

LEHIGH YEARS—1933-1937

I had fallen in love with Lehigh, especially the campus, when Morton Sultzer drove my mother and me to Bethlehem, Pennsylvania, in the fall of 1932 to see the University and to be interviewed by the Director of Admissions. I did not visit any other university, nor would that have been necessary after I was offered a one-year tuition scholarship by Lehigh, renewable if my grades would merit it. When it came time to leave for college, I received a wristwatch, a typewriter, some new clothing, and an array of advice. My parents asked me not to smoke and not to drink alcohol, and I promised to follow their wishes. I received practical advice from my two uncles and two cousins who had gone to college, although I felt confident that I would be able to make all the necessary decisions on my own as I became acquainted with my new circumstances. My parents suggested that I keep an expense account monthly so that I (and they) could follow how my finances were holding out. I later found some of those freshman expense accounts among my mother's keepsakes and was amused by the listings that included, for example, one cent for crossing the toll bridge over the Lehigh River. Was it included to show my seriousness about keeping track of expenses or was it my attempt at being humorous?

Freshman orientation week had a number of purposes, including the taking of placement examinations, allowing us time to find lodging, acquainting us with the fraternities on and off the campus, and frightening us about venereal disease. The industrial Lehigh Valley had had a bad reputation for houses of prostitution; accordingly, Lehigh sought to protect its all-male students from association with the sex industry. The descriptions and the slide illustrations of the ravages of gonorrhea and syphilis were sufficiently graphic to make some of the viewers faint. I didn't, but I was impressed by my innocence of some of the dangers of life, especially in the Lehigh Valley. I found lodging in a rooming house only a few blocks from campus where room and board together amounted to \$35.00 per week. The accommodation was Spartan but the food was plentiful. I agreed to join one of the fraternities after my freshman year or when I had enough money to pay for the initiation fee. I was not a very good catch. I held strongly to my independence.

What was different in college from the high school experience? One took notes as the professor lectured and then outlined the material so as to make it digestible and reproducible. Reading assignments were to be taken seriously—both in the textbooks and in related sources. Whole books were to be digested. Essays and reports were to be written and submitted on time. Quizzes and exams were frequent. Questions were expected by the professor and discussion was encouraged. The most important lesson I learned was to keep pace, even to anticipate by reading ahead; otherwise, it was possible to be overwhelmed. I had entered the curriculum of Chemical Engineering, but the freshman courses were in basic science and liberal arts subjects. An additional required course was chapel at 7:30 in the morning. It consisted of readings in moral and religious philosophy by Dr. Beardslee. Unlike most of the students, I enjoyed those early mornings in beautiful Packer Chapel; nevertheless, the grade in chapel, which depended only upon the number of mornings attended, was not counted in one's academic average. Accordingly, I ceased attending when the grade became respectable. In a voluntary course called "Brown and White" after the weekly Lehigh newspaper, I was assigned to do chores for the business editor, but I was a misfit and received a grade of C, which was a blemish on my record, not to be repeated.

Because soccer had been my favorite recreational sport in junior high school and high school, I went out for Lehigh's freshman team. J. Harry Carpenter, who was the coach, concentrated on fundamentals and physical training. My chief remembrance of those intense, late afternoon sessions was that they ended with a cold shower. There was no hot water in the stadium on the other side of town where we practiced. At the end of the season, we had contests to see what we had learned or mastered. I won a medal for heading the ball. However, that was not my real ability. At the position of right-wing, I learned to corner kick so that the ball would land just in front of the goal. Also, at the end of the season, when we played a team of sophomores, I had the thrill of kicking the winning goal. By tradition, if a freshman team beat any sophomore team, the Lehigh frosh would no longer have to wear required "dinks" on the campus. A "dink" was a small, brown peaked hat that was required to be worn by freshmen for one year unless the outcome of an interclass contest decreed otherwise. After the soccer match, we freshmen were no longer victims of discrimination. In the spring of 1934, I was an assistant manager of freshman baseball, which helped to keep me in good physical shape and which gave me a new cadre of friends who were, it must be admitted, occasionally impatient with me.

It was necessary for me to earn some money, and several possibilities appeared: tutoring, selling programs at football games, substitute waiting

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on tables on weekends at several fraternities, and, in due course, WPA (Work Progress Administration, USA) assignments in the Chemistry Department. I also received hourly pay for assisting at registration time each semester. I was not paid for singing (alto) in the choir of the Pro-Cathedral Church of the Nativity. The singing, along with that in the Glee Club (tenor for the first two years) is covered in another chapter. Friday night choir rehearsals, with bowling afterwards, and Sunday morning services gave a certain rhythm to each week. Initially, I could not afford any Saturday night entertainment, so I provided my own peculiar diversion—watching trains. There were four railroads with termini in Bethlehem: Lehigh Valley, New Jersey Central, Lehigh and New England (a freight line) and an interurban that ran to Philadelphia. These made the comings and goings, the backing and fillings, the changing of engines, and the snorting, huffing, and puffing practically continuous. I learned the schedules and reveled in the activity while I admired the rolling stock. My presence in the terminals was at first suspect, but then I found conversation possible with some of the Saturday night crews. I could not feel sorry for myself for not attending a movie. I was in my own railroad heaven. I was given an occasional meal at the home of Carl and Emma Jordan, who lived in Bethlehem. Carl, who was my mother's second cousin, had an office position at Bethlehem Steel Company. Their neighbors, the McClintocks, were somewhat more interesting because they had a daughter, Margaret, a freshman at Moravian Seminary, who became a friend, but it took some inventiveness for me to arrange "dates" that did not require much expenditure or transportation other than trolley cars and buses. In retrospect, I realize that she was a very good sport.

My finances stretched to the end of the freshman year. Trips home to Mount Vernon at Thanksgiving, Christmas, and Easter were made by the cheapest means possible—by rail, bus (Golden Arrow Lines), a ride with a friend's parents, or hitchhiking. For part of the summer, I worked as an office boy in an insurance company in Mount Vernon. My full tuition scholarship was renewed for the sophomore year, and I received notice of the award of the Wilbur Second Prize in Mathematics, which was monetary. During the sophomore year, I had a full-time job waiting on tables at my fraternity house, with the result that I was no longer a boarder in the town quarters. I shared a room there with Dick Lake and Bill Dukek, both fraternity brothers, and we became the best of friends despite the limited space available for our study and sleeping on the third floor of the house. The fraternity became impatient with me for not becoming a bona fide member. Andy Buchanan, the Director of Admissions and also an adviser to the social fraternity, heard of the disputation and loaned me the \$75

initiation fee, which I repaid—to his surprise—at graduation. I passed through the informal initiation, then called “Hell Week”, satisfactorily but quite sleeplessly. I felt that the fraternity had to raise its academic standing, which I aided by offers of tutoring, guided by nomination for membership of underclassmen with good averages, and continued to influence as academic adviser and then Vice President. An enforced quiet time after 8:00 p.m. on weekday nights also helped to establish study habits. I dulled the fraternal atmosphere somewhat by suggesting cooperative repaint-and-repair schemes to replace beer-drinking episodes.

“Mustard and Cheese” was the name of the club that put on plays under the able direction of Al Rights. Upon the urging of my fraternity brothers, I tried out for and obtained a part in “Yellow Jack,” a drama concerned with the digging of the Panama Canal. As for soccer, I remained a varsity substitute during most of the season in the sophomore year, and in the spring, I ran around the track, barely attracting the coach’s notice. The truth was that I was studying very hard, learning to sleep minimum hours and to take quick catnaps between responsibilities. It was my best year academically and I was rewarded with the Chandler Chemistry Prize and the Wilbur Scholarship, the value of which—\$200 cash—provided welcome financial relief. I was urged to run for Class President, in which I was successful, and the title took effect in the junior year, carrying with it some additional memberships and responsibilities. The first weeks of the 1935 summer were occupied by taking a laboratory course in assaying, a pet creation of Professor Alpha Diefenderfer, that was required of all chemists and chemical engineers. It consisted of analysis of everything from gold in ore to butter fat in ice cream. I paid for my board by waiting on tables for the ten or twelve friends who were registered in the course and who lived and were fed in the fraternity house, which benefitted thereby from the additional income. When the course was over, I spent the rest of the summer in an analytical chemistry job in the New Jersey Zinc Company, Palmerton, Pennsylvania, where I had a small room in an apartment over a drugstore and took my breakfast and dinner across the main street in a rooming house. My colleagues at the table were a tough lot of bachelors who worked in the heat of the zinc smelters. The food was plentiful, e.g., cabbage prepared in four different ways was available every night, but conversation was spare. As a college student, I was a new phenomenon and was the butt of much humor. Unspared were my home-taught manners and my “puritanical” attitude concerning drink and women. However, by the end of the summer, I seemed to have converted at least two of my companions, who told me that they were settling down, saving money, and planning to find the right person to marry. When I drove

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through Palmerton in 1987, the old zinc mills had been dismantled, the train bridge across the river was rusted away, and the landscape was barren.

During junior and senior years, I lived in the fraternity house, where study rooms were on the second floor and sleeping dormitories, one “cold” and one “warm”, were on the third floor. The distinction between them was in the number of sides of the dormitory devoted to windows, three or two. I chose “cold.” My study roommate was Ben Chadwick. I paid for my board by waiting on tables. Fraternity living provided more friendships and more social life, and being Junior Class President provided complimentary tickets to such events as the Junior Prom. My participation in soccer improved to the extent that I went on trips to “away” games, but my track performance never did shift into high gear. My voice had settled to a stable bass-baritone range, which gave me the opportunity of singing solos in Glee Club concerts and playing leads in two original musical comedies. In the spring of 1936, I was approached by Philip M. Palmer, who had been my German teacher and was also Dean of the College of Arts and Sciences, and by Neil Carothers, who had been my economics teacher, to suggest that I might be a reasonable candidate for a Rhodes Scholarship at Oxford. The only hitch was that I would have to shift from the Chemical Engineering to the Chemistry Curriculum. No one had ever been successful applying as an engineer. The exciting suggestion was a godsend because I had become disenchanted with chemical engineering. As taught, it seemed too empirical, and I also recognized that I was not very practical. The change in curriculum was to take place in my senior year. Harvey Neville, who taught a comprehensive course in inorganic chemistry, encouraged me to make the change, pointing out that it would lead to more career options following graduate study. I was pleased to recall his advice when, in 1963, as President of Lehigh University, he bestowed on me an honorary doctorate degree.

Joseph Walton, who was captain of the football team, and I were elected as juniors to Omicron Delta Kappa, the senior honorary fraternity that was based upon activities as well as scholarship. Joe and I would become skiing buddies in the late 1970s when he and his wife Louise visited us regularly in Snowmass Village, Colorado. The final required academic experience of the junior year was a four-week summer course on heat engines, given by the Mechanical Engineering Department. It was a terrific course, quite distinct from any other experience I had had. An arrangement similar to that of the previous year was made with the fraternity to feed and house some of the registrants in the course and to include Ben Chadwick, who was taking the assaying course at the same time. For amusement on weekends, we would drive to Hershey, Pennsylvania,

where the big bands of the 1930s played in a large dance hall. Ben and I had summer jobs at the Solvay Process Division of Allied Chemical Company in Syracuse, New York, that were obtained through the influence of his father, who was a New York executive in the company. My job was in analytical chemistry where I substituted for staff members on vacation. Ben's job was much more arduous and physical, for he was part of a crew installing pipe lines. We remained compatible through the summer, and we benefitted socially from contacts provided by his family's friends in town. As a result, some of the non-working hours were passed agreeably in swimming, eating home-cooked meals, playing duplicate bridge, and dancing at the local country club, where I also caddied for Ben. When Ben and his car left for his home in New Jersey, life was somewhat less convenient because I had to walk to Solvay every day, four miles in each direction. Nevertheless, I had saved enough money for expenses in my senior year, and I was in good physical shape when I returned to Lehigh.

In the senior year, I had to make up courses that had not been required in the engineering curriculum but were required for the degree of Bachelor of Science in Chemistry: philosophy, history, English literature, and senior research in chemistry, all of which made my last year thoroughly enjoyable. The famous historian Lawrence P. Gipson taught a course in International Politics that was exciting and contemporary. The set times required for laboratory courses in past years became free time for library work. I obtained the job of attendant in the Browsing Room, where I had access to shelves of current works, and, because of the light traffic, I could read selectively among the books on history, current affairs, and biography. Vahan Babasinian ("Dr. Babs"), who had taught advanced organic chemistry, allowed me to use his private laboratory and special small-scale apparatus for the study of electrophilic substitution on thiophene in comparison with benzene. I was given the chance to play in most of the varsity soccer matches. The fall semester was a prelude to appearing before the Rhodes Scholar selection committees in December, first the state and, upon success at that level, then the regional committee. Both interviews were held in Philadelphia, where I was given hospitality by Bill Dukek's parents. I can still remember some of the questions I was asked in those oral confrontations. Those questions or my partially adequate answers occasionally return to haunt me in dreams. I lost four pounds during those Philadelphia days, but the world had opened up for me! Now, when I attend annual meetings of the American Philosophical Society, I step into the APS building where the final successful interview took place, to remind myself of how much in my life was a result of those memorable days. During the procedure, I was particularly attracted to the

other three successful competitors from the district: James Gardner, Harvey Wellman, and Robert Harmon. Chadbourne Gilpatrick, probably the most interesting of the lot of us, competed again the following year and came up to Oxford in 1938. The four winners were announced at the end of the district-examination day.

During my euphoric final semester, Professor Babasinian encouraged me to write a two-part senior thesis. In the second part, I reviewed the published work of Neville Vincent Sidgwick, Professor of Inorganic Chemistry at Oxford, who was a don of Lincoln College. His comprehensive contributions to the organic chemistry of nitrogen convinced me that I should make Lincoln my preference among the Oxford colleges, where I was fortunately accepted for matriculation. My new status allowed me a somewhat larger voice in the academic and social affairs of the fraternity. Donald and Mirjane Kemmerer became favored



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chaperones at our fraternity dances. Don had been my teaching assistant in economics and would appear in my life again as a professorial colleague at the University of Illinois, where he taught economic history. The Kemmerers offered me exceptional hospitality when I came to Illinois. The Dean of Men, Max McConn, would drop in selectively on fraternity house parties to check whether all the rules were being followed. I suggested that we invite Dean and Mrs. McConn to dinner, when everyone would be on best behavior. They accepted, but they enjoyed themselves so much, they stayed for the entire evening. I received a lot of teasing about that ploy. The Dean was the author of a very amusing book about student life from a Dean's point of view. It was also obvious that he enjoyed being with young people who were willing to chat with him on a frank and cordial basis.

The week of final exams was a lark because of the enlightened Lehigh practice of excusing seniors from final exams in courses if the seniors were satisfied with their cumulative course grades prior to the finals. Since I was well satisfied, I used the time to visit friends and relations. I had to deliver the Ivy Oration and plant some ivy on behalf of the class of 1937. It was not a very original speech. A large family contingent came to the graduation and enjoyed both the social and the formal proceedings. I seem to remember my Aunt Flora saying to someone that she put me through

school (sic). In the lineup for the march into the chapel, I was visiting friends earlier in the alphabet. When I returned to the Ls, my friend Moses Lore, who was just behind me in line, gave me an envelope that an unknown lady had entrusted to him. This long-time Lehigh supporter had written a note of appreciation for my enthusiastic participation, scholarship, and contribution during my four years at Lehigh and had enclosed a check for \$200. That large sum, which almost paid for my ship passage to England in September, was completely unexpected. Her spontaneous act was most poignant. Lehigh University had been the right place for me to be for my undergraduate years—the right size, the right environment, and the right quality level! My Uncle George and Aunt Kate organized a graduation party, a dinner dance, for me at the New York Athletic Club on Long Island Sound for ten of the graduating seniors from the fraternity with their dates. I was not too enthusiastic at first because I had to use up my supply of girlfriends as “blind dates” for those who came alone. The dinner dance was very successful, even though it was alcohol-free. The Athletic Club staff claimed that they had never served any group that had enjoyed themselves so much and were so well behaved.

Morton Sultzer showed his friendship and his influence again by securing a summer job for me at Bell Research Laboratories, then located on West Street in New York City. The commute from home in Mount Vernon involved the sequence: walk—trolley—subway—walk, which took about one hour and fifteen minutes, if the connections worked well, and cost only \$0.20 per day. The work involved the testing of an analytical procedure for dissolved gases on the brass connectors used in telephones and also the translation, from German to English, of selected analytical procedures that were of interest to the Analytical Division. The most exciting experience of the summer was watching the ocean liners arrive and depart. My laboratory afforded a spectacular view of the Hudson River, and I followed the liner movements according to schedules published in the daily newspaper. A fortunate introduction to Professor Sidgwick took place at Bell Labs when he gave a lecture there. He took me to dinner at the Waldorf-Astoria that evening, where we discussed the sequence of events that would occur when I would come up (as the phrase is used) to Oxford in October. I was exhilarated at the prospect and felt immediate respect for Sidgwick’s intellect and humanity.