

CALTECH AS HOME BASE—

1991 Present

In July, 1991, I responded positively to an invitation from Fred Anson, Chairman of the Division of Chemistry and Chemical Engineering of The California Institute of Technology in Pasadena, California, to be a Sherman Fairchild Distinguished Scholar during the fall quarter of 1991. To be provided under the terms of the scholarship were an office, computer and related costs, travel expenses, an apartment, and a rented car. I did not incur much expense for Caltech because Peggy Phelps offered me housing in her little guest house and transportation via a little Honda, her second car. Peggy's house at 389 California Terrace, Pasadena, is just 2.2 miles from the Caltech campus. The appointment was ideal. It allowed me to keep in touch with my researchers at Illinois, while at Caltech I attended departmental seminars and the research seminars of Peter Dervan and Jacqueline Barton in particular. I could also follow closely the research work of the other members of the Chemistry faculty. The Athenaeum provided an agreeable place for luncheon with the young members in the basement cafeteria and with older and retired members of the faculty representing astronomy, astrophysics, physics, geology, chemistry, and biology in the main dining room.

I gave a chemical research conference talk in November of 1991, and after the students learned the compass of my research, we found an easier basis for discussion. In terms of research collaboration, Jack Roberts and I did proofreading of a joint research paper (our fourth) that was published in 1992. My collaboration with Dr. Fu-Tong Liu, Head of the Arthritis and Autoimmune Disease Section of Scripps Institute, was made much easier and more efficient by my presence at Caltech. I was made to feel at home, and I found time for thinking and writing. The library facilities are superior.

During the winter and spring quarters of the school year 1991-1992, I was still in residence at Caltech pending formalization of a new appointment, Faculty Associate in Chemistry, a "no-loss, no-gain, no-duties" position, i.e., without stipend. I was delighted to accept in March

of 1992 and even more delighted to accept renewals of the appointment after each periodic review. The receipt of an Arthur C. Cope Scholar Award of the American Chemical Society in 1995 fortuitously guaranteed continued financing of office expenses at Caltech, which was especially important for my writing and for liaison with the research that was still going on in my laboratory at Illinois. It also meant that my Illinois secretary, Patricia Silver, could be employed on an hourly basis to complete my review and research papers.

As my chemist friends recognized that I now had a new home at Caltech and that I had not really retired from doing chemistry, I received invitations at a restored rate. Especially of interest in my first year at Caltech was an invited Syntex Lecture at the University of Colorado in February, 1992, after which Stanley and Barbara Cristol drove Peggy and me to Vail, Colorado, for two days of skiing as a partial reward. This was followed shortly by a chemistry seminar at Brown University, which allowed us to spend time with Elkan and Gail Blout in Cambridge, Massachusetts, before and after my bus trip down to Providence for a visit to Brown. I accompanied Jack Roberts to Anaheim, California, when he received an award from the Orange County Section of the American Chemical Society and to the University of Nevada when he gave a name lectureship. From Southern California, it was much more convenient (than from Illinois) to attend the Annual William S. Johnson Symposia in Organic Chemistry held at Stanford University every October. I have continued to be a fixture at these symposia because the excellent roster of speakers guaranteed that the attendees would be hearing a discussion of the very best and the most current chemistry. In April of 1992, I returned to Stanford for a Symposium on Organometallic Chemistry and Materials Science honoring James Collman, who had been a Ph.D. research student with R. C. Fuson and was the first Nelson J. Leonard Distinguished Lecturer at the University of Illinois. Also in April, I returned to Illinois to hear Thomas A. Steitz of Yale, the Leonard Lecturer of 1992, which was the first of my annual spring pilgrimages to that very special place.

The 1992-1993 school year started with the Arnold Lectureship at Southern Illinois University in Carbondale and a visit made special by the hospitality of former Illini including Roger Beyler, who was an early Ph.D. of mine, and Michael Groziak, who did senior research under my direction in recent times. In November, I was also called upon to fulfill an obligation that was carried over from the Fogarty Scholarship that I had held at the National Institutes of Health, namely, to organize an International Conference at the N.I.H. and to solicit the additional funds that would be required "to make it a gracious event, with ample opportunity for informal

discussion.” I am not good at soliciting funds, but I did manage to bring in enough thousands from friends in industry to support a good conference in Bethesda, Maryland. My fellow Organizing Committee members V. Sasisekharan, H. Todd Miles, Robert L. Jernigan, and I invited distinguished and broadly representative speakers to perform at our International Conference on Structures, Conformations and Interactions of Nucleic Acids, which attracted a large audience.

One of the more exotic conferences that I attended with Peggy (by invitation) was the Scripps Institute Symposium on Frontiers of Biomedical Research in Indian Wells, California, in February of 1993, which gave us the opportunity of visiting Palm Springs and Palm Desert as well. Biotech companies abound in California. I visited and lectured at Genta and ISIS in the spring. My former graduate student, Doug Cole, has been developing some very impressive antisense drugs at ISIS Pharmaceuticals. In December of 1993, I was invited to give the Tanabe Research Lecture at the Scripps Research Institute in La Jolla. The work being done there in chemistry was and is spectacular. Accordingly, my day that was taken up with individual discussions was exciting. Peggy joined me at the end of the day when our host, Professor K.C. Nicolau took us to the home of Ms. Marianne McDonald, an art collector and a supporter of the research work at Scripps, for a dinner that was really a banquet.

During the 1993-1994 academic year, Peggy and I were also guests at the University of Oregon in Eugene. Virgil and Carol Boekelheide had made a bequest to the University of Oregon Foundation for an endowment fund to support and enhance teaching and research in the faculties of Chemistry, Music and Dance. The fund was matched by the State Board of Higher Education, and a University of Oregon Creativity Award was established in those areas. The first award in Chemistry was made to me. Virgil and I had been starting Instructors together at the University of Illinois and had followed each other's research from that early time. Carol may have remembered that when she was President of the German Club at Illinois she had inveigled me to sing some lieder for her club. In any case, I enjoyed two days of discussions with faculty and students and gave the Award Lecture. Peggy then joined me for the final two days when we enjoyed some parties and a concert of the Oregon Symphony Orchestra and an evening of “Opera à la Carte” featuring the University of Oregon Opera Workshop.

During the 1994-1995 academic year, I ventured on the last lecture tour that I was willing to participate in: a Parke-Davis Michigan Chemistry Community Tour-1994, organized by Anthony W. Czarnik, who was a former Ph.D. student of mine. The idea of instituting such annual tours

was also Tony's brainchild. The tour involved a lecture a day at Wayne State University, University of Toledo, University of Michigan, Michigan State University, and Parke-Davis Pharmaceutical Research in Ann Arbor and transportation between locations by rented car. There were former students, friends, or research collaborators at each stop, along with animated discussion with faculty, staff, and students and great hospitality. I admit to being tired at the conclusion of the tour, which ended pleasantly with a dinner reception at Tony Czarnik's house. In the spring, a visit to California State University Long Beach required two lectures in one day: a noon presentation for a general science audience and an afternoon technical presentation. Tom Maricich was my host in the Chemistry Department chaired by Ken Marsi. I was happy to respond to the request of the President and Vice President for letters of evaluation because the faculty's commitment to teaching and early introduction of their students into research was exemplary. What I saw at Long Beach deserved to be nurtured and given support and continuity. It is easy to recall the student and faculty interest and enthusiasm that I experienced on that Cal State Long Beach visit, and I was most impressed by the close relationship between students and faculty after graduation., CSULB has very loyal alumni from their Chemistry and Biochemistry Departments.

On the occasion of the 65th birthday and retirement of Professor U.K. Pandit from the University of Amsterdam on December 1, 1995, there was a symposium on the "Bio-frontiers of Organic Chemistry," in which Upendra Pandit and Binne Zwanenburg were speakers. Both had been very helpful in organizing IUPAC symposia, and Binne, who had been a postdoctoral research associate of mine, was a Professor at the University of Nijmegen. I decided to attend because I had accumulated so many United Airline miles that I could travel free, and it was well worthwhile. The visit to the Netherlands also allowed me to spend treasured time with my sisters-in-law, Hilda and Els, my stepmother-in-law Jacqueline Vermey-Volk, and her son Dr. Maarten von Balluseck and his wife. The trip proved again how convenient it was to travel around Holland by train.

Larry Overman was my host for a seminar visit to the Chemistry Department at the University of California Irvine, which is only 63 miles from Pasadena and where old friends Harold W. Moore and Robert W. Taft had contributed mightily to the early growth of the department. The campus was still festooned with banners celebrating the recent Nobel Prize of staff member F. Sherwood Rowland, who graciously accepted an invitation to be the 1998 Leonard Lecturer at the University of Illinois. There were more friends to see at Vanderbilt University where I gave

the Ingersoll Memorial Lecture in April, 1996, in particular Stan and Ann Tarbell, Tom Harris, and Fred Guengerich. Both Stan and Fred had Illinois connections. My former graduate student, Carl Johnson of Wayne State University, had given the 1993 Ingersoll Lecture. I was elected to membership in the American Philosophical Society in 1996 and signed the role book in the following year along with Sherry Rowland. The following entry appeared in the program:

Nelson J. Leonard

Reynold C. Fuson Professor Emeritus, University of Illinois, 1986—and Faculty Associate, California Institute of Technology, 1993-

Ph.D., Columbia University, 1942. Assistant professor, 1947-49, associate professor, 1949-52, professor, 1952-73, Reynold C. Fuson Professor of Chemistry, 1981-86, Professor of Biochemistry, 1973-86, University of Illinois; Fairchild Scholar, Cal Tech, 1991-92. Award for Creative Work in Synthetic Chemistry, American Chemical Society, 1963; Medal for Creative Research in Synthetic Organic Chemistry, Synthetic Organic Chemical Manufacturers Association, 1970; Roger Adams Award in Organic Chemistry, 1981; Edgar Fahs Smith Award, American Chemical Society, 1975; George Willard Wheland Award, University of Chicago, 1991. American Academy of Arts & Sciences (President, Midwestern Section, 1990-); National Academy of Sciences.

After an early career as a concert singer, Nelson Leonard concentrated on science with great success, first as a synthetic-organic chemist, then as a biochemist. In both areas he has shown originality and creativity. His early work on the chemistry of rings containing nitrogen was seminal for many applications. It led him to pioneering work on biologically active compounds, including some of great importance in plant physiology. His recent synthetic work is making possible a deeper understanding of how the DNA double helix structures are held together and how to detect changes with great sensitivity.

MORE THAN A MEMOIR

Leonard provided scholarly and scientific leadership as former Vice President of the American Academy of Arts and Sciences and as former President of the Organic Division of the International Union of Pure and Applied Chemistry.

My title for a lecture at the University of Nevada, Reno, in November 1997 indicates that I no longer have new and exciting research to describe, but that I still have yarns or anecdotes to disclose: “Surprises Along Carefully Planned Pathways of Research in Organic Chemistry.” Obviously, I have a scientific past. The present time at Caltech is occupied with attending seminars, service on the Freshman Admissions Committee, writing letters especially of the nominating and congratulatory kind, and conferring with students, staff, and visitors.