

ILLINOIS YEARS—1953-1960

Family

This period was bounded by two sabbatical leaves, the second of which was financed by a Guggenheim Foundation Fellowship. The University of Illinois permitted one-half year absence with full pay after six years of service if the sabbatical was officially approved. When we returned from sabbatical leave in 1953, we recognized certain deficiencies in the house that we had bought that February. As soon as possible, we made alterations to provide adequate play space in the basement and in the back yard, as described in the chapter “Where Did We Live?” There was extensive narcissus- and tulip-bulb planting around the redbud tree and in front of the hedges in the front yard. In fact, bulb planting became an annual ritual as long as we lived in the house. Ken and Marcia had separate rooms on the second floor, and James, while still in the crib, slept in the large closet with a window. He was eventually displaced by David in 1954 and graduated to a single bed in Kenneth’s room.

David Anthony

Nell’s pregnancy with David was the easiest one of the four. However, she altered her original notion of having six children and agreed that four would be a fine and sufficient number. His birth on the beautiful sunny morning of June 7, 1954, almost occurred in the car. Leaving Mrs. Rhea Mall in charge of the three, we drove off to the hospital in the Pontiac convertible with the top down. So “holiday” was our mood that I felt in spirit that we were on our way to Michigan, and I drove two blocks past Mercy Hospital before being alerted by a cheery “Where do you think you are going?” We turned back to the hospital, arriving barely in time for the appearance of David. Although all of the others had also been born in Mercy Hospital, Urbana, they had appeared on the 15th of a month, Kenneth in April, Marcia in November, and James in August. It became a

teasing point when they later wanted to pester David with the notion that he was possibly adopted rather than being a regular member of the family. We convinced him, I think, to counter that he was just very special, when he was able to talk back to them. More serious was the fact that David was not released from the hospital until the measles and mumps had run their course through his siblings. Nell went back and forth between hospital and home all the time. The house was well prepared for David when he did come home, and he was welcomed warmly by five pairs of arms, contesting as to who could hug him more. He never seemed to cry. He smiled and stretched a lot, an early gymnast, and he was capable of intense concentration. David was named after David Harris, my best friend in England, and the name Anthony honored two other English friends with surnames Hugill and Parsons (the brother of Rodney). We made the family trip, grandmother Leonard included, to Dunewood when David was six weeks old.

Jim could not go into the water that summer because of a heel that was recovering from a pressure sore. By way of explanation, Jim suffered dehydration as the result of an intestinal flu and required hospitalization and intravenous administration of fluid. His leg was immobilized by a board attached to the bottom of his foot. Unfortunately, the hospital nurse did not loosen the board occasionally, with the result that an open sore had developed by the time Jim had recovered from the flu. Healing from within was eventually induced by the incorporation of granulated sugar in the wound to assist in the aggregation of the cells. It worked, but slowly. I remember that Jim's foot was still bandaged to prevent infection at the beginning of September, 1954. Seated in a small rocking chair, the two-year old helped entertain—by smiling broadly and shaking hands—some professor attendees at the University of Illinois Chemistry Symposium to honor Roger Adams. We had invited a few of them to the house on the afternoon of September 4th, at the termination of the Symposium, and the best place to gather was the shaded, screened-in porch since the outdoor temperature had reached an Urbana-record 108° F. Two swiveling fans and various cool drinks persuaded us that it could not be really as hot as that. James, suitably unattired, presided over the lot like an appreciative host, pleased to receive attention but encouraging the guests to do the talking. He did point out the fans occasionally, "Fan," to the amusement and appreciation of all.

During the 50s, the children grew up in the safety and convenience of Urbana, Illinois. There were tricycles and skates and small bicycles in sequence. The park was nearby for swings and slides, and the backyard was a gathering place for romps and games. The neighborhood was full of children, so friendships developed easily and some have lasted into adult

life. The house was filled with children's books and with stuffed animals that seemed to participate in the daily life of the establishment. We sat down for meals together as much as possible, with David in a high chair next to Nell. Manners were learned, conversation was encouraged, but Dad ate slowly and liked to talk so much that the children frequently asked to leave the table before dessert. Maggie Lou Perry became part of the family when she started doing housework for us regularly. She played a significant role in David's childhood growth and development. Mrs. Mall continued to be a trustworthy and much loved babysitter. When Kenneth and Marcia had graduated to bicycles, they would ride them to Eleanor Blum's house on Saturday mornings, where her mother would supervise their television watching (we did not have a TV set but would rent one whenever a child was ill) and would read to them from classic children's books. Chip Frey, who was born about the same time as Ken, was Kenneth's best friend. Cycling between the Frey and Leonard houses became a standard operation by the time they were in the 5th and 6th grades. Little League attracted Ken, and, to some extent, his father. Ken studied piano for two years and flute for about one year. However, he admits that he never practiced enough and, thus, gave up on a musical avocation. He spent his spare time drawing. Marcia was an avid reader and a listener to her mother's reading, and she took ballet lessons. Jim and Dave were full of boisterous play. Ken started skiing in 1958 and Marcia, in 1959, both in Winter Park, Colorado.



Kenneth, Marcia, James, David, 1958

The general pattern for schooling was a cooperative nursery school, pre-kindergarten play school, Leal School, the Junior High School. Leal School was a short walk from the house, so that rides were necessary only in big rain or big snow. The Urbana public school system was excellent. Nell taught Sunday school in the Congregational Church, which was attended by all of the children in turn. She also became interested in the life of the church sufficiently to play an important role in its organization and governance. The highlights of the children's play were outdoor activities and the basement, complete with bins on rollers (that were filled with toys, animals, or small people), a small slide, and toy trains that were set

up for a month around Christmas. Most notably, there was a summer month in Dunewood each year from 1954 through 1959.

Research

While we were away in 1953, one of my graduate students, Richard C. Fox, was working diligently and effectively at making a series of compounds with medium-to-large rings containing amine and carbonyl functions. Upon our return in September it became clear that our original purpose for making the series was not going to be realized. However, upon re-examination of the data that Dick had accumulated for the series, in particular the infrared spectra, that the nine- and eleven-membered rings were unusual. Their spectra provided evidence for the occurrence of transannular interaction, that is, across-the-ring interaction, between the tertiary amino group and the carbonyl group in these medium-ring compounds. I was lucky to have in the laboratory at the time two postdoctorates who held postwar fellowships provided by the United States Government, Michinori Ōki from Japan and Stefano Chiavarelli from Italy. We went to work immediately to provide evidence for the limitation of the occurrence of transannular nitrogen-carbonyl interaction by ring size, steric interference, environment, and electronic factors. It was a wonderfully exciting research time and very productive. We invited the collaboration of others. While we had at hand spectroscopic means of observation, namely infrared and ultraviolet absorption spectra, we relied upon the cooperation of Dr. Harold Boaz of Eli Lilly and Company for more detailed infrared spectral analysis and for conjugate acid-strength determination, Professor Max T. Rogers of Michigan State University for determination of the dipole moments of representative aminoketones in our series, Professor Carl Djerassi originally of Wayne State University for determination of optical rotatory dispersion of an optically active eight-membered-ring aminoketone wherein the chirality of the alpha-carbon on nitrogen exerts its influence on the opposite carbonyl group, and Professor Theodore L. Brown for the dipole moments of eight-membered-ring compounds involving sulfide or ether with ketone groups.

The other excitement of the productive period that extended from 1953 resulted from our ability to determine spectroscopically the location of double bonds that we could introduce into saturated tertiary amines, producing, for example, cyclic enamines. The thorough study was initiated by Virgil W. Gash and was extended to their salts by Alan S. Hay, who later moved to McGill University after an innovative career at the General

Electric Company in industrial polymer chemistry. It was the salts of enamines, so-called iminium salts, that opened up the next phase of our research, because of the versatility of their reactions that had not been recognized previously. They functioned as ionic equivalents of the carbonyl group and thus were capable of rapid action with nucleophilic reagents. The two areas of research that I have mentioned brought me a number of lecture invitations, and I had to limit my trips out of town for lectures and for consulting visits to Lilly and Monsanto to no more than two per month. During this period, 1953-1960, I served as a member of the Editorial Board and subsequently on the Advisory Board of *Organic Syntheses, Inc.*, also on the Executive Committee and subsequently on the Editorial Board of the *Journal of Organic Chemistry*. In 1954, I was asked to be Head of the Division of Organic Chemistry of the University of Illinois, with responsibility for course teaching assignments and organic faculty space and recruitment, but with no appreciable budget. The main function of the job as I saw it was to maintain the collegial climate among the faculty, which included older members who liked to be consulted individually and younger members who liked regular, open meetings. A real responsibility was to participate in the design of a new chemistry building. That process has several starts and stops until Analytical and Organic Chemistry finally moved into the new structure in 1966. More about that in the next chapter period when construction really went forward, with colleagues Herbert Laitinen, J.C. Martin, and myself participating in the design and following the construction of the building that was eventually dedicated as the Roger Adams Laboratory.

Service to organic chemistry, in the University of Illinois tradition, was initiated in the 1948-1953 period, continued in the 1953-1960 period, and carried on until 2001 to some degree. First, it was as an officer of the Division of Organic Chemistry, American Chemical Society (Secretary, 1949-1954; Chairman-Elect, 1955; Chairman 1956). Then, I was appointed a member of the Committee on Organic Chemistry, Division of Chemistry and Chemical Technology of the National Research Council, 1958-1959, and a member of the Advisory Panel for Chemistry of the National Science Foundation, 1958-1961, which is covered in the chapter on "Service on Granting Foundations and Agencies."