ILLINOIS YEARS—1947-1948

Nell’s Arrival

After the semester ended in January, 1947, followed by a week of skiing in Winter Park, Colorado, I returned to Illinois to make preparations for Nell’s arrival. It was almost inconceivable that the event we had waited and struggled for was actually going to happen. I was in a highly excited state when I made the train journey to New York and on to Mount Vernon to stay overnight with my parents, awaiting February 11. Morton Sultzer, forever a friend, loaned me his car, which I drove somewhat sanely to the 57th Street dock on the Hudson River, where the Stockholm was arriving. Ship departures and arrivals in New York Harbor are always exciting, but this one was exceptional. I was on the dock peering up the gangplank that was emptying passengers onto solid ground, actually timber and asphalt. Actually, only first class passengers! Then, second class passengers. When I spotted Nell at the railing after all the second class passengers had disembarked, she called down that I should come back to the dock in the afternoon. I went to the Russian Tea Room on 57th Street for lunch, happy that I had seen her and reveling in my emotions of the moment. However, staring into my delicious borscht did not tell me why there was a delay in her disembarkation. Nell finally descended the gangplank in the afternoon, possibly the last passenger off the ship, and into my waiting—long-waiting—arms. She had been taking care of someone else. This was part of a life pattern that was to be repeated over and over again. One of her stateroom companions, an elderly lady, had been seasick during the entire passage. She had not left the stateroom and thus needed a total clean-up before she could be seen by some relatives who had come to meet her but were not allowed to board the ship. Nell had volunteered for the job.

Nell’s seven small pieces of luggage were scattered about the dock, but we found them, gathered them together, and, with the help of a porter, passed them through customs and loaded them in the borrowed car. I drove up the West Side Highway, pointing out as many sites as I could while admiring my passenger. At one stage, when we were changing
parkways, Nell asked, "Why are there so many water towers here? That looks like one I have seen before." I had actually been driving around in big circles instead of switching parkways from the interchange. There was only one water tower! Back on track, I was on the way to the modest apartment on South Second Avenue, Mount Vernon, where my parents lived. They had been alerted to the fact that we would be late, which had only increased their excitement and anticipation. Before I had left Mount Vernon to meet Nell, each had one question. My mother's was: "I know I will love her, but does she smoke?" My answer reassured her: "Yes, one cigarette on her birthday each year, but I think we can break her of that habit." My father's question was: "What shall I do when she arrives?" My mother: "Oh, Len, just do what comes naturally." He did not have a chance to think about it. Nell gave him a big hug and a long kiss on the mouth. He was a goner. Nell and my mother had instant rapport, which they maintained as long as my mother lived. Mother had prepared one of her delicious meals, and there was much, much talk, the opening of some gifts for Nell, and then, much needed rest. On the following day, Nell met my aunts and uncles in their Bronxville house, and we sat down to a marvelous meal prepared by my Aunt Flora. We were on track for repairing Nell's lack of adequate nutrition for the past four years. Nell had captivated the rest of the family, and I had become a hero for acquiring such a fine partner (finally). It was a special moment in time.

As soon as we had made the family connections, we were on our way back to Illinois by train through Chicago. Nell was really tired from the ocean voyage, during which she had been seasick, from the excitement of the arrival, from the impact of her new country and new "relatives," and still from the long war years that had left her undernourished, yet unable to consume the generous helpings of food that were offered to her. I realized that the transition was to be gradual if it was going to be lasting. She survived the long train ride and responded happily to the new scenes. However, I must say that planar, central Illinois in mid-February did (does) not offer the most hospitable landscape. The story of how we settled ourselves in Urbana is told in the chapter, "Where did we live."

First Month in Urbana

During the spring semester of 1947, I taught the graduate course in organic synthesis from the carefully organized notes of my senior colleague, Professor R.C. Fuson, and I directed the research of the seniors and graduate students who had joined my growing group. We attended
concerts and watched the University of Illinois baseball team in action. Nell was even content to watch my softball team play after working hours. She became hooked on the sport as a spectator, but later when she participated in mixed games, it turned out that she could really hit the ball. She felt that an appreciation of baseball was essential for becoming an American. Nell eventually adopted the St. Louis Cardinals as her favorite professional team, preferring to follow the play on the radio because it required imagination; moreover, she could knit while she listened. An added consultancy I had with the Monsanto Chemical Company in St. Louis meant that we could make an excursion out of my chemistry visit and could watch a Cardinal game following a good dinner in Busch Stadium.

These were sporting habits that actually developed with time. Back in May 10, 1947, we were married in Bronxville, New York. The occasion has been slipped into the chapter on Singing Career because I had performed just two days before in Chicago, and the two events were necessarily merged and rather tightly organized. The fact that we had returned to Urbana for Mrs. Roger Adams’ tea party the day after our wedding in New York put us in good grace with Urbana’s most demanding hostess. In fact, we helped to enliven the event. We had fortified ourselves after lunch with champagne, and we arrived at the Adams’ impressive house on Michigan Avenue in a joyous mood. I was astonished that the line of people leaving the house reversed direction and rejoined the party as the whisper percolated down the line that Dr. Leonard had gotten married. Nell was warmly greeted but was soon lost to me for a time as people crowded around to inspect her: a composed beauty from the Netherlands who had excellent command of English and stylish manners. I experienced a notching-up in their estimation of me. After our triumphant entry into “society,” Nell and I returned to our little rented house to finish the champagne and to recapitulate the experience.
The rest of the spring semester passed smoothly as we visited more friends and toured the nearby countryside and towns in an old car that had been kindly loaned to us by Don Kemmerer. Summer came early to central Illinois that year, as it usually does. By my teaching two courses during the first part of the summer semester, we could take a delayed honeymoon in August, during which month my colleague Bob Frank took over and finished up both courses. During June and July there was no hint of a pregnancy. Nell was impatient because of her experience in Holland as a "war mother," when she had to give up Daniel Hookstra at three and a half years upon the survival—and return—of his parents from concentration camp. Otherwise, she was settling into her new life in the U.S. with pleasure and continuing anticipation.

Summer Travel

The first stop on our summer travel was a little cottage on the beach of Lake Michigan, in the southwest corner adjacent to a state park. The town of New Buffalo was accessible on the Michigan Central Railroad out of Chicago. The nearby little cottage, which I had visited before and which I had rented this time for a week, was primitive in that one had to pump water, cooking was usually done on a kerosene stove, and there was no indoor toilet. I was introducing Nell to U.S. rural life along with showing her the beauty of Lake Michigan. However, the smell of the stove made her feel sick, so I used the barbecue and the fireplace to do the cooking. We could walk to a food store and small restaurant. Tomato juice became Nell's favorite food during that week. We learned over time, but not immediately, that a craving for tomato juice along with an enhanced sensitivity to unpleasant odors was an early indication of pregnancy. The beauty of Lake Michigan and the contentment of lying on the warm beach in between swims helped to make up for discomforts.

The next stop on our trip was Cambridge, Massachusetts, where we were to stay with my dear friend Elkan Blout and his family. It was possible in those days to board a Pullman car in New Buffalo, Michigan, that would be switched to the New York Central at Detroit and switched again at Albany, New York, to cross through the Berkshires in early daylight and on into Boston. Sorting out the rail connections was part of my enjoyment of our travel—on this leg of the journey in a Pullman drawing room. We saw the sights of Boston and Cambridge, where Elkan and Joan lived close to Harvard University. Elkan was directing organic chemical research at the Polaroid Corporation and arranged for me to present a seminar.
there, for which I received an honorarium that helped with our travel expenses. Nell was experiencing unusual symptoms—beyond the craving for tomato juice—that encouraged Joan to take her to Women's Hospital in Boston for pregnancy tests, the results of which were to be communicated to us at our next stop.

Credit the power of advertising! A picture of the Inn at Smuggler's Notch that had appeared in *The New Yorker*, together with some knowledge of Vermont, caused me to choose the Inn as an ideal honeymoon (three months late) lodge for the next week. The rail journey from Boston took us northwest through White River Junction, NH, where there was a rather long stop while various train connections were made. Nell excused herself from walking the platform with me, while I inspected appreciatively all of the mechanical switching operations. On the platform, I met Dr. John H. Wolfenden. "Of what interest is that to the reader?" you may well ask. I regarded the meeting as a very pleasant omen, even though I do not necessarily believe in omens. John Wolfenden had been a Don at Oxford when I was there and had been a member of the oral examination committee that approved my B.Sc. thesis. We recognized each other immediately although eight years had passed. Dr. Wolfenden had been the much-admired British liaison officer between the defense research councils of the U.S. and Britain during the war and had been hired on the Chemistry Staff of Dartmouth College after the war, which is why I was seeing him on the railroad platform at White River junction. Twenty years after that platform meeting, his son Richard and I met each other. Richard and I had already published a scientific communication together on the basis of converging interests, and we met at a conference shortly after. He said his father still remembered that chance meeting in White River Junction years earlier. Back in 1947, then, we continued by train to Woodbury, VT, where—according to my recollection—a car from the Inn met us, to drive us through Stowe to our destination. It was an ideal mountain lodge, with comfortable rooms, a central lounge with a fireplace, excellent food, and only a few August patrons.

We settled in happily and took advantage of the proximity of the Inn to the chairlift that serviced the ski area on Mt. Mansfield. Beautiful views in beautiful weather and plenty of huckleberries to munch on! We could descend by chairlift or by a road through the woods. As we grew accustomed to the surroundings, we ventured on other hikes, especially along the stream that cascaded over the rocks on its way down to Stowe. Nell engaged in the pursuit of her Dutch ancestors. She arranged and rearranged the course of the water flow, moving stones around so as to create small pools and mini-waterfalls. I found a deeper pool in which to take a cold
NELSON J. LEONARD

dip. But, then, one day, we hiked too far. We found on the map a path that was reputed to be a portion of the Appalachian Trail. Near Smuggler’s Notch, to the north, we found it in reality. That “we” was increased in number to three, because we were joined by a collie to whom I had talked too affectionately as we left the Inn. He was not to be discouraged from joining us, despite my urging him to “go home” in all possible intonations. The problem with the trail, one we had committed ourselves to irrevocably, was that it had not been re-established clearly since the hurricane of 1938 and the passage of the war years, 1940-1945. Unexpected but true.

The dog became so tired and hot going up, over, and under fallen trees that I had to lift him, or at least one end of him, over the logs. Nell and I became equally tired and began to wonder whether we would still be on the trail after daylight. I was beginning to feel apprehensive and, certainly, irresponsible. These feelings pervaded my consciousness as I leaned against a tree that stood at a fork in the trail. Which overgrown path should we take? My hand moved up the trunk of the tree while I contemplated this unalterable decision. My hand came in contact with a long stick that had been nailed, at its top, to the tree. I shifted the stick idly back and forth and noted that when it had been swung to its limit to the right, the tip stopped inside a “lazy V” made of two wood strips nailed to a second tree to the right of the first one. The result was a wooden arrow pointing to the right fork, which we took with some assurance. After a short level stretch, the trail descended rather steeply and steadily until it reached the stream. The dog plunked himself down in its shallow center, faced upstream, and tried to drink the entire flow, submerging himself completely now and then to cool his body. Nell and I took off socks and shoes and stood in the cooling, anesthetizing water. Then, we completed fording the stream and paused to make a decision as to whether we should move upstream or down on the far side. The noise of someone hammering luckily caused us to hack our way through the brush in an upstream direction, which was counterintuitive but nevertheless correct for the way back to our Inn. A house under construction meant a dirt road was handy, and the dirt road led to the highway. When we finally reached the Inn, our adopted dog gave us a few friendly licks and disappeared. A message from Women’s Hospital, Boston, confirmed Nell’s pregnancy. We contemplated the errors of our ways: we had not informed anyone of where we were going; we had not determined the state of the trail we selected; we had no maps and not enough drinking water; no compass; no good sense in keeping the doggie with us for the long, dry hike; no right to endanger a possibly expectant mother by the exhausting activity. I was chagrined, but the lesson was learned and remembered. We spent our last
two days resting and reading by the fireplace as the weather turned stormy. A rail journey to New York allowed us to stay with my parents, while I attended an American Chemical Society meeting daily in the City, and Nell shopped in Mount Vernon with my mother. Then it was back to Urbana-Champaign.

The 1947-1948 Academic Year

During the fall semester, I taught a graduate course in stereochemistry, which deals with the spatial arrangement of atoms and molecules. It was of my own invention and coverage, which made it an exciting challenge. The students and auditors were receptive and enthusiastic and contributed willingly to concocting original problems which they solved on their own or in cooperation with fellow classmates. It was interesting to me that one of my senior colleagues asked to see my notes, which I provided promptly. He was not favorably disposed to my subject matter and was not familiar with it. Nevertheless, I felt that it represented a body of research with which the students should be acquainted, especially since there was much new material and broad contemporary interest. In some cases, the teacher is lucky if his impact is publicly acknowledged many years later, e.g.:

"The third semester, taught by Nelson Leonard, dealt with stereochemistry . . . . Nelson was one of the more inspiring teachers I have ever had, and both Ernest Eliel and I credit him for steering our careers into stereochemistry."


"Both Jim and I were first exposed to stereochemistry in a graduate course taught by Nelson Leonard."


Brewster and Eliel became authorities on the subject and wrote articles and textbooks that were widely accepted and are still used.

In the Spring semester of '47-'48, I taught the undergraduate organic chemistry course for premedical students. It was a favorite course of mine because of the challenge of making those students aware of the general
applicability of the material to knowledge of human chemistry and the practice of medicine. The hope was always that one could surmount initial inattention, disinterest, and skepticism to end the course on an exciting note as the intersecting lines of information formed a pattern that was suddenly recognized by the students in retainable form. It is certainly not my purpose to describe all the courses that I taught during my academic life. Some were more satisfying than others. None was taught more than two years in a row, so that the material remained fresh in presentation. No course was the "property" of any one professor. Moreover, at Illinois we cycled our teaching assignments between graduate and undergraduate levels to assure that professors had commensurate interaction with potential research students.

I do intend to describe briefly, in as general terms as possible, some of the research that attended the teaching and was the real core of my lucky life. A mixture of intention, surprise, defeat, diversion, tenaciousness, diagnosis, temporary confusion, lightning solution, and surprising application defines research—at least, my research over the years. In most cases, a clear statement of a problem presaged a solution. In a surprising number of instances, the solution that was obtained, i.e., the results, required a restatement of the problem and guided us into a new line of research. The research was done with and by undergraduates, graduate students, and postdoctorates, with complete cooperation and open discussion. There were differences in degrees of interaction, diligence, and success. Within the whole process there were many of life's lessons.

Research on antimalarials described in earlier chapters was winding down. Two of my seniors, Frank Long and Lillian Hruda, were in the process of synthesizing pyrrolizidine and substituted pyrrolizidines for the first time. The nitrogen heterocycle was of interest because of its widespread presence in certain alkaloids, broadly defined as naturally-occurring, nitrogen-containing compounds possessing physiological activity. I outlined a logical route of synthesis invoking a condensation and sequential reduction and cyclization steps. When the plan, which started with the reduction of a nitro group to an amino group, was shown to John Stewart, a student in charge of our catalytic hydrogenation facility, he suggested that everything might be done at once under the proper conditions: hydrogenation with a copper chromite catalyst, using pure dioxane as the solvent, at high temperature and pressure. It worked! Frank Long brought me shortly the pyrrolizidine product that had been supposed to be his goal after a semester's work. It had taken only two reactions and provided a general method for making the family of pyrrolizidines. Johnny Stewart would not agree to having his name on our publication. He said
he was just doing his job, for which he was paid as a teaching assistant. When last I was in contact with Johnny, he had become a Dean at Montana State University.

From that first unexpected success, the catalytic reductive cyclization method was developed for the total synthesis of the lupin alkaloids sparteine and isosparteine. The complex tetracyclic ring system present in these compounds was synthesized thereby in two steps from readily available intermediates. The novel total synthesis earned me an invitation to spend a summer at the Canadian National Research Council to work with Dr. Léo Marion, who was a major figure in the isolation and identification of lupin alkaloids. I was able to accept the invitation in 1950, and our family’s three-month stay in Ottawa is described in another chapter. Applications of the reductive cyclization method served in the training of graduate students through 1952. The method did not achieve popularity elsewhere, however, probably because of the requirements of obtaining active cooper chromite catalyst and making certain that suitably high pressure and temperature were achieved without leakage of the rocking steel bomb that was used as the reaction vessel. That is, not everyone had a Johnny Stewart in charge of a catalytic hydrogenation facility!

**Kenneth Jan**

During the nine months of her pregnancy, Nell improved in health and strength as we followed the strict regimen of nutrition and exercise suggested by the obstetrician. I must say that Nell looked radiant and beautiful. She was excited at each stage in the development of the fetus, while her husband’s main emotions were of wonder and concern. The delivery was slow and painful, especially in the final moment, when one of her arteries was ruptured. Dr. Eleanor Payne Cheydleur had trouble stanching the flow of blood, telephoned her colleague in the early morning hour to come quickly to assist her, and told Nell what was transpiring. Nell, both stoic and practical, said, “Shouldn’t my husband be called in to say goodbye?” That speech galvanized the doctor, who answered, “Oh, no, it isn’t that serious,” and proceeded to correct the problem completely. When her colleague arrived, it was in time to inspect and approve the result.

We had selected a boy’s name and a girl’s name. Kenneth Jan emerged healthy, vigorous, and loudly complaining about his new environment. In the waiting room, I had been becoming more and more nervous as time went by until, finally, the doctor reappeared with a full report of the proceedings. Seeing Nell with Ken on her chest was one of the most
beautiful and rewarding sights I have ever witnessed. They stayed in Mercy Hospital, Urbana, long enough for Nell to recover from the corrective surgery and the mild ether anesthesia, which sickened her, and for Kenneth to settle on his feeding requirements. When they came home, everything at the house was ready to receive them. Ken was a funny, jolly baby. His full development is recorded in minute detail in the baby book which is in his possession. That is true for each of the children, so all have individual access to the proud-parent recitation of their progress. Kenny made us all happy. In addition, he could amuse himself for hours, which was a bonus. The name “Kenneth” was derived from the New York City telephone book. All five entries indicated it to be a first name only. He would have none of the name problems of his father, “Nelson.” “Jan” was in honor of Nell’s adopted brother, who died young. I was fascinated to follow the daily development of a boy child.

The Visa Matter

It will be remembered that Nell had entered the country on a visitor’s visa, which was valid for one year only. An extension was applied for, but it was obvious that the situation had changed. She had married and had a child. She was obviously no longer a visitor! A notice that she would be deported activated me to make many telephone calls to the Immigration Service until I reached a sympathetic agent who said, “We’re not going to deport your wife and the mother of your child,” and outlined what had to be done. Application for a permanent immigration visa would stay the deportation process. When the new application would be approved, Nell would have to leave the country and reenter on the new visa. The nearest reentry point was Windsor, Ontario, Canada into Detroit, Michigan, which was convenient because we could stay with my aunt and uncle who lived in Royal Oak, a suburb of Detroit, and they could take care of Kenneth while we popped over the border. I do not recall the details, but it went something like this: limousine to the U.S. Consulate in Windsor, where we had an appointment with another sympathetic official for the granting of the visa and return in the waiting car for Nell to reenter the United States as a true immigrant. The procedure worked smoothly, which allayed our nervousness about being border-separated from Ken. Nell applied immediately thereafter for U.S. citizenship. Her marriage to a U.S. citizen shortened the process to three years or perhaps a little longer. Nell was very proud that her official Americanization was underway. Much had indeed transpired in the first year and three quarters since her arrival in New York.