

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 PhD 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 "Garrie"; 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.