... Prof. Staley as Dean of the Faculty will during my absence (which will be most of the time) act as President. I shall not reverse his or your actions without your consent.

Landon was succeeded, 1888–94, by HARRISON WEBSTER, the only former Union faculty member to serve as president. He was well-liked by most of his former colleagues, and under his administration we find ad hoc faculty committees considering admissions requirements and honorary degree policy, and planning the major curricular reform announced in 1890. The next two presidents, RAYMOND and RICHMOND, whose administrations spanned the period 1894–1928, were clergymen with little experience of higher education beyond their own undergraduate schooling. By 1897, faculty were serving on eleven standing committees: Education and Curriculum; Library; Catalogue; Scholarships; Athletics; Rules; Preparatory Schools; Senior Class; Junior Class; Sophomore Class; and Freshman Class. The rapid growth of the College, and the elaboration of the curriculum, during these two administrations multiplied the number of educational decisions to be made.

The last fifty years covered by this book (1940–90) saw institutions of governance firmly established to make many decisions formerly made by individuals, while increasingly regularized procedures replaced ad hoc decisions and a dependence on human memories.

The first major development in this direction was the Faculty Constitution of 1941. Its preamble was clear: "The purpose of this constitution is to promote the welfare of Union College in all matters pertaining to the instruction of students by regularizing the procedure of the Faculty in its legislative capacity, and by providing organized channels of cooperation between the Faculty, the college administration, and the Trustees." Regular faculty meetings continued, for discussion of college-wide problems, and the divisions were instructed to hold divisional meetings to serve as the primary basis of faculty deliberation. But the main innovation of 1941 was the creation of the FACULTY COUNCIL, consisting of six *ex officio* members (the president, the dean, and the four division chairmen) and eleven faculty members, three chosen at large and eight selected by their own division. For the first time in Union's history, the faculty was in a position to legislate on all academic matters, although, since "all legislative powers conferred upon the Faculty by the Trustees shall be designated to the Faculty Council," a powerful faculty elite was created to speak for all faculty. The Constitution increased the power of the faculty collectively while diminishing the potential influence of its individual members.

In 1951 and 1962 the governance system underwent minor modifications (concerning terms of office, committee responsibility, and the re-emergence of departments, instead of divisions, as the primary form of academic organization), but it continued in its essential form until 1971. Student liaison officers were named to the Faculty Council for the first time in 1962. In 1966, a student-majority All-College Council was created to legislate on non-academic matters, but the Faculty Council continued its dominant policy-making role in all educational matters, carefully recording its specific actions with a numbering system, communicating its decisions regularly to all faculty members, and preserving its records in the archives.

The divisional structure for faculty deliberations often had the effect of automatically creating faculty factions and rivalries. As late as 1968/69, faculty at a division meeting would sometimes 'bind' their Faculty Council representatives to vote in a certain way on key issues where clashing divisional interests were presumed.

The national political dynamics of the late 1960s were clearly felt at Union, spurring calls for a much more inclusive governance system. In 1970, President Harold Martin appointed a seventeen-person committee, chaired by political science professor Charles Gati and including faculty, student, administration, and non-professional staff members, to propose a new system of governance. A parallel committee of the board, headed by William Waldron, set upon the same task. The Gati committee recommended sweeping

changes, which were ultimately accepted and implemented in 1971. Gone was the Faculty Council, the legislative function of general faculty meetings, and the All-College Council. In its place was created the College Senate (sometimes unofficially called the All-College Senate), composed of twelve faculty members, seven students, and four administrators (the president, who presided, the two academic deans at the time, and the dean of students). The College Senate had broad jurisdiction over academic and other matters at the College, and elaborate voting rules required different majorities on academic and non-academic issues. Simultaneously, the reforms added two faculty and two student trustees to the board of trustees, a student representative as a voting member of the meetings of each academic department, and radically altered the committee structure. Some academic departments had already added student representatives on their own initiative, and President Martin had previously approved the concept of adding student members to most faculty committees.

Not surprisingly, the new system required an extensive shakedown. In June 1972, President Martin reported to the trustees that "our one-year trial of the new governance system...has gone fairly well. It is apparent, however, that it consumes time voraciously and that it has compounded more than it has clarified the widespread confusion about authority, responsibility, and accountability.... Administration is unquestionably more difficult in the new system in every way I can measure...." The problems of time consumption for participants, blurred lines of authority, and overlapping committee responsibilities led to a call in 1974 for modification, and major changes were made in 1975 to clarify areas of responsibility and shrink the number and size of committees. Some of these modifications had the effect of formally concentrating both legislative and administrative responsibility in a single committee's charge, e.g., in the preparation of the College's budget. Twenty committees remained, composed of a total of sixty-five faculty members, fifty-three students, eight staff members and nineteen administrators. All except the Admissions and Standing of Students committees reported their recommendations to the College Senate for formal action. Significantly, each committee also evaluated the administrators attached to their committee.

The arrival of THOMAS BONNER as president in 1974 coincided with adjustments in the governance system, and Bonner quickly experienced frustration with campus decision-making. As tensions began to grow between Bonner and many segments of the campus in several fundamental policy areas, it was the governance system that became a major source of contention and unhappiness. Finally, in April 1977, Bonner submitted a detailed, seven-page report to the

board on "Governance and Leadership at Union College." He attacked the basic structure of the governance system and argued that the 1975 revisions significantly encroached upon presidential and trustee prerogatives without ever having been submitted to the board for its approval. He concluded by calling on the trustees to accept their responsibility and "set the course." That made inevitable a major confrontation among the president, students and faculty, and a divided board of trustees. In personal ugliness, it rivaled the 1882 confrontation between President Potter, the faculty, and trustees, this time with students playing a role as visible as that earlier taken by the alumni.

The Bonner presidency collapsed in early 1978, and a related casualty was the 1971 governance system. The board appointed an outside four-man committee, chaired by Worcester Polytechnic President George Hazzard, to review campus governance and to help the board itself heal and rebuild. The so-called Hazzard report ("Report of the Union College Review Committee, June 2, 1978") found blame in all quarters, and it was clear that the governance system would need to be completely recast. Provost C. William Huntley appointed four faculty members who had not been on the Gati committee (Gardner Ketchum, Mechanical Engineering; Byron Nichols, Political Science; George Reynolds, Mathematics; Anton Warde, Modern Languages) to take on this task, along with himself and the Student Forum president, and this committee worked for more than a year to address a number of concerns.

In the spring of 1980, the General Faculty, the Student Forum, and the Board of Trustees approved a new governance system which accomplished three goals: 1) it preserved some of the important innovations of the 1971 system (e.g., faculty and student trustees remained on the board and student representation was kept on virtually all campus governance bodies, although most academic departments had dropped student representatives by 1990); 2) it responded to basic problems identified in the Hazzard report (e.g., separating legislative from management functions and streamlining decision-making); and 3) it self-consciously tried to strengthen the role of the General Faculty in all educational matters while also rebuilding an established faculty leadership so visible in the 1941 system.

The 1980 system created two basic policy councils, the Academic Affairs Council and the Student Affairs Council, in addition to reaffirming the existence of the General Faculty and the Student Forum. A Faculty Review Board was established to advise on faculty salaries, promotion, and tenure and two Consultation Groups were created to advise the President on institutional functioning and on budgetary planning and long-range needs. Only three committees were established (for admissions, athletics, and campus operations), although the door was left open to create additional

committees in the future; and the two policy councils could also create sub-councils if they so chose. In the original 1980 formulation, decisions of the Academic Affairs Council with its clear faculty majority could be reviewed and defeated by the General Faculty but, unless explicitly challenged, AAC decisions were to be forwarded to the President for final approval and implementation. A Faculty Executive Committee was established to oversee faculty interests, ensure that faculty responsibilities within the governance system were executed appropriately, and advise the president on faculty concerns.

Procedural changes in 1985 addressed such problems as how terms of faculty service would be filled in case of vacancies. Major amendments in 1989 elevated the General Faculty to a much greater involvement in campus decision-making by requiring the General Faculty to approve all legislative actions coming from the Academic Affairs Council (previously optional) and to approve all major changes in policy and procedures made by the Faculty Review Board (previously independent in its actions). One consequence was that General Faculty meetings became more frequent, more substantive and tightly focused, and better attended. Committees were also directed to publicize agendas, and written reports to faculty of all committee actions were stipulated. In addition, the Faculty Executive Committee formally took on the function of advising the president on planning and priorities, which increased its leadership in campus affairs.

—Byron Nichols

**Grades.** The history of changes in Union's grading system is essentially a history of attempts to represent a student's relative achievement with a useful degree of specificity while avoiding false precision.

The College's first known marking system, in effect by 1823, was extremely precise. The end-of-term grade in each course ranged from 0 to 100; every integer in that range was used, probably because the term grades were calculated from marks given for each recitation. The term grades for scholarship in each course, together with separate grades for attendance and for conduct, were added; thus a student taking three courses (the norm) could earn a maximum of 500.

At ELIPHALET NOTT'S initiative, the system was changed in 1856 to a five point system, described in an 1855 circular: "There are five grades of scholarship, as follows: 5 - very good; 4 - good; 3 - sustained; 2 - barely sustained; 1 - not sustained." In 1868/69, the numbers were doubled to make a ten-point system. Less than 4 was "not sustained." Decimals were used: e.g., 9.5. By 1873, engineering students could not be sustained with less than a 6; this policy was extended to cover all students by 1883.

In the spring of 1886, the faculty changed the grading system to eliminate the false precision implicit-

it in the use of tenth-point increments. Although the numerical grades continued to be recorded, end-of-term grades were reported to students only as "First grade" (9 or over), "Second grade" (8 or over), "Third grade" (7 or over) and "Fourth grade" (6 or over). Anything less was "N.S." (not sustained) or "F" (failing). "Not sustained" thereby acquired a meaning different from the one it had borne for thirty years; a student who received an "N.S." could now pass by making up some work, but an F required the student to repeat the course. The faculty abolished the "N.S." grade effective September 1929, reviving it at some later time with the new name, "Incomplete."

In 1912 the faculty decided to allow a student to know his relative standing after he had graduated. At about the same time, in an apparent effort to spot developing academic problems in time for remediation, the faculty began to report to the dean's office every two weeks on freshmen and every month on sophomores, characterizing their work as "satisfactory," "unsatisfactory" or "below passing." It is not known when this practice ended.

For purposes of establishing relative standing and eligibility for the Dean's List, in 1920 the dean replaced the system of cumulating and averaging a student's numerical grades (which had a possible range of 0–10), with an index system. Under that system, a modified version of which is still in use, the first grade was counted as a 5, the second grade as 3, the third grade as 2, and the fourth grade as 1. Because the new system gave extra value to a top grade, while allowing no value at all to a grade below passing, it presented the differences between the various passing grades more dramatically. Instead of being able to pass with 60 percent of a perfect grade, students could now, in terms of index numbers, graduate with only 30 percent (1.5). In the fall of 1961, the value of an A was reduced to 4, bringing Union into line with most other American colleges. Since 1973/74, the minimum cumulative index for graduation has been 1.8 overall and 2.0 in the student's major.

In 1935/36, the faculty began to report grades to the dean's office as A, B, C, D, and F, and grades were transmitted in that form to students,

In the spring of 1968, faculty belief that the A, B, C, D, F system was too crude to allow the necessary distinctions between levels of achievement led the Faculty Council to enact a new "twelve-point" system: A+, A, A-, B+, B, B-, C+, C, C-, D+, D and F. Coming at a time when many students were demanding a voice in decisions affecting them, and when some students were promulgating vaguely ideological objections to grading in general, this planned change aroused strong student opposition; about a month later the faculty voted to defer it indefinitely.

Meanwhile, following a long debate by faculty and students, the Faculty Council acceded in January 1970

to student demands for the institution at Union of a "pass/fail" system. Students were allowed, with various restrictions, to choose to receive only a grade of "passing" or "failing" in one of their courses. This was intended to encourage students to take the risk of enrolling in difficult elective courses; with modifications, the system continued through the end of the period covered by this book.

The twelve point grading plan returned in the fall of 1973 to renewed controversy. The College Senate passed it, postponed it and rescinded it during 1973/74. Re-introduced in early 1975, it was defeated, but a modified plan (A, A-, B+, B, B-, C+, C, C-, D and F), was finally enacted in the spring of 1978, over little student objection, and put into use in the fall of that year. The grade point index continued to be based on a maximum of four points.

In the late 1960s, the proportion of students receiving high grades increased markedly, at Union and at other colleges. This phenomenon, usually explained as originating in the unwillingness to faculty to expose their students to the military draft during the VIETNAM WAR, came to be known as "grade inflation." In 1961, about 15 percent of Union students achieved the "B" average required for the Dean's List each term. By 1968, that proportion had risen to 30 percent and by 1975 to 45 percent, even though the Dean's List requirements were raised in 1970/71 to require the minimum average for a full year. In 1976/77, the Dean's List threshold was raised to 3.35, an average slightly above B+. At the end of the period covered by this book, about 25 percent of students qualified for the list.

Other factors thought (but not proven) to have contributed to grade inflation at Union were curricular revisions that allowed students more latitude in selecting electives, an increase in enrollments of disadvantaged students (prompting easier grading of all students), the advent of student course evaluations (which helped students identify easy graders), and internal pressure on departments to retain or increase their level of enrollments.

The fluctuation of average grades over the College's full history has never been systematically studied, but many investigators have noticed that Union's mid-nineteenth-century grades tended to be very high. Two examples: Of the sixty-two juniors who took Trigonometry in the fall term of 1833, eighteen received a grade of 100 and another nine got 99's, while only six got a grade as low as 75. Twenty-three years later, under the five point grading system, twenty-eight of the fifty-two seniors who took Astronomy in the spring term of 1856 got 5's, while fourteen got 4's and the remaining ten got 3's. In neither instance did anyone come close to failing.

Even in the first half of the twentieth century, the only two studies show a "B or higher" proportion



roughly comparable to that of recent decades. A 1922 study by Dean Garis found that, although A's had become rare, B's were quite common: 3 percent received first grades, 30 percent second grades, 41½ percent third grades, 20 percent fourth grades, and 5½ percent failed.

At a 1936 faculty meeting, President Fox questioned why so few Union students got high marks even though the number of failures was not abnormal. Three years later, a study by Professor Chillrud found that, for the preceding five-year period, the breakdown had been: 13.6 percent A's, 29.3 percent B's, 31.8 percent C's, 20 percent D's, and 5.3 percent F's. Seniors' grades were significantly higher.

See also: NU SIGMA GAMMA; HONORS PROGRAMS; SCHOLARLY HONORS.

**Graduate Management Institute.** The Graduate Management Institute can be said to have begun in 1941, when economics professor BENJAMIN WHITAKER intervened with the administration on behalf of three students to permit new options in the social studies curriculum. While earning his graduate degrees at Yale, Whitaker had been influenced by the work of that university's Sheffield School of Engineering, and he saw the potential for cooperation with Union's engineering departments in establishing both an undergraduate concentration in industrial administration and, eventually, a graduate program.

In another sense, however, the Institute's lineage goes back to the first half of the nineteenth century, when President Eliphalet Nott inaugurated a scientific course on an equal basis with the traditional classical course, and then introduced the first engineering curriculum in a liberal arts college. This philosophical commitment to adapting the College's CURRICULUM to the needs of the region and the nation has been the common denominator of intellectual change at Union for most of its two centuries.

The earlier twentieth century saw the introduction, in 1906, of an option within the civil engineering course designed "to fit students for administrative positions" by substituting courses in politics, sociology, finance, business management, accounting, and corporation law for some engineering courses. This alternative course ("Option B"; later the "Administrative Option") was never available to electrical engineering students, and disappeared in 1930 when the entire curriculum was revised. But by then some courses in economics and law had entered the regular civil engineering curriculum as well.

Following the end of the Second World War, Union's undergraduate industrial administration program expanded rapidly to accommodate an influx of returning veterans and of students transferring from the engineering departments in search of a combina-

tion of technical and managerial skills. The Faculty Council approved an Industrial Administration major at the end of 1947, and it was first offered in 1948/49. In contrast to the earlier programs in which engineering students took a few social science courses, the new major initially required students to take the regular BA curriculum, and some engineering courses in addition.

In February 1960 the Economics Department hired Professor Alfred Thimm, described by Whitaker as "a most promising addition to the department staff, particularly as my successor as the administrator of the undergraduate I.A. Program." Professor Thimm was asked to continue the undergraduate work in administration and management, and also to explore the possibilities of a graduate program in Industrial Administration, which would offer advanced degrees primarily to people already working in the Capital District.

In their advocacy of a graduate program, Thimm and Whitaker were aided by advice and help from several General Electric managers who took a keen interest in the benefits it might offer the company. Dr. Armand Feigenbaum '42, one of the first to complete the undergraduate program and at that time GE's manager of Manufacturing Operations and Quality Control, played a major role in the program's intellectual development.

The founding group believed that Union might be able to integrate special insights into this graduate area of professional study, and thereby distinguish it from conventional programs offered elsewhere. Specifically, they felt that an Industrial Administration program which made use of the College's rich liberal arts offerings would, though still quantitatively oriented, acquire a special texture and emphasis. Engineers and middle managers would study not only in such areas as operations research or systems analysis, but also in psychology, sociology, history and philosophy.

In May 1961 the board of trustees approved a program leading to a master's degree in Industrial Administration. The General Electric Education Foundation contributed two \$20,000 grants to underwrite the expected losses in the first few years, but there were no financial losses, and the money was used to buy library materials. From the beginning, the program was very successful and filled an educational vacuum in the greater Capital District. The first three degrees (Master of Science in Industrial Administration) were awarded in 1964. Fifty-six more students had received that degree by 1968, when the Operations Research master's program, launched in 1966, produced its first five graduates. An advisory council was appointed in 1963, with Armand Feigenbaum as its first president.

Thimm directed the graduate program from its beginning, and Whitaker retired in 1965. Offices moved in 1967 from Bailey Hall to WELLS HOUSE. In

early 1969 the Industrial Administration program became the Institute of Administration and Management (IAM), a name change reflecting the broadened emphasis on problem-solving techniques in public systems administration, health issues, transportation and multinational management.

In 1966, after five years of sustained growth on campus, the program expanded on an experimental extension basis; in response to a request of the Kingston-Poughkeepsie Chapter of the Society for the Advancement of Management, Union began to offer Industrial Administration courses at Dutchess Community College, primarily to fill the needs of IBM. By 1969, when the program moved to Vassar College's Thomas Murphy Farm, about half of IAM's enrollment was in Poughkeepsie. In 1972, the Institute opened a center in Pittsfield, Massachusetts, the site of another General Electric plant.

Since 1969, the Institute has grown in quality as well as size. In that year the College approved a PhD program in Administrative and Engineering Systems, and Professor Leo Aroian, a statistician with a national reputation for research, came from TRW. In the fall of 1971, the Institute received a grant of \$15,000 seed money toward the operation of a newly founded offshoot, the Health Studies Center. In 1979 the center obtained a three-year, \$200,000 grant from the Department of Health, Education and Welfare.

From the mid-60s, the Institute concentrated on two major goals: the teaching of a graduate degree program whose quality would be of the highest order, and the establishment of a research climate. Professor Aroian was able to attract a small group of very able graduate students. He obtained a constant stream of research grants, and succeeded in establishing a high standard for PhD dissertations and research publications. At the end of the period covered by this book, key research areas were Health Administration, Small Business, and Life Valuation. Institute faculty have published many books and well over one hundred journal articles.

In September 1976, the Institute added to its one-year MS programs a two-year MBA program designed to appeal to students trained in broad liberal arts undergraduate fields such as languages and political science, and who wished to prepare for a specialized career in administration and management. Since 1979, the MBA in Health Administration has become a major concentration in the Institute. Joint programs with the Albany College of Pharmacy (a five-year BS/MS) and the Albany Law School (a four-year JD/MBA) were launched in the fall of 1978.

Professor Josef Schmee, who joined the faculty part-time in 1971 and full-time the next year, succeeded Thimm as director in 1980 and served until 1986. As teacher and director he reshaped and enlarged the

curriculum, recruited new faculty and foreign students, and served as liaison with the administration and the rest of the College. He rebuilt the IAM offices and classrooms on the third floor of Bailey Hall, to which the Institute had returned in 1972, and worked closely with the Advisory Council to enhance the Institute's effectiveness.

Professor Donald Arnold, who joined the Institute as a professor of accounting in 1982, served as director 1986-88. He developed the accounting program into one of the Institute's three major MBA programs; the others were the Health Systems MBA and the general MBA.

A specialist in labor and medical economics, Professor James Lambrinos came to the Institute in 1979, succeeding Arnold as director in September 1988. He further enlarged the Institute, broadened its programs to meet changing student needs, and substantially improved its budgeting situation.

Professor Martin Strosberg, appointed to the faculty in Health Administration in 1984, successfully promoted national health conferences, wrote and edited books on health care, and stimulated students to concentrate in the important emergent area of health management.

The MBA/Health Services program was first accredited by the Accrediting Commission on Education for Health Services Administration in 1982, and in 1990 it received a five-year accreditation for its outstanding quality. Although there are over two hundred Health Administration programs in the nation, only about forty or forty-five are accredited through ACEHSA; Union's is the smallest of them.

The Accounting program was accredited by New York State in 1982. Because the American Association of Collegiate Schools of Business had only certified business schools, obtaining accreditation of the general MBA program, which was introduced in 1976 and awarded its first twenty-two degrees in 1980, was delayed until 2001.

Special to the Institute has been the ongoing work of its Advisory Council, a group of business and professional leaders who monitor the programs and advise on curriculum and other changes. In its early years, the council met for two days each spring and fall; Professor and Mrs. Schmee gave splendid Friday night dinners for members.

Heads of the council, following Armand Feigenbaum, have included former New York City Labor Commissioner Eric Schmertz and Gloria Markfield. Other members have included Alan Hamilton (Chief Financial Officer and Treasurer of Exxon), Douglas Souter (Asarco Vice President of Human Resources) and locally, Lewis Golub (COO and President of the Golub Corporation). Some of these and other representatives of major corporations, banks and public bod-

ies have also participated as guest speakers in graduate seminars, colloquia and classes. Participation by professional leaders has made the College better known in the business and financial worlds, and at the same time exposed both graduate and undergraduate students to real-world experience of incomparable value.

Although the Institute changed its name to Graduate Management Institute (GMI) on September 1, 1987, its faculty has continued to teach an undergraduate curriculum strengthened by numerous course offerings, such as accounting, statistics, behavioral science, multinational operations, which have come from the Institute. A five-year program leading to a BS in Engineering and an MS in Industrial Administration, introduced in 1969, changed in 1977 to a BS/MBA program.

The graduate management program has been controversial since its inception. Although—or perhaps because—the Poughkeepsie experiment was an immediate success, it seemed to some faculty to threaten the traditional educational posture of a liberal arts college of the 1960s. For several years the resulting tensions produced ambivalent policies toward graduate management education. On the one hand, the College administration permitted the Institute to set up six graduate assistantships and six fellowships as the first step toward the development of a full-time graduate program. On the other hand, even the expansion to Poughkeepsie was made possible only by Provost Theodore Lockwood's tie-breaking vote in the Faculty Council. Although the Institute enrolled more than two hundred students in its various courses and graduated more than thirty each year, the administration and faculty, especially some of the liberal arts faculty, could not easily come to terms with graduate professional education at Union.

One issue was the degree of the Institute's autonomy within the College; some faculty were alarmed by Professor Thimm's 1977 description of it as a "self-administered profit center," and by the fact that the Institute proposed a charter for itself which would have excluded the rest of the faculty from decisions on tenure and educational policy (that charter was never enacted). But to some of the program's supporters, a more fundamental problem seemed to be the aversion of many members of the liberal arts faculty to any association with business (see GRADUATE PROGRAMS).

In retrospect, it is clear that the Advisory Council rescued graduate management education at Union by urging the administration to formally recognize the programs, and by counseling the Institute's faculty to exercise patience and restraint.

After the period covered by this book, all of the Institute's extension programs were terminated (1992–94), and the Institute moved from Bailey Hall to Lamont House in the fall of 1995.

—Joseph Finkelstein

**Graduate Programs.** Although Union has always been primarily an undergraduate college, graduate study, or visions of graduate programs, have been an intermittent part of its history since 1825.

In that year the newly-formed Association of Graduates of Union College proposed to establish "one or more resident Fellowships in Union College...to enable some graduate of Union College to pursue his studies in said College, for the term of three years after he shall have graduated" (see ALUMNI ORGANIZATIONS). The association specifically ruled out pre-professional study. At least four Fellows were appointed (ISAAC JACKSON '25, THOMAS C. REED '26, Leonard Wood '27, and CHESTER AVERILL '28), and three of them later joined the faculty, but nothing is known of the nature of their post-graduate study.

The fellowships were doubtless suggested by President ELIPHALET NOTT, whose plans for the College eventually included a full-fledged graduate program. In 1852/53, the catalogue first announced the imminent beginning of Nott's long-envisioned graduate school. The next year the scheme was spelled out in more detail:

The Graduate's Department will consist of at least five Professors, giving more comprehensive instruction than the College course anywhere permits, in Natural Science, Mathematics and Astronomy, Ancient Philology and Literature, History and Metaphysics; and designed for a three years' course, to secure as thorough and complete scholarship in General Literature and Science as may be attained in any European University. A broader basis is thus laid for some more eminent men in professional life, or for such as design to devote themselves exclusively to Literary and Philosophical pursuits. Science must be attained before it can be diffused, and the practical public can only receive the benefits of its results, when provision has been made for a greater accumulation in our own country.... The Department will be opened by, probably, three Professors, at the beginning of the [next] collegiate year... The intention of the Trustees in these arrangements is... to furnish the opportunity for that advanced study and attainment which the growth of our Nation begins loudly to demand.

Although the Nott Trust Deed, announced at the beginning of 1854, promised to fund a transformation of the College into a university (see NOTT TRUST FUND), several events combined to prevent that development. The catalogue annually promised graduate study for the next year until the announcement appeared for the last time in 1856.

The university vision was not immediately abandoned. At the 1858 Commencement, University of Michigan president Henry Philip Tappan '25, one of the pioneers in the development of modern universities, delivered a long address titled "Difference and Harmony." According to a newspaper report, it concerned "how to connect with Union College a higher course, similar to the universities of Germany."

When Nott suspended his plans for a university, the College began a Department of Analytical Chem-

istry. Though not a graduate department, it was outside the regular undergraduate curriculum, and aimed to give "special students... a complete professional education in Chemistry.... The plan of study depends on the object of the student, his previous knowledge, and the time at his disposal." The program survived until 1894 but never became large.

As the College declined during the decades after Nott's death in 1866, it was barely able to sustain an undergraduate program. Nevertheless, in 1872 president ELIPHALET NOTT POTTER took the initiative in creating UNION UNIVERSITY by bringing the College into a loose affiliation with existing schools of law and medicine, and an observatory, all situated in Albany. The general academic graduate school which would have completed the university never materialized, however, and the constituent professional schools, separately administered, have never in any sense been graduate departments of Union College.

Like many colleges, Union awarded "Master of Arts degrees in course" throughout the nineteenth century. They were not true graduate degrees, but rather were available three years after graduation to almost any alumnus of the College who paid a fee (see DEGREES).

Early in the twentieth century, however, an attempt was apparently made to convert these essentially honorary MA degrees into earned graduate degrees. From 1901 to 1918, the College catalogue offered MA degrees on "evidence of having pursued a definite course of advanced studies during the three years immediately following the attainment of the Bachelor's degree." The work could be done at another college, but Union would still require a thesis and an examination.

Again, nothing is known of the actual work required, nor is it always possible to determine which of the persons receiving MAs during this period had earned them and which were claiming the automatic master's degree they had been promised when they were undergraduates.

From 1895 until 1900, the Civil Engineering department offered a "Civil Engineer" degree, to be awarded on completion of a post-graduate year. It may be that none of the few people who enrolled completed the course.

Trying to strengthen the very weak college he inherited in 1894, president ANDREW VAN VRANKEN RAYMOND '75 began building up the undergraduate Electrical Engineering course to take advantage of the opportunities created by the General Electric Co.'s proximity. In 1901 he proposed that the legislature establish at Union a "State Electrical Laboratory"; neither that nor his envisioned school of public affairs came to anything, but in 1902 the Electrical Engineering department began to offer a master's degree course. A PhD course launched in 1910 produced its first graduate in 1917.

The Civil Engineering department began a master's degree program in 1905. Chemistry and Physics awarded their first master's degrees in 1924 and 1925 respectively, and in 1931 Geology began a master's program that produced four graduates in the next four years.

Florence Buckland (an MIT graduate) entered the Electrical Engineering master's program in 1922, graduating in 1925, the first woman to earn a graduate degree at Union. When two more women applied in 1928, the administration asked the trustees to establish a policy, and the board decided that women could be admitted. In fact, however, the second woman graduated from the program a half-century later, in 1977.

Tuition income from graduate programs fell far short of costs, and in response to the Depression, the College suspended admission to them in 1932, allowing students already enrolled to complete the course.

In 1935, however, the graduate programs reopened, as the College catalogue announced that all of the departments in the science division (Biology, Chemistry, Geology, Mathematics, Physics, and Psychology) would offer MS degrees. The degrees awarded were undifferentiated, but most were doubtless still in Chemistry and Physics. In a foreword to the graduate studies bulletin, President Dixon Ryan Fox set out his rationale for graduate work at Union:

It would be absurd for a small college to pretend that it can offer the same kind of opportunities in this respect as a great university.... Its entrance or persistence in this field must be justified by demonstrating that it has certain opportunities, worthy of alternative consideration, which the great university does not offer.

The able, mature and experienced college teacher is usually a man of scholarly interests and properly devotes a part of his time to definite scholarly enterprises, thus advancing his own power and contribution as well as those of his college. Two or three young bachelors working with him for a year in his study or his laboratory will acquire a training as intimate and practical as that of a medieval apprentice in his master's workshop or studio. With a subordinate project of his own in which under personal guidance each learns the primary technique of investigation, and broadened by a few advanced courses in which he encounters other teaching personalities and competes with the best undergraduates he rounds out a preparation which under careful test may well entitle him to the master's degree.

The extent to which Union's graduate instruction approximated Fox's vision depended on the instructors, but it was true that classes were quite small, and that they were nearly always taught by regular faculty members.

On the eve of the Second World War, the College was conducting master's programs in Chemistry, Physics, Psychology and Geology. All were suspended during the war.

The Electrical Engineering master's program, suspended with the others in 1932, did not reopen in

1935. Professor ERNST BERG, who had earlier overseen the department's graduate programs, and had held them to high standards, apparently opposed their resumption. The reason is not clear; he did not get along well with President Fox, but Fox was also unenthusiastic about reviving the Electrical Engineering master's program (bringing back the PhD program was apparently not considered). The engineering program differed from the science master's programs in serving more directly the needs of industry, and in being potentially much larger; Fox may well have had difficulty envisioning it in terms of medieval apprenticeship.

Nevertheless, others on the engineering faculty pressed for the resumption of graduate work, and in 1939 Fox proposed to RPI's president that the two schools jointly operate an Electrical Engineering graduate program with some courses in Schenectady. RPI replied that the program should be given by one school or the other; the market was too small for both, and it was willing to yield to Union.

At war's end both Fox and Berg were dead and the College announced in 1945 that Master of Science programs would be offered in Chemistry, Mathematics, Physics and Electrical Engineering. Biology and Psychology were added a little later, and graduate courses in Mechanical Engineering were offered by 1949. A Civil Engineering master's program began in 1967 and developed a special emphasis on transportation, but it closed about a decade later.

With the revival of the graduate programs in 1945, the Board of Trustees' executive committee again considered the question of admitting women to extension programs, and ruled that they might take evening graduate courses, but not enter the evening undergraduate degree programs. In 1948, the board agreed to admit women to daytime graduate work.

**Teacher Education.** When New York State began after the Second World War to require a fifth year of college work for a teaching certificate, Union expanded its undergraduate Education major into a Master of Education program (see EDUCATIONAL STUDIES PROGRAM); between 1949 and 1967, it conferred thirty-two degrees. In response to a 1952 request from Harry Linton, Schenectady Superintendent of Schools, the College made the ME degree program part of a larger Teacher Education Program, which also enrolled employed teachers who needed some graduate courses for certification, but did not want to take a master's degree.

Under a program originally sponsored by the National Science Foundation, in 1959/60 the College first offered a Master of Science in Teaching Degree (soon changed to Master of Science for Teachers). The Master of Education program was open to elementary and secondary school teachers, while the MS in Teaching program was for secondary and junior high school teachers teaching a full course in science or mathematics.

At the beginning of 1960/61, forty-five students were registered in the Master of Education program and fifty-eight in the MS in Teaching Program. Not long after the professor in charge retired, the College closed the ME program, admitting no new students after 1962/63.

A new Educational Studies program, encompassing an undergraduate degree, a Master of Arts in Teaching degree, and the MS for Teachers degree, began in 1988.

In 1963, the College launched a graduate program in AMERICAN STUDIES leading to an MA degree; never strong, it closed in 1974.

**A Watershed for Graduate Study.** In 1960/61, the College offered master's degrees in Electrical and Mechanical Engineering, Physics, Mathematics, and Chemistry. Biology, Geology and Psychology no longer offered graduate degrees. Nearly all courses were given in the evening, and about three-quarters of the students were General Electric employees.

Until the administration of President HAROLD MARTIN (1965-74), graduate work was regarded as peripheral to the College. Many professors welcomed the opportunity to augment their incomes by teaching graduate courses, but at the very beginning of the Martin administration, yielding to strong pressure from the Middle States Association and from the New York State Education Department, the College changed its policy to require that all faculty teaching graduate courses incorporate them into their regular teaching loads. Although this change was soon reversed, and some graduate courses continued to be taught as overloads through the end of the period covered by this book, it helped force an examination of graduate study's role at the College.

More important, Martin raised fundamental questions of Union's identity, and his tentative answer was that to ensure a place for itself, the College needed to develop strength in a limited range of graduate study, whenever possible staking out new ground.

He believed that the day when Union might have developed a full-fledged graduate school had long passed. Now only very selective development was feasible, and the administration laid down guidelines, approved (65 to 2, with 15 abstentions) by the faculty February 29, 1968:

- 1) Programs shall reinforce Union's basic commitment to the undergraduate curricula.
- 2) Programs shall be interdisciplinary.
- 3) Research and a written thesis or its equivalent shall be required for an advance degree.

The administration also insisted that new programs should lead to a doctorate and should be primarily full-time, day programs. New graduate work entirely with-

in a department would be unacceptable, but existing graduate courses for part-time evening students would continue as long as demand warranted.

Most of the subsequent development of graduate programs came about through the expansion of the Industrial Administration program (see GRADUATE MANAGEMENT INSTITUTE). Begun as an undergraduate program, Industrial Administration gained trustee approval in 1961 to offer a Master of Industrial Administration degree, and first awarded that degree in 1964. Most students at that time were Schenectady General Electric employees attending courses part-time. Under the Martin administration, the Institute of Industrial Administration opened "extension centers" in Poughkeepsie, New York and Pittsfield, Massachusetts, convenient to employees of IBM and Pittsfield General Electric, respectively. In 1966 it launched a new MS program in Operations Research. MS degrees in Applied Statistics and Health Systems Management were later added.

Two PhD programs followed in the fall of 1969. Both "Administrative and Engineering Systems," and "Life Sciences and Systems" were to be cross-disciplinary programs, the former sponsored primarily by the Institute of Administration and Management (as Industrial Administration was now called) and the latter by the Biology Department.

At the same time, the College began to offer a five-year program leading to both a BS in Engineering and an MS in Industrial Administration (the second degree was changed in 1977 to an MBA). In 1971, the Institute established a Health Studies Center, which in 1979 developed an MBA program in Health Systems Management.

Separate from the IAM, Vassar College decided in 1971 to set up a Mid-Hudson Graduate Institute, wherein Vassar, with initial assistance from Union and RPI, would offer graduate studies in science and engineering. Vietnam-era student protests and inadequate computer facilities and laboratories quickly doomed the enterprise.

The Physics MS program ceased admitting new students in 1972, leaving only Chemistry and Biology among the traditional science programs (Biology had revived its master's program with the introduction of the Life Sciences and Systems PhD). In 1971, however, the College started a Master of Science in Computer Science course which quickly became the largest master's program outside the IAM.

Martin's successor, President THOMAS BONNER (1974-78), was clearly interested in expanding Union's graduate programs, but his administration, wracked with controversy on other issues, never made much headway in that area.

During Bonner's administration, in the fall of 1976 the Institute added to its one-year MS program (intended for technical managers), a two-year MBA pro-

gram designed to prepare students for careers in business, government, education and research. In the fall of 1978, the Institute began to offer a joint MBA/JD degree with the Albany Law School and a joint MS in Health Systems Management/BS in Pharmacy degree with the Albany College of Pharmacy. The Institute opened another extension in Kingston, New York, in 1983, and added an MBA in Accounting in 1984. It changed its name to Graduate Management Institute in 1987. Alongside this expansion, there was some contraction: the Life Science and Systems PhD program ceased to admit new candidates in the spring of 1983; at that time it had graduated only four persons.

At the end of the period covered by this book, the College's long-standing MS programs in Mechanical and Electrical Engineering were producing about twenty degrees annually. Almost all of the other master's degrees were in Computer Science (thirty-three in 1990), the MS for Teachers (six), the MA in Teaching (six), and the Graduate Management Institute (forty-two MBAs and fifteen MS degrees).

In the early 1990s, the College phased out all three of the GMI's off-campus branches.

**Reservations about Graduate Work.** In twentieth-century curricular debates, critics concerned about the proliferation of specialized courses often warned that graduate work was creeping into the undergraduate curriculum. When the board adopted an austerity budget in 1899, it recommended dropping "all courses of studies which may reasonably be regarded as within the sphere of the university rather than of the college." Three decades later, reorganization of the College into divisions and the accompanying curricular reform was billed as reducing the number of "overlapping and duplicate courses as well as those which belong in graduate work." Similar concern was later expressed about some of the new courses and seminars developed in the Comprehensive Education curriculum.

There is no record of outspoken opposition to the early development of actual graduate work at the College, probably because it was understood that Union was being "saved" by its engineering departments. Moreover, while undergraduates frequently had to be recruited and then too often seemed unmotivated to learn, the local employees of General Electric and others were almost begging for an opportunity to undertake graduate study; it would have been hard for most teachers to resist the opportunity.

By the 1960s, however, much had changed. The humanities and social science divisions felt that they now had an equal right to influence the College's future course and they feared a return to the earlier decades in which they were a beleaguered minority.

The issue of increasing Union's commitment to graduate study came to a head on three major occasions, each of them connected to the IAM. On May

13, 1965, after long discussion, the Faculty Council endorsed (9-7) the proposed expansion of the program to Poughkeepsie.

When the proposed PhD program in Industrial and Administrative Systems came up for approval in 1969, the Faculty Council, under strong administrative pressure to act quickly, passed it by a vote of eight to four, with one abstention. Reports by the divisional representatives, however, suggested that most of the faculty in the first three divisions were opposed or ambivalent, either because they were reluctant to approve PhD work in general, or because they questioned the intellectual substance of the programs. Proponents noted that some opposition probably stemmed from an academic bias against anything connected with business, while opponents were convinced that the program would indeed compromise the institution's commitment to the liberal arts.

Much concern centered on the danger that increased graduate work could damage the undergraduate program by starving it of funding, administrative attention, and the time of the best teachers. The administration's position, however, was that graduate work could actually benefit the undergraduate program in various ways: the opportunity to teach some graduate courses would attract faculty who tended to stay abreast of their fields, the presence of the occasional graduate student in undergraduate courses would be stimulating, and superior undergraduates would sometimes be able to enroll in a graduate course.

Another factor underlying opposition to IAM may have been the circumstance that, while the size of the undergraduate college was fixed by the trustees, there were no obvious limits to the continued rapid growth of the vigorously directed Institute, with its non-resident students and far-flung extension centers; the College might come to be seen by the public, and might even begin to see itself, as a primarily technical institution. The administration's position was that this could be prevented by strengthening the College's reputation in the liberal arts.

A third conflict arose in 1977/87 when the Institute, whose director described it as "a self-administered profit center," proposed its own charter. It would, *inter alia*, have placed such basic academic matters as tenure decisions and the approval of new courses in the hands of a new committee on which no regular faculty members would sit. Some of the faculty objected to this change, and to the fact that the faculty was not consulted about it. In the deepening crisis of the Bonner administration, the Board of Trustees never endorsed the proposed charter.

The College's graduate programs were also examined critically by MIDDLE STATES ASSOCIATION OF COLLEGES AND SCHOOLS accreditation teams in 1969 and 1980, and by a "self-study" committee in preparation for the 1980 visit. The team's 1969 report ques-

tioned Union's recent decision to launch two doctoral programs, wondering whether the College was not exacerbating the difuseness from which it had suffered in the past, and whether quality doctoral programs could be financed without harm to the undergraduate programs.

A decade later, the College's self-study committee looked at graduate study more thoroughly and found several discrepancies between the institution's announced intentions and the reality of the programs, in particular the doctoral programs. Although billed as interdisciplinary, the Life Science and Systems and the Administrative and Engineering Systems programs had, in the committee's judgement, stimulated very little interdisciplinary research. The committee also pointed out that the small size of the programs made it difficult to mount a specifically doctoral curriculum, with the result that much of the course work was at a lower level.

The accreditation team's report expressed a general wariness concerning the doctoral programs, but made no specific criticisms except for the semi-detached status of the IAM:

the historic separation of the Institute, and its operation as a self-contained center, clearly presents an institutional problem. The role and relationship of the Institute in the College is not clear, nor is it possible to determine readily how it is expected to relate to the over-all mission of the College.

**Administration.** A faculty committee on Graduate Study oversaw the programs from at least 1931/32. The committee had jurisdiction over new course proposals and questions of the standing of graduate students.

A separate superstructure eventually became necessary to deal with scheduling, registration, etc. Since many graduate courses, like undergraduate extension courses, were given in the late afternoon or evening, their administration has long been combined with that of the EVENING DIVISION. Full-time directors have been Director of Special Programs John R. Haines (1962-64), Assistant Dean for Special Programs William Weifenbach (1964-75), and Deans of Graduate and Continuing Studies Aaron Feinsot (1976-85) and Arnold E.S. Gussin (1985-)

From 1959 until 1963, for pro-forma reasons explained in the article on Union University, the graduate programs of both the Albany Medical College and Union College were placed under the nominal direction of Dr. Myron Weaver, as "Dean of the Union University Graduate School."

**Graves, Clare Wray** (Dec. 21, 1914-Jan. 3, 1986). Class of 1940. Professor of Psychology, 1948-78.

A native of New Richmond, Indiana, Clare Graves entered the University of Michigan in 1933 on an ath-

letic scholarship. Following a football injury, he left for two years, returned, and then transferred to Union College in 1937. Graduating in 1940 as a Science Division major, he studied at Western Reserve University under Calvin Hall, a major psychologist of the time, earning an MA in 1943 and a PhD in 1945. He remained at Western Reserve as a professor of psychology until 1948. While in Cleveland he also worked as a criminal psychologist in the Cuyahoga City Court, 1942–44, and as a technical associate at the Personnel Research Institute, 1944–46. His marriage to the former Marian Huff produced a son and a daughter.

In 1948 he returned to Union, where he became a well-known campus figure for two reasons: he was generally recognized as one of the College's most exciting classroom performers, and he developed a theory of personality structure which elicited a great deal of interest and debate.

A direct and forceful speaker, Graves brought great conviction and excitement to the classroom. Part of this sprang from the universal interest in his subject matter, human personality, and part from his enthusiasm for the theoretical structure that he began putting together about 1952. His system became global as the years went by, and students found a good deal of merit in it. Its general scope is reflected in the title of some of his papers: "The level theory of personality," "The levels of human existence," and "Human nature prepares for a momentous leap" (1974). He was especially proud of his 1966 *Harvard Business Review* article, "Deterioration of work standards," which attempted to adapt his system to the affairs of the work place.

That article attracted wide attention, which was reflected in articles about Graves in newspapers and popular magazines. Canada's leading general magazine, *McLean's*, featured an article in October 1967 which began

Every once in a while, a theory comes along that explains EVERYTHING. Darwin invented one. So did Karl Marx. So did Freud and so, of course, did our own Marshall McLuhan. And now meet Clare Graves, a U.S. college professor who's devised a theory that explains why China is belligerent, why hippies act so cool, and why you're not getting along with your boss or your mate.

As a result, Graves found himself in demand for newspaper and radio interviews and television appearances in the U.S. and Canada, speeches at business conventions and lectures at colleges. He complained of having to fly back to Schenectady to teach his class and then immediately leave to keep another commitment. Appointed to a panel charged with developing a plan for the former National Training School in Washington, D.C., he made news in 1967 by proposing to use the school to create a three hundred-acre "black power enclave" in the city.

The *Harvard Business Review* article eventually drew more than thirty thousand orders for reprints, but the most available exposition of Graves' thinking is his 1970 *Journal of Humanistic Psychology* article, "Levels of existence: an open system theory of values." In broad terms, he posited seven levels or stages through which the individual may grow in striving for maturity. He also assumed that societies move through these same levels, different societies to different levels. The Graves system found its most complete expression in a book manuscript entitled at one time, *Up the existential staircase*. Although major publishers were interested, the book never appeared, apparently because Graves consistently refused to accept any of the emendations suggested by editors. When he died in 1986, his life's work had found little acceptance among his faculty colleagues. It is said, however, that his theory continues to find broad application in corporate and governmental affairs. Organizations applying his work are reported to include such diverse groups as IBM and the US Postal Service.

Professor Graves' imprint on the College stemmed not only from the intellectual excitement he created (a 1951 *Idol* profile said, "His ideas make people squirm"), but also from his easy camaraderie with students and his remarkable skill in advising them about their vocational goals and personal problems. Long before Union appointed a "Counselor to Students," his advice was widely sought and respected. A member of the College golf team as an undergraduate, he coached it for many years after 1949.

In a 1973 letter to the *Concordiensis*, Graves attacked the methods Union had adopted to evaluate faculty and administrators, which he condemned as "zero sum games" borrowed from business and industry by people who "seem unaware that they are being discarded by those institutions." He denounced the "foolish criteria" of the *Linebacker*, with whose attempts to evaluate faculty he would not cooperate, but he saw no hope of immediate improvement: "Unfortunately, I believe, from my knowledge of the psychological development of man, that we must pass through a rational-economic approach to the management of Union College because we are just maturing out of the benevolently autocratic form. Oh, how I wish it were not so, but it is.... We have to learn that the way to a productive, viable organization is not to be gained by pitting one against another in the arena of zero-sum games."

Troubled by poor health, Graves gave up classroom teaching in 1978 to work on his book. Although he died in 1986, people still call the College seeking a complete account of his thinking, and the unhappy answer is that much of his systematic endeavors died with him.

—C. William Huntley\*



**Green, James Sproat V** (March 16, 1894–1970). Professor of English and Art History, 1924–1939.

A native of Elizabeth, New Jersey, one of six children of James Sprout Green IV, a prominent physician, and Mary Fisher Green, James Green was descended from Yale's first president and from Princeton's eighth president.

After attending the Pawling School and Princeton University (AB 1916; MA in English 1917), he enlisted in the Army, spending two years in France. His service at the front may have contributed to his later deafness.

On his discharge, Green taught freshman English at Columbia University, 1919/20, then enrolled at Clare College, Cambridge, from which he earned an MLitt degree after three years. President Richmond brought him to Union to teach public speaking in 1924; after one year he was switched to English, and in 1927 he was asked to create Union's first course since the 1880s in the history of art.

John C. Davis '37, his student and later his friend, described Green in his book *The ordered web*:

Even in 1933 James Green gave an impression of austere aloofness. Tall, with the dark moustache, popular in the 1930s, of an international but chiefly British style, a slightly elevated voice that quite precisely articulated his aristocratic English, he was unlike my other professors—nice pedestrian types for the most part. He was a gentleman who bent to other people because they interested him, because their intellectual concerns matched his, and above all because their manners and attitudes separated them from the run-of-the-mill students and faculty who saw the college only as a passport to financial advancement and security. Both physically and intellectually, he looked down on the faculty world that clawed, gestated, and hibernated around him, and while students, whom he often invited to dinner as a regular, attractive part of his academic interests, were exempted for the most part from his strictures, the faculty were not, and the now-unfamiliar word *parvenu* was launched as the final ban of excommunication against officious, though learned, but boorish colleagues. They were not aware of such a ban and simply considered Jim snobbish and peculiar, both of which were true whether or not one considers the adjectives pejorative.

Elsewhere, Davis recalled Green as a teacher:

[W]hen I first knew him as my freshman English instructor, he was 39, dedicated to his work, especially the now solidly based History of Art course, for which I was later to be the slide operator. He was, however, beginning to be afflicted with deafness in both ears, a handicap that made him shun large group contacts, and limit his contacts to the personal one of student dinners at his home with faculty members like Herrick, Carroll, and Zabuesnic, congenial guests.

His deafness also made him seem more aloof, snobbish, and [as] we would say today[,] less of a team player.

His time in Cambridge had left him with a dislike for the English as a nation, and, in Davis's words, "as many others of his war generation [he felt]... betrayed by the propaganda and politicians, among whom he

numbered his father's old Princeton friend Woodrow Wilson. He never ceased being critical of British policies and their American supporters."

In 1933, returning from two months in Germany, Green found much to admire in Adolf Hitler, in National Socialism, and in Italy's Fascist regime. The Schenectady *Union-Star* reported his view that "stories reaching America of Nazi persecution of the Jews are greatly exaggerated." He defended the Jewish exclusionary laws, claiming that "the Jews in Germany thrived upon the misfortunes of the nation." Rabbi Jesse Ross of Schenectady's Temple Gates of Heaven disputed Green's facts and rebutted his arguments, and Professor HARRISON COFFIN soon afterward delivered a speech at the temple, "The race racket"—probably to disassociate Union from Green's position—but Green subsequently delivered at least one address on "Jews and Germany." Writing to Frank Bailey in 1940, Charles Waldron reported that, to the best of his knowledge, Green had been the only Union faculty member to have "approved openly of Hitler."

In 1939, having been made financially independent by an inheritance from his parents, Green retired from Union to an apartment in New York City, announcing his intention to complete a textbook on the history of art he had begun several years earlier; it was never published. He later moved to the more congenial atmosphere of Princeton.

**Grover, Frederick Warren** (Sept. 3, 1876–Jan. 30, 1973). Professor of Electrical Engineering, 1920–46.

Born in Lynn, Massachusetts, one of seven children of Charles Shreve Grover, a Nova-Scotia-born bookkeeper, and Mary Otherman Rogers Grover, Frederick Grover graduated from MIT in 1899. He taught for two years at Wesleyan while earning an MS there (1901), and another year at Lafayette (1901/2). In 1901 he married Bessie Warren Tebbetts; they had no children.

Grover joined the staff of the National Bureau of Standards as a lab assistant in 1902, advancing to the position of physicist in 1904. While there he earned a PhD at George Washington University (1907); he acquired a second doctorate from the Ludwig-Maximilian University in Munich the following year.

During his eight years with the bureau his most notable work centered on the calculation of the self- and mutual inductance of coils. He followed several papers on this subject with a definitive book, *Inductance calculations; working formulas and tables* (1946; reprinted 1962, 1973, 1981). He also contributed to *Radio instruments and measurements* (1917) and co-authored *Principles underlying radio communication* for the Signal Corps (1918). Although he left in 1911 to chair the Colby College physics department, he remained a consultant to the bureau until 1938.

Grover came to Union at ERNST BERG'S invitation in 1920 and remained until retiring in 1946; he served past normal retirement age because the war years placed a heavy burden on the engineering faculty. He chaired the department in 1941/42.

Tall and thin, at least six feet, four inches tall and probably weighing about 160 pounds, Grover was a very quiet man, even bashful. Students dubbed him "Pussyfoot" Grover.

When he arrived at Union he was placed in charge of the electrical engineering laboratories. Very adept at laboratory work, he concentrated on measurement techniques and published thirty papers in that field. While Berg supervised the eight electrical engineering doctoral theses submitted to the College, Grover helped most of the candidates implement their research. One of his students, Sylvester Haefner, credits Grover with helping him design and build the instruments needed for his dissertation.

Tom Hoffman, a student in the early forties, recalled:

I remember two things about Fred. First, while lecturing he always looked out the window... never at the students. Second, he gave long essay-type exams. When you got one back... twelve pages or so... there would be no mark on it anywhere except an '86' or a '92' or something at the top of page 1. His standards were truly inscrutable.

Grover had been interested in astronomy since at least 1899, when he served as a volunteer observer at the Harvard Observatory. He published a paper, "Poetry and astronomy" (1937) and in the same year brought out *Pageant of the heavens*, a book for amateur astronomers. Elected a trustee of the Dudley Observatory in 1944, he served for the rest of his life. After his wife's death in 1959, he travelled on at least three occasions to the southern hemisphere to observe the southern skies.

In retirement, Grover continued to publish technical papers and also busied himself writing about the department's history. His "Notes on the History of the E.E. Department of Union College," written in 1951, is reprinted in E.J. Craig's *EE at Union* (1994).

—Edward J. Craig

**Gymnasiums.** The college has had four gymnasiums:

- 1) An open-air set of gymnastic equipment was installed between North and South Colleges in 1827. The remarks of President Eliphalet Nott Potter at the cornerstone-laying ceremonies for Old Gym in 1874 contain most of what is now known about this equipment:

Soon after [the disbanding of the cadet corps], a foreigner by the name of Torrey procured for and brought to the college quite an amount of gymnastic apparatus, which was set up in the valley which then separated the college buildings, and became the teacher of gymnastics. For some reason, perhaps for want of a suitable building, the apparatus fell

into disuse, and when Prof. Foster entered college [in 1834] nothing remained of Torrey's collection, and he only remembers that there was a tradition that President Nott had caused the apparatus to be removed on account of some injury which had happened to one of the students.

Another source gives the foreigner's name as Taube. He has not been further identified under either name.

- 2) Another outdoor gymnasium, equally obscure, was apparently installed around the fall of 1860 in the "grove" of trees opposite the Psi Upsilon house. By 1869, the *Union College Magazine* complained, it was falling apart:

It is earnestly hoped that as soon as spring opens, the gymnasium in the grove will be thoroughly repaired and new apparatus added. In its present dilapidated condition it is a reproach to the college. The frames, besides being weakened by age and decay, have lost some of their braces. They are old. They are unfit for use. They are unsafe. Other colleges have spacious halls.

Not long afterward, some members of the Class of 1873, agitating for a "spacious hall," destroyed what remained of this equipment.

- 3) "Old Gym," the first indoor gymnasium, was erected in 1874 (see BECKER HALL).
- 4) ALUMNI GYMNASIUM was erected in 1914 and greatly expanded in 1987.

**H.E.L.P. Program.** In the aftermath of the Second World War, many returning veterans, fresh from the discovery of how poorly other countries understood America, found the College also lamentably parochial. One veteran, Chi Psi president Charles F. Stewart '49, whose fraternity was already providing free room and board for a foreign student, took the initiative, with the support of College chaplain Victor Brown, in setting up a program to bring several foreign students each year to Union.

The H.E.L.P. ("Higher Education for Lasting Peace") program, modelled after a similar program at Bowdoin, began in the fall of 1948 with seven students to whom the College awarded one-year scholarships while seven fraternities provided them with free room and board. Other fraternities later joined the program as one hundred and four students from twenty-five countries came to Union under the program during its first decade. The Institute of International Education acted as a clearinghouse in placing the students. Because Union's academic credits would not necessarily be accepted at their own universities, few H.E.L.P. students could remain for more than one year.

In the summer of 1958, as the program finished its first decade, President CARTER DAVIDSON used a Rockefeller Foundation grant to visit many former H.E.L.P. students in Europe, assessing the effect on them of their year at Union.