For the Archives of
The Scripps Institution of Oceanography.
University of California, San Diego.

In great appreciation for all
the years here.....

Denis L. Fox.

Christmas, 1971

AGAIN THE SCENE

Who that hath ever been
Could bear to be no more?
Yet who would tread again the scene
He trod through life before?

(From: "The Falling Leaf"
by James Montgomery)

AGAIN THE SCENE

Who that hath ever been
Could bear to be no more?
Yet who would tread again the scene
He trod through life before?

(From: The Falling Leaf,
by James Montgomery)

The University never fails to observe a professor's birthday. His sixty-seventh, that is. And my own was no exception. So, upon nearing the end of thirty-eight years on the faculty of this truly great institution of learning, I received my notice, on 11 March 1969, unsought but not unanticipated, that my 'retirement from active duty' was to become my privileged status in three months' time.

I received the news with strangly mixed feelings of both relief and disappointment. Relief because, at long last, here was an end to untraditionally long months of waiting for a verdict which I knew had long been pondered. Close colleagues had wanted me recalled to active service, and had acted accordingly. Hence had ultimate defeat by a restricted budget, combined with strictures newly enacted, been delayed. Moreover, my prevailing sentiment was one of having 'graduated'. As for the disappointment, this was for several reasons. Perhaps chief among these was my reluctance to find myself thus facing placement one step removed from the daily academic life of our graduate students.

Yet the reports which issued from various sources along with the chief item of news tended to make the whole scene worthwhile. At some risk of seeming to boast, save perhaps in the eyes of those who really know me (only a few of whom may read this wandering account), I recall the leading statement, made in several quarters, to the effect that I had been popular with the students as a professor who cared, and who had retained good relationships with them; the added comments that I heard about the quality of my research afforded further gratification. And I reflected: after all, when such voluntary comments come from independent sources, they have reminded us of the basic name of the academic game. Facial or vocal expressions of disappointment among certain younger friends and colleagues, or beaming, congratulatory reactions on the part of others, according to age or temperament and perspective, always give one a warm feeling of identity and friendship.

In conformity with long established tradition, I am to retain my office and some laboratory space at the University. I long ago declared, on numerous

occasions, that I liked my life work so well that, had I no salary, nor need thereof, I still should be doing what I was doing. The spirit in which such a claim was made is now to become subject to test, and no mistake.

I shall retain my federal research grant, and shall, as I've always promised, see my present students through to their advanced degrees. Indeed I intend to seek continued research support from federal sources as long as my work shall receive the regard that it has enjoyed during such support over the past years. I expect also to participate in some continued teaching, if on a somewhat reduced scale. Granted, there may be temptations to remain passive over acceptance of service on certain kinds of committees. There are, one regrets to say, at least a few kinds of committee, even though composed of basically intelligent, scholarly men, which can be appallingly dull in proceedings. I have heard professors, even in meetings of the Academic Senate, arguing over minutiae for unconscionable periods of time, like adolescents or fussy fishwives. And I have many times been one of many people who departed from such an extinct crater of boredom, near or after sunset.

But speaking of interesting versus uninteresting things and people brings up a question: Who should attempt to draft an autobiography, and why? The natural answer is that only those who have vital and attractive chapters to communicate, and which they can present in a lively, moving style, should make the attempt. However, this helps but little, people being who they are.

But when members of one's family and certain close friends express their belief that such an account would have much personal value, even if but in typescript, then one takes thought. I am remembering my elder brother Arthur, having started a document concerning his life, as a letter to his favorite granddaughter. But his life ended before he had written much more than a good beginning. Art had something of our father's enviable talent for expressive writing, as well as a most delightful and infectious sense of humor. I still laugh aloud remembering some of his well narrated stories, many dating back to our college days, now nearly a half-century a-gone.

"Yet who would tread again the scene
He trod through life before?"

Were such a philosophical question proposed in offer of a fantastically magic choice, i.e., of one's being translated back into the chronicles of other days, actually to repeat his own history, how many could find it possible to accept? One's life is united so intimately with the lives of others, many of whom

may have sustained great or prolonged suffering, that anyone's living a "re-run" of the whole, all-inclusive scene would be unthinkable in its wholeness, to me at any rate.

Yet many of us can survey the past in selective memory, objectively and often very happily. And if, in leisure hours, one likes to add, from time to time, recorded chapters from the scene he trod through life before, this may serve to inform, perhaps to encourage, those who choose to read the lines. And surely the writer must thus have identified himself, at least to the degree that he may have become better able to know himself.

Faculties, their presidents and students come to and ultimately depart, one way or another, from our great institutions of learning. But a truly great university is a continuum, sharing something of the immortal. Such reflections as these, as I join the stream of emeriti, bring their own deep sources of gratification. For I feel a perpetual identification with two great universities. They are the University of California and Stanford University. May I explain the reasons? I was for four years an undergraduate at Berkeley, where I graduated B. A. in chemistry in 1925. My doctoral degree in biochemistry I received from Stanford in 1931. For the ensuing 38 years I served on the U. C. Faculty here at La Jolla. A Rockefeller Research Fellowship at Cambridge University (1938-1939), a Guggenheim Fellowship in 1945-1946, and generous research support over the years, from the Rockefeller Foundation and more recently from the National Science Foundation, have been sources of much benefit and satisfaction to me and to my students.

But to return to the features that bond one forever to the places of early intellectual and spiritual stimulus, these are identified chiefly with people. As I walk on the Berkeley campus, or around Stanford nowadays, it is with the realization that not even one of the countless students whom I see, nor, for that matter, a good many of the younger staff members, had been born at the time that I was a student. Yet the great ideals and traditions are immortal, and their steady pulse may be sensed throughout the time-honored precincts, in any of the day's twenty-four hours. And, although few indeed of the long-ago faculty remain, the sight of, and perhaps some reminiscences with, some of those few survivors fortify memory's eyes and ears with the recollections of other days and other great figures whose singular influences helped to build the stature of him whom now pauses, remembering.

A few of the men with whom I had courses or other contacts, whose names will be familiar to many, and who date back to my Berkeley days of the early and middle twenties, are Joel H. Hildebrand, Gilbert N. Lewis, Edmond O'Neill, Charles Walter Porter, T. Dale Stewart, Gerald E. K. Branch, Erman D. Eastman, Axel R. Olson, Wendell M. Latimer, Gerhard K. Rollefson, William C. Bray, all of the Chemistry Department, E. Percival Lewis in Physics, Carl L. A. Schmidt in Biochemistry, Charles V. Taylor in Zoology. All save two of these, I believe, are gone, at this time of writing. It happened, however, that my eldest son Ron, also earned his bachelor's degree in chemistry at Berkeley, where he knew some of the same professors about 30 years later.

But it was four years after my graduation from Berkeley that I went on to Stanford, there not only to review some of the foundations in chemistry that I had laid at Berkeley, but to enter the School of Biological Sciences, and therein to fall a ready captive of the broad thinking and teaching of plant and animal biology, physiology, biology and chemistry of protoplasm, comparative biochemistry, ecology, natural history and evolution. This exposure to the broad reaches of biological science was to prevail in my thinking, and in my own teaching, throughout the rest of my academic life.

At Stanford, I had courses under, or equivalent contact with, such leaders as Edward C. Franklin, Carl L. Alsberg, Charles V. Taylor (who had migrated to Stanford from Berkeley and who was really the prime motivator in my return to do my graduate work at Stanford), J. Murray Luck (under whom I did my doctoral work and considerable teaching), Carl R. Noller, George J. Peirce, Harry B. Torrey, George S. Parks, Ira L. Wiggins, and James W. McBain.

The pride that I always felt in having received the doctorate from Stanford was afforded renewed impetus when I was selected as a Stanford alumnus and faculty member at U. C., to participate in Stanford's celebration of her 50th year; I believe it was in 1944.

And I have spoken there at seminars, from time to time. Another gratifying memory that I nurture is in the fact that, through a set of seemingly unrelated circumstances, I suddenly was able, on the eve of my departure abroad in 1938, to implement Stanford's absorption of an outstanding young man, Fred M. Falconer, who remained at Stanford for the ensuing 21 years, up to the time of his death, and whose name is now most appropriately borne by the biological library in Jordan Hall.

The fortunate matter concerning all of these reminiscences is that I seem able, somehow, to recall with pristine clarity the faces and voices of each of those professors who had his own part in building knowledge, attitudes and experience into my academic beginnings so many years ago.

I, in turn, should like to nurture some hope that in similar ways (but doubtless unrecognized by me) I may have been able to foster similar benefits in the lives of my own graduate students over the years that have intervened.

Certain letters, messages, reports and direct oral communications have suggested to me that those hopes have not been ill-founded.

I owe more than I can express to great scholars, to colleagues, students, and particularly to members of my own family, whose love has been unchanging. My numerous shortcomings remain my fault alone. I am eternally grateful to all of those who have practiced overlooking them, and have been steadfast.

OUT FROM ENGLAND

My father, John James Fox, was the fourth (first son) of six children, born in Devizes, Wiltshire Co., England on 7 Feb., 1866, to the wife of John Russell Fox, a journalist and county marshal. Due to fiscal strictures, John Fox left school at the age of 15 1/2 years, and went to work. His romantic spirit had been stirred by his reading of the great plains and Indians of North America. At age 19 he realized his long-nurtured ambition to travel across, sailing to New York, and entrailing thence west, to find himself a job in the cattle country. He made his way to Medicine Bow, Wyoming, arriving there early in April, 1885 (only 9 years after the Custer massacre), and went to work for Frank Hadsell at Elk Mountain, remaining there on the large ranch as a horse-wrangler and cowboy for 2 years before returning once more to England. His life in Wyoming was chronicled in a typescript that he had turned over to me, and was published under the title "The Far West in the Eighties", in the Annals of Wyoming issue of January, 1949. I have many times felt sad on reflecting that, through delays on my part, Father's account of those days in the far West was not actually published until more than four years after his death. It is very good reading.

John Fox became engaged to his cousin, Florence M. Fox, whom he had known since their childhood days. He returned to the United States, going this time to San Diego, California, where he settled on a little farm near where Lemon Grove now stands. He then sent for Mother, who arrived in Los Angeles on St. Patrick's Day, March 17, 1895, and they proceeded at once from the train station to a little church close by, to be married. My elder brother Arthur was born on the farm in San Diego County, on 5 September, 1896. A year or two afterward, the family moved, for some reason, to Guadalajara, Mexico, where they resided until about 1899. By that time, Father again felt the lure of the green downs of England, ideal for the raising of sheep. Back to the old country, accordingly, they sailed, to settle at Billingham Farm, Udimore, near Rye, on the southeast coast of Sussex County.

On that little farm, I arrived, early on 22 Dec., 1901, "B. O. A.", as it is abbreviated in today's medical schools (born outside asepsis = at home). My father told me that, while hitching up the horse to the rig, in order to fetch the doctor to preside at my arrival, he heard the first squawk emanate from the overhead bedroom, so knew that I had jumped the gun. He fetched the doctor, in any event, and that worthy man of medicine carried out due inspections, and declared that all was well.

The third and last child, my brother John Raymond Patrick Fox, was born also at Udimore, only sixteen months after my own birth. Being quite a double handful, I understand, I was promptly transferred to the grandparental home in Devizes, to receive the ready ministrations of four maiden aunts, especially Alice Fox, who practically adopted me for about the ensuing couple of years. Naturally, I can remember only the barest of vignettes of my early days in England. One was my puzzle on seeing, through a picket fence, a small flock of ducks, quacking about in a mud slick; one of these (doubtless the drake) had what looked to my inexperienced eyes like a stick thrust laterally through its body, which seemed to bother the bird not at all. The instrument was, of course, an under-wing bar, fastened round the body to prevent the drake's leading his harum through narrow fence-passages. A fracture of my left arm-radius is remembered because, having been allowed to knit improperly, it had to be re-fractured. Another memory was related to my discovery of Grandpa's artificial denture in his coat-pocket, at table, and his chuckling interception of my seizing it; and presently his broad smile at me as he completely mystified my small mind by placing the set of teeth in his mouth and clamping it shut.

Well, Father having once tasted the waters of California, now realized that this was the country, after all, for him and his little family. While there were remonstrances against the idea from his people in England, still, off again it was for him, early in 1904 probably. And on the first day of March, 1905, Mother arrived at New Orleans on the "S. S. California", with Arthur (8) myself (3) and Jack (1 1/2 +), plus a so-called "nurse" who turned out to be irresponsible, and more trouble by far than she was worth. By train we travelled to San Francisco, and thence by boat and train to the valley town of Napa, California, where Father had a few acres of farm land some 7 miles east of town. Here I was to live, attend a primitive little country school, and learn the ways of Nature during the next seven (nearly eight) years.

Childhood days on the little farm, Oak Glen, were happy ones. We were poor, but we children knew nought of that. We were well fed, upon meat, milk, fresh vegetables and fruit raised partly there on the farm. Our clothes were rather marginal in quality, hand-me-downs and improvised garments sewn by Mother. And we were bare-footed most of the year, both at school and around home. We children had special chores: Arthur milking the cow, I releasing the flock of hens in the morning, feeding them, collecting the eggs, and locking the hen-house at evening-fall, and cleaning it out on Saturdays. We chopped kindling-wood, kept the wood-box filled with firewood for the stove and fireplace, set the

dinner table, cleared it after meals, and took turns washing and drying dishes. We gathered mushrooms in spring, collected mustard-greens for Mother to cook, and Arthur shot rabbits and plump birds which we carried home for the table. I never enjoyed the killing of animals.

Swimming in the Napa River was the great treat of summer days, especially when families from the surrounding farming community gathered together for all-day picnics. I loved to see the pretty little girls who came, but was far too shy to initiate social activities with them, until or unless they broke the ice, which they usually did.

Visits to the town of Napa, by horse-and-buggy, were genuine events in our lives, especially near Christmastime, when all of the lighted stores were magic to our eyes.

Mother and Father were cultured and correct English. They were loving, but firm in teaching us proper manners, diction and moral principles. Un-grammatical language was quickly censored and corrected, while no shade of rudeness was tolerated. And no utterance of profane or obscene language ever was dared, in their hearing.

I learned few if any essentials about boys, girls and sex from my parents. I suppose that, coming from the mid-Victorian period, they could not broach the subject. Animals, discussions of their amorous activities, and random talk on the schoolgrounds and among boy pals, the latter notably after we had moved into town, supplemented my early understanding of sexual exchanges. But, in retro-spect, it turned out on the whole to be a fairly gradual and easy process, without shocks.

We hiked to the Napa Soda Springs School across volcanic rock-strewn hills and through tree-dotted fields, where cattle grazed and wherein we had to keep a sharp lookout for aggressive bulls. The school was a one-room affair, taught by an affable lady who loved kids, but who could spank hard when necessary, and sometimes, I used to think, when not so. There was a rather motley group of pupils, mostly children of Italian immigrants who had farms, or jobs at Napa Soda Springs, where mineral water was bottled and sold. A few Austrian youngsters were in the school, as well as some Germans and Jewish lads. There were also the usual short-time migrant types, whose family background, occupation and addresses were rather vague. Language in the schoolyard, whether "clean" or otherwise, had few redeeming features, and any intellectual appeal, even inside the schoolroom, was characteristically at a very low level. I happened to be

assigned a seat next to the so-called "library", which was a glass-doored cupboard of bookshelves; it was perhaps 7 by 4 feet by 28 inches on overall dimensions, and contained a full but ill-assorted collection of reading matter. I well remember surreptitiously taking certain books from these shelves, to read for pleasure instead of performing assignments. One of these was "The Adventures of Robin Hood", a very well written and finely illustrated version (Pyle), which employed the old English-style of conversation. I read all of that book, and how I loved it! There was Robinson Crusoe, as well as Pinocchio, each of which, fortunately for me, was assigned for reading. I remember also having learned from McGuffy's readers.

I recall being released for early recess-period each day with an Italian lad of marginal intellectual capacity, but who could talk about horses and dogs by the hour. He pushed me into the creek for a thorough soaking one morning, and, I think, went completely unpunished. Had I informed upon him, his many siblings would have descended upon me. But, on another day, when I served him similarly, what an uproar! On one occasion he led me to a bird's nest, robbed it of an egg, and deliberately broke it. On discovery, he reported that I had done the deed, and I was about to be punished over my angry protestations. When I told the truth, leading to my companion's punishment, I was loudly censored by the Mediterranean contingent as a tattle-tale!

There were grim chapters in those country-school days, but on the whole they were happy ones. I learned my lessons without great difficulty, which, under the less-than-optimal mental level at the school, was fortunate. The game-rhymes, if somewhat garbled, served their purposes. We played "horse", wherein a "driver" drove his team by holding a long string, attached to or held by, the row of "horses" ahead. A small switch, wielded by the driver to encourage acceleration, often evolked loud, non-equine-like protests from the kids, and an investigation by the alert teacher. I recall being the driver on one occasion, and throwing a small wooden ship which struck one of my "horses" upon an ankle, whereupon he set up a tremendous roar of weeping, claiming that I had hurled a large rock, which had struck him! Heeding the protests of the lying plaintiff, and ignoring my vigorous attempts to explain, the teacher administered public corporal punishment, as usual, greatly insulting me. Here was I, an English boy, taught at home to tell the truth at all times, whose words were now disbelieved by one in authority, against the testimony of an immigrant liar! But any attempt to get action from my parents would have been largely wasted time. Such incidents just had to blow over.

I experienced feelings of deep compassion for certain cases of humanity, and for any animal that was suffering. I can recall one instance of a poor, weedy little chap whom I shall call Andy, who appeared at school from a neighboring farm (or camp) over a short period of time. He was silent, sad, manifestly very poor, and talked to nobody at first, and seldom at any time. It was said that his parents were nearly paupers; and the poor, meager little lunches of odds and ends that he carried to school and tried to consume in private, levelled ample witness toward such a conjecture. Some of the kids thought he had a disease of some kind. But they picked on him, and blamed him for all and sundry wrong-doing questioned by the teacher. Granted, he was rather ugly, quite feckless, a social cipher and a copying informer, but he was far too weak and lacking in initiative to invent any tricks. I can recall one cheerless morning when poor little Andy was sitting on the schoolhouse steps, in his ragged clothes, with his little lunch-pail beside him, and clutching a little bunch of wildflowers that he had plucked from along the roadside en route to school to give a little pleasure to someone, probably the teacher, for the schoolroom. As a group of cruel kids called various taunts at him, with sundry threatening body movements, the pitiful little chap's soaked face sagged with wordless grief and torment as he whimpered softly. And the poor little floral tribute, beginning to wilt in the hot little hand! I feel no shame in admitting that the whole scene made me feel like weeping. And even now, nearly 60 years later, I am saddened by the memory etched in my mind's eye. Especially something about the flowers. Pathos in the schoolyard! How cruel children can be.

Andy was not at that school for long, fortunately I suppose. Even the teacher used to become exasperated at his feckless stupidity, and, I thought, somewhat loud and abusive toward him. "Scribble then, for heaven's sake, just scribble, if you can't learn to write", she exclaimed one day, as she forced his hand to push his pencil randomly in great scrawls across the paper, while he wept as usual. We never heard of Andy again after he left, of course..... I had wished at the time of his torture by his schoolmates that I had had the moral courage to move through the knot of abusers and rescue him, leading him away. But school was not yet open; there was nowhere to escape to; and I was greatly outnumbered.

IN NAPA TOWN: late 1912 to mid-1917

At the end of 1912, when I was 11, we pulled up stakes at Oak Glen, and, leaving the flock of hens I loved and had cared for, also Tuce, the sweet old gib cat, Bossy the cow, and Molly, our faithful black mare, we moved into Napa, where I was to continue schooling and growing up until the summer of 1917, when we made the really important move to Berkeley, where Father had been appointed as a land appraiser for a bank.

Meanwhile, here in Napa was my graduation from a "country jake" (and what a green one indeed) to a townboy. Coming from a rather non-descript country school, and in mid-term so to say, as well, I was placed to repeat 5th grade in the town school.

How oddly memory may serve us at times. I can forget some important events, but somehow manage to retain the names and faces of my numerous teachers in Central Grammar School, which in those days faced on Second, School and Third Streets. In Napa I joined the Boy Scouts of America, learning something of hiking, camping, woodcraft, discipline, patriotism and the Scout Code in general. One can make solid friends here and there in such an organization, as I did.

Another prominent memory is going twice for vacations to the village of Bolinas, on the coast north of San Francisco. We boys (Jack and I, since Arthur was in the U. S. Navy then) used to enjoy daily swimming in the surf, walks through the sleepy little village, meeting new friends, going on picnics, digging for clams at early-morning low tides, and making acquaintance with other sea animals.

I well remember one summer day when my brother and I were in the surf and suddenly found ourselves drifting far from shore in a strong rip current. Just as I had begun to feel alarmed, Jack called "Help! ". I swam over to him, warning him not to struggle or to seize me, and tried to tow him toward shore, but the current was far too strong for my stroke. I called out, "Hurry up, Father! ". I can see my dad to this day, jumping up from his seat on the sand with the others and without a moment's hesitation, dashing right into the surf, fully clothed in his light tan suit, and calling out, "Keep swimming, Pat". He reached us, grabbed my brother, and swam toward shore. Neither he nor a couple of young fellows who had dashed in with him heard my own desperate call, "Hey! Help me too! ". I had just time to lunge forward with the strongest stroke I could manage, seize my dad's coat in the back, and thus get the towing to shallower water that I needed against the rip.

Later on in the day, Ray asked, "How did Denny get out?" And Father replied, "Denny got himself out". When I then told him that he had towed me most of the way out of the surf, he said that he had been quite unaware of it. He knew that I was a good swimmer, and had not worried about me. But I found out that he was a much stronger swimmer than I. I must have been 13 1/2 at the time. The sea water destroyed a good watch for my dad on that memorable day. Not a second's thought had he given to his own safety, nor to his clothes or watch, but only to his son, who never forgot it.

My mother was the most noble, gracious and genuine lady whom I ever knew. She possessed a lighthearted cheerfulness and a ready sense of humor. She was ready to sacrifice herself in countless ways for the welfare and happiness of Father and us three boys. I never heard Mother make an unkind, untruthful or uncharitable utterance against anyone. She habitually sought to recognize and to emphasize the better qualities in others whose names might come in for criticism by us.

Mother was deeply religious during the whole of her life. Faithful to her beliefs, yet she never tried to preach to us, nor to prevail upon us to share her own special tenets. She taught us by her living example, every day of her long life. She was intellectually and artistically inclined and talented, and taught her sons to play, whether on piano, organ or strings. This began even in our young boyhood days, up in Napa country. In summertime she used to give us lessons in beginning German and French. She knew both of these languages well, having gone to school as an English girl in both Germany and France. She knew Latin and Greek as well, and conversational Spanish. Her early linguistic instruction served me well years later, in both high school Spanish and Latin, and in college French and German.

But my mother's outstanding characteristics were those of simple, uncomplaining, uncompromising honesty, nobility of character, and a kind of humble humanitarianism toward all people. She could show great indignation, even anger, if one of us exhibited unbecoming behavior of any kind. And her words of earnest censorship and counsel were not in vain. I can recall her words to me, at an extremely trying time of my life, "Remember, courage is in our blood!". And if I were ever to ask about a procedure of questionable soundness, her response used to be, "Do you think it wise?", or "If you think it wise".

It would become unseemly for any man to boast openly and in public about the nobility of his parents. But I write of my parents here principally for the

reading of my family, and that my children and theirs may know something about their linear heritage.

In my boyhood days, spent from ages 3 to 15 (1905 to 1917) in the county and town of Napa, California, the commonest mode of transportation was by horse-drawn vehicles, while the gradually increasing numbers of automobiles, owned for the most part by the well-to-do, were objects to attract attention. But their tires were thin and faulty, subject to blow-outs and easily punctured by sharp objects, and difficult to de-mount and re-mount. And their motors left much to be desired in features of reliability. As a consequence, a Sunday afternoon drive into the surrounding country-side offered varied scenes of temporarily stalled cars, and often evoked offers of assistance from the more fortunate. It was in and around Napa, indeed, that I learned to drive, under the instruction of a fellow boy-scout, slightly older than I, using my dad's Ford. So I had a driver's license at age 15.

Bakery wagons, milk-delivery vehicles and various grocery carriers were horse-drawn in the town of Napa. Sam Lone, a Chinese with a gaping mouth and a conspicuous goitre, drove a horse pulling his narrow, black, hearse-like laundry-wagon, while Sam Kee, a compatriot of his, was less affluent, and carried his laundry in a huge sack over his shoulder.

"Fatty" Grigsby owned a moving truck, drawn by two steeds. He was a vast man of enormous girth, and did no work, but sat a-top his vehicle all day, weighing down the springs on his side of the two-passenger seat, wearing a straw hat, and a pleasant smile adorned his broad, moustached countenance. His partners did all the lifting and loading. He owned the wagon, and served as driver.

There were several fruit vendors, junk collectors and garbage-cum-trash pick-up outfits that were similarly equipped. The automated street-sprinkling equipment was kept busy daily in summertime. One junk-buyer used to drive his rig along the streets with extreme slowness, calling out with unvarying regularity, "Any Ra-a-a-a-gs, bottles, SACKS?". Another man of similar occupation and like equipment used to raise a hand, covering his nose and mouth, then calling out a long string of phrases in a kind of nasal, chanting monotone. Although I saw and heard him during several years, and listened as carefully as I could, I never at any time comprehended a single word of his incessant call. Nor can I remember his ever glancing aside from his frontal, lethargic gaze. Another man, a fresh-fish vendor, drove a little Brush automobile slowly down the street, and blew loudly on a tin horn, whereupon our cat, Oscar, ran into the street, mewing with anticipation of the regularly dropped fish-scrap. Mother was a regular customer, and

used to carry out her large, oval-shaped, enamelled platter, to receive not only the piscatorial purchase, but also the silver change from the hand of Mr. Green, the friendly, quiet-voiced fishmonger. Mother then used to take the plate into the house, remove the fish from it, and pour scalding water over the silver coins, to remove the fishy odor, which she thought otherwise would permeate her coin-purse. Tony, the soft-eyed, friendly man who drove the bakery wagon, used to drive by daily, nearly always to be summoned for a purchase. When asked the make of pies carried, he used to recite, "Pies? It's apple, mince, pineapple, lo-gin-berry".... etc through a protracted list, ending "peach, apricot, 'n'lemon". He had rehearsed the list, which was always the same in sequence.

One of my schoolmates, Harvey Weybrew, drove a delivery wagon for the Beehive grocery, and used to halt in front of my house, emitting a long, trilling whistle as an invitation for me to join him on his two-passenger seat, to accompany him on his delivery rounds. This I did as often as possible.

Waldo Malandrino's mother, a widow, used to drive a beautiful, springy horse, which trotted past our home on Third Street, drawing the lady in a neat little topped and fringed surry. One of my friends, like several I knew, rode horseback for transportation. This boy used to ride his horse from his country home into town and to our house in Napa to take his music (violin) lesson from Mother.

Bing Kee was the proprietor of a little corner shop on North Main Street, where Chinese toys, ornaments and notions were on sale. This store was the chief attraction for me when, as a smaller lad, I was driven into town near Christmas time to see the magic, lighted stores. And when we had moved into town I was as frequent a visitor to this and allied places as my slender budget would permit. Although I had noticed that Bing Kee himself had become less active in the shop, more sedentary, and not only weak-looking but of an ill appearance, it was a tremendous shock to me to learn that he had been discovered to have leprosy. I had, from some of my reading, conceived a great fear of this disease, formerly (and fortunately erroneously) believed to be exceedingly contagious. I can remember long feeling some apprehension lest I might have contracted the dread affliction on a former visit to old Bing Kee's little shop. Whatever the disease actually was, it soon transported his spirit to those of his ancestors.

We used to enjoy visits, with and from members of a British-Mexican family who had long been friends of our family, beginning in days before my father was married, back in the mid-nineties of the past century. And the friendship

had continued to be a warm and mutally hospitable one. Mr. Chaffey had married the younger sister of his deceased Mexican wife, and from the two unions there had been born an aggregate of at least nine children; three boys and six girls. Most of these were grown, or nearly so by the time that my brothers and I knew the family. Various contingents of the Chaffey family used to travel up from Oakland into the country north of Napa where our farm was located, to spend periods of time with us. They helped around the house, picnicked with us and were very enjoyable company. On occasions, some one of us was invited to spend a week or two in the Chaffey home in Oakland. This was a pleasant adventure, for I was driven to Napa, where I took the little train to Vallejo, and there boarded an old steamer, either the "Sea Home" or the "General Frisbee", for San Francisco.

On arrival there, it was necessary to take a ferry boat to the Oakland pier, and thence a train to Oakland. If I travelled alone as far as the City, I was met there, since I was a kid who easily became lost.

At the Chaffey home I was treated as a junior member of the family, and enjoyed walking and talking with the older boys, as well as with the youngest girl and her girl-friends at times. There was no romance involved, for I was growing from about 7 to about 12 years in those times, while Anna was some seven years older than I.

I recall, in fact, when I must have been about 8 or 9, that Anna was assigned, or chose, to give me my bath. And how I disliked that humiliating episode! As though I had not been capable of doing my own bathing! It happened only once, by my own choice.

I suppose, however, that the crowning event of that general kind occurred when, at about age 9 (I hardly could have been older under the circumstances), the living quarters of the Chaffey domicile were congested to an extent that necessitated my being assigned to sleep in Anna's bed. But, when her retirement time came to pass, that 15-year-old (or perhaps 16) joined me there. I can recall feeling a vague sense of embarrassment over the arrangement, which seemed singularly odd, to say the least. I felt somewhat concerned lest the girl, whether while asleep or before, might perchance nestle up for warmth or closer contact with me; and I could not decide how I might be able to preclude such a contingency, or to recede without hurting any feelings. As it happened, however, nothing of the kind transpired. Indeed, I can recall that there was some tacit, mutual retreat from chance impingement between any unclothed body-parts during the night. In fact, I think that I can recall having wished that it always had been I who receded first, rather than she. I do not remember the arrangements having been implemented

another time. It probably would have been inadvisable.

Fortunate it was that neither of us was older. I can recall having entertained reflections somewhat different from those on that earlier contingency, when I visited the home at ages 16 or 17, and was with Anna in her early 20's. But I was far too green and shy to translate intruding thoughts into words or into the faintest semblance of an overture; and I was idealistic.

My father became Horticultural Commissioner of Napa County while we were living in town there, and bought his first automobile, a Ford. Sunday afternoon drives into the countryside with him were a treat, as were Saturday or summertime trips out to ranches, where he was needed for advice on growing crops. The Ford also took us to Bolinas, where we loved the surf-swimming and early-morning clam-hunts at low tide. The sea-water must have entered my very blood in those early days of my youth, and stayed there, for I assuredly gravitated back to the sea.

Odd it is, perhaps, how well the mind can retain clear visual and auditory memories of persons who taught one (or at least monitored the classroom.') in days going back for more than a half-century. Thus I discovered, somewhat to my surprise, that I could remember the surnames, faces and voices of all my teachers, up through 8th grade, and even far beyond. The tabulation would go somewhat as follows:

Calendar yr.	Age	Grade	Teacher and School	Comments
1908-12	6-11	Kinderg.	Marguerite De Lay (Napa Soda Springs)	Usually kindly; sometimes exasperated and unfair; punished me corporally on false testimony against my claim of innocence; not too knowledgeable, but we liked her.
1912 (Briefly)	11	Low 5	Miss Ackerman (Central)	Young; pretty in a sulky way; taciturn and sharp.
(Repeated 5th due to move)			Miss Krause (Central)	Attractive, blondish and freckled; fair, intelligent, witty.
1913	11-12	H5	Julia F. Begley (Central)	Attractive, fair, smart, mischievious tease; a brown-eyed, buxom red-head.
1914		L6	Miss Windsor (Central)	A dull, pale-eyed, hatchet-faced woman; cruel and humorless.
1915		H6-L7	Miss Begley again	Sweet little thing and a great teacher.

Calendar yr	Age	Grade	Teacher and School	Comments
1916	14-15	H7-L8	Loretta Christie (Central)	A buxom, bleached, husky blonde; very strong arms, steel-blue eyes; keen, easily angered, feared. I liked her.
End of 1917	16	H-8	Miss Cora Wright (Central)	Ponderous, grouchy, middle-aged and tiresome. Really a sorry case.

The most clear memory that I retain of Miss Winsor (or Windsor?), unfortunately, is of being suddenly clamped by the nape of my neck, from behind; as I stood at the blackboard, her sharp, claw-like fingernails nearly paralyzed me with pain. The creature thought that I had been ridiculing her; more likely I had been amused by a classmate when she had happened to make a remark. It is no joy to remember someone with nought but a vague sense of abomination. Teachers in our schools for the young should reflect upon these contingencies. I'm reminded of this since I recently met, in the anthropology class I audited at Cranbrook, a very lovely young teacher whose students are very lucky, as she has a deep love for them.

Miss Christie was feared by most, even by some of the tough boys, for her powerful shaking with one arm, holding onto the victim by his collar. She solved most of her disciplinary problems thus, rather than resorting to sending a misbehaving pupil to the principal's office, possibly for a strapping. The only exception that I recall is when one tough young kid refused to stand up for a shaking. The teacher seized him as he sat at his firmly fastened desk, and tried to shake him, but he braced his whole body and clung tightly to his desk, so that Miss Christie shook mainly herself in her efforts. She loudly commanded him to rise, and he firmly retorted that he would not. When Mr. Shearer, the principal, was summoned to review the case, he merely said, "Come with me, young man.' ". Whereupon the boy replied readily, "Sure I will", promptly rising and following the principal from the room. What then ensued we did not learn, so far as I can recall, but all of us could imagine. I did not happen to like the kid for his toughness, vulgarity and general cruelty, but I could not help admiring his courage and determination not to be shaken by the notorious specialist.

Having liked my teachers, save for one earlier mentioned, up to this time, it was a disappointment to spend the last half-year of the 8th grade, up to the time of graduation, under the supervision of Miss Wright, who took dislikes and had pets. I was not one of her favorites, for I was too easily amused and drawn to laugh unavoidably at antics or whispered comments, notably by one Waldo Malandrino.

Miss Wright had no apparent sense of humor, but often a long, searching, dark-countenanced glare, rather like a face of damnation. (How awful it would be to be on the receiving end of such comments). Moreover, the poor creature had the misfortune to possess prominent, irregular, maloccluded teeth. This condition resulted in a certain clenching posture of the mouth, giving her a bizarre, gnome-like grimace. I'm not proud of the fact that some of us boys were unkind enough to imitate the old girl facially and vocally around the schoolyard, and to refer to her oral equipment as 'the rock quarry', or 'the coffee-mill'. I recall that she had fairly strong digital muscles. Not that she gripped with the whole hand, but she used to seize a fleshy part of someone's arm, and then pinch hard, like a crustacean, simultaneously growling words of censorship through clenched teeth. There must have been a better side to her, but I'm afraid it seldom came through with the boys in her classes. Glad I was indeed to depart from Central Grammar School's 8th grade.'

For instruction in the elements of graphic art and water-colores, we had three succcessive teachers: Miss Fuller, a dark, spidery, rather forbidding lady, who spoke in a slow, monotonous voice; Miss Nutting, blonde, quiet, and rather colorless; and finally Miss Mary Gleason, a sweet-natured, dedicated teacher with a gentle voice and a delightful sense of humor. Incidentally, she married Professor William V. Cruess, for whom I worked, as a college freshman, some years later in the Fruit Products laboratory at the University of California in Berkeley, and whom, some years after that, I encountered as a fellow-graduate student at Stanford.

Miss Nellie Payne, dark-haired and rather lovely, save for a frown-line between her dark eyes, taught us vocal music each week, and was a good disciplinarian. I remember still some of the school songs that we learned under her direction.

For so-called manual training (actually wood-shop work) we boys of the 8th grade traipsed over from Central Grammar to Napa High School for one morning of each school-week in the term, to learn the art under the guidance of one Mr. Searcy, an angular, gaunt, sharp-visaged man with a nut-cracker jaw and a quick, unpredictable temper. We nick-named him "Ichabod Crane", for both his physical appearance and his mental equipment. He once man-handled me, holding me by the seat of my trousers and my shirt, seating me back onto a bench, for my having descended from that earlier, temporarily assigned throne for some reason, to return to my wood-working. This retribution was perhaps mild enough, but, I thought at the time, unnecessary, since I had considered my

residence on the perch to have been long enough, and had tried to work seriously. Still, I suppose that I had been at fault. But he tried one day to discipline another pupil, Gerald Manassee, who had, after one warning, again cleared his throat or snorted rather audibly while the teacher's verbal instructions had been in progress. Mr. Searcy seized the boy by the throat and tried to back him down across a work-bench. His judgment was wanting in that instance, however, for the boy was both husky and tough. They tussled, and he struck the man a resounding clout across the forehead before the struggle ceased by mutant tacit consent and they stood hot and red, glaring at each other and breathing heavily, while the rest of us watched anxiously for further developments.

The pupil was the first to speak, between panting breaths. "Try to grab me by the throat, would you?" he growled angrily. Whereupon the teacher strode to the door, opened it, and turned around. "Get out of here," he said.

"I sure will", replied the student, "I wouldn't stay here for any darned fool". Off he strode, while the miserable teacher resumed his efforts in the shop instruction, a long red wheal across his forehead. I had not cared very much for the youth, who, of course, had obviously to be dismissed from the room, under the circumstances. But on that day I greatly admired him for his vigorous and effective opposition against the brutal onslaught of the disliked teacher.

We thought that he must have learned the neck-grabbing, knee-on-victim's chest routine from the principal, who also had a violent temper and had acted similarly in the past. I never saw Mr. Searcy try the same approach again.

When my older brother Arthur had been at the same high school some years earlier, and had, on one occasion, been noisy in a group of other similarly acting boys, this principal had summarily knocked him to the floor. Art had said, as he related the incident at home, that he had very nearly struck the man in retaliation. Whereupon my parents had vigorously objected, declaring that no boy ever should strike a man who is in authority. My mother confided to me later, however, that, as she had thought further about the cowardly cruelty of the principal, she found herself wishing that her son actually had retaliated. With this I surely felt in agreement, for it had been my own view from the beginning.

My good old dad took more direct action a few days later, walking into the principal's office and informing the secretary that he was there to have a talk with Mr. Denton. When he received the reply that Mr. Denton was teaching a class and could not be interrupted, he answered, "Young lady, my own time is short. Now, you just summon Mr. Denton here to his office, else I shall conduct my business with him in his classroom."

The principal came promptly, white and shaking, probably with mixed anger, irritation, and very likely apprehension, for he was not a brave man. My father was muscular, stocky, and had steady, light-blue eyes, a direct, determined-looking Englishman, who left no doubt in the mind of anyone to whom he spoke, as I well knew.

"What is this about your reportedly having knocked my son down?" This was father's opening question.

"Well, ah - your son is noisy and mischievious, Mr. Fox, and - ah, we practice discipline in this school", was the reply.

"Well now, you look here, and listen, Mr. Denton. I know that Arthur has high spirits, and can be aggravating at times. But the kind of violence that you adopted is no solution, in this school or in any school. And I tell you here and now that I'll not tolerate a recurrence of such an incident".

(Denton) "Well, I-I-assure you, Mr. Fox, that it will not occur again".

(Father) "I hope it won't", walking out. End of trouble.

* *

When, with the passing of time, I finally entered Napa High School, behold, there was Mr. Denton as my algebra teacher! As he called the roll, he looked up quickly and thoughtfully as I answered to my name.

"Are you the son of the Horticultural Inspector?" (meaning Commissioner).

"Yes, sir".

Quietly and reflectively then, he murmured, "Fine.....fine". I never had any trouble at Napa High School.

It had happened that, on registration day at Napa High, in early January, 1917, I caught a brief sight of, but was unobserved by, my good old Dad, clad in his old yellow, rainproof 'oil-skin' overcoat, emerging from the office to depart down the corridor, his eyes facing directly forward. I always have believed that he must have dropped in for a brief, early word with Mr. Denton....

I ought to mention at this point that I was a rebellious youngster, deep inside, as so many are, but that this seldom came to the surface. I had been trained by my English parents to respect authority. And I did not choose to fight, or even to retaliate unless actually driven to do so. Yet I felt an enormous dedication to what I thought was justice. If I saw anyone punished mistakenly, that is, when the victim was guiltless, I felt rage. Especially so if, as had happened on occasion, I were that victim.

So I felt deeply gratified when a teacher, resorting to wickedness, had been given his due. And I felt satisfaction, after we had left Napa for Berkeley, on hearing about another incident involving the same unwise, hot-tempered principal who had knocked Art down years before. It seemed that he had undertaken the knee-to-chest, hand-to-throat routine once too often, and this time against the wrong person - Bill King, an old friend and long-time classmate of mine in Napa days. Bill had then found it necessary to administer a good old-fashioned lacing to the unwise principal. I do not remember whether or not Bill was suspended from school as a consequence. I should believe not, for there had been a classroom full of witnesses. Many of the students there had worn a bright coat-lapel button declaring, "I am anti-J. S. D. ", the principal's initials. Poor creature. He did not seem either to have learned self-discipline as a child, nor later to learn completely.

No discussion of my boyhood days in the town of Napa (then boasting to a population of about 7000) would be complete, not to say even morally proper, without mention of the outstanding influence in my life there, in the person of John L. Shearer, the principal of Central Grammar School. Mr. Shearer (known, of course, as "The Old Man", but not disrespectfully) must even then have been in his sixties. I never saw him attired otherwise than in a dark-blue suit, with vest and a black felt hat, off of which set off the attractiveness of his snow-white hair, light complexion and clear blue eyes. He walked with a long, determined stride, his posture always vertical as a pillar and his thumbs often hooked into the armholes of his sleeve-less vest. His authority was unmistakable, his voice loud and clear; his clear-blue, penetrating eyes could be frightening or most humorous and kindly.

Mr. Shearer believed in the efficacy of corporal punishment, and practised it personally when necessary. For myself, I never received more than one or two passing oral reprimands, always deserved.

When giving advice to a lad on the schoolground or in a corridor, Mr. Shearer would place a hand on the boy's shoulder, while looking directly into his eyes. His lectures and advice remained clear in our memories. I can remember his coming one day into a class of fifth-graders to advise them all on matters of personal cleanliness, adding that he had been aware, in that room, of an odor like "old feet", not "as sweet as the roses". His talk was succinct and to the point, and had followed upon some earlier, similar references by Miss Begley. Another clear memory is of a day when I stood talking with him in the schoolyard when a stray, hard-flung tennis ball bounced noisily from his shoulder. He did

not even flinch or wince, nor did his voice change as he continued speaking cheerfully on the subject, whatever it was; nor did he look toward the source of the stray ball; he did not even inspect his coat, or dust it off where the ball had struck. Control he had, and practiced it.

I felt respect and awe for his authority and knowledge, and a deep, boy's affection for the great man, who represented to me the finest example I knew, beyond my father, of fearlessness, humaneness and complete integrity on all fronts. I am only sorry that I never wrote, telling him something of what he unknowingly had done for the life of a boy who had come to know him, and never another like him.

It had happened that, as a babe, I had been baptized in, and made a member of, the Episcopal Church (or Church of England, as it was called), so to the church of that denomination it was that I was sent, once we had moved into the town of Napa. During our earlier years, out in the country, neighbors used to gather at one or another of the homes on Sunday, to sing hymns to Mother's organ or piano accompaniment, and to hear scripture and prayers read. I had learned some good old hymns as a consequence.

Well, so then in time it was natural that Mother sent us to St. Mary's Episcopal Church, there in Napa, where my younger borther and I attended Sunday School and where I soon was assigned the role of organ-pumper, for Sunday morning and evening services plus Thursday-night choir practices (sometimes very long, and always most boring) at a princely salary of two dollars per month!

There were occasions when, bored by the dust-dry sermon, I was deep into a book of fiction in my seat behind the organ, thus unseen by the congregation. And when the organist triumphantly attacked the keys for a blast of music at sermon's end, there was no air in the bellows. I had to be roused quickly, to apply the hand-lever.

On other occasions, perhaps during the sermon or a scriptural reading, I might notice the organist (a young and pretty lady) quietly practising her fingering on the silent bank of keys. A gentle blow of air into the bellows then evoked a noisy but very brief, impromptu obbligato on the organ, and sundry motions of heads and eyebrows, before my victim quickly withdrew her hands while glaring accusingly at the amused, cruel, adolescent trickster who was supposed to be her loyal, alert assistant.

Bill, the rector's son, was a cordial pal of mine, with a great sense of fun. He served as the cross-bearer, leading the choir procession in and out. His seat was in full view of the congregation and all the others, while I was concealed behind the far side of the organ, and thence could send tacit gestural, amusing messages across the alter area to him. He was hard put to avoid laughing aloud, and I recall one instance when he had to retire into an exit off the altar area, sharing my amusement at a visiting preacher who unfortunately whistled loudly through his dentures whenever he had to pronounce a sibilant.

I retained a tacit objection to the use of a single, large chalice for serving communion wine to everyone, as faithful partakers knelt at the altar. It seemed such a manifest channel for spreading common colds, to say the least. I recall indulging in certain wicked reflections; what if the old boy should trip on his long vestments and fall headlong during the service? Or what would he do were he to drop a full chalice of wine? Carry out some impromptu kind of charade?

The minister and I were not attracted to one another. He thought me too mischievous, troublesome, and easily amused, all of which doubtless was true; while I regarded him as dull, stuffy and humorless, save occasionally at someone's expense. But his son Bill was very different, and used to laugh convulsively when I delivered verbal imitations of his father. Bill and I were boy scouts, and used to go on daytime or overnight hikes together into the surrounding countryside. And I met him again, many years later, when both of us were in college at Berkeley. He had become rather a dandy, a kind of play-boy, but I still liked him, despite his drinking proclivities.

When, in the schoolroom, experience indicated that written notes, surreptitiously thrown or passed from originator to recipient, were thus exposed to the risk of interception, through a teacher's sharp eye, there were those among us who accordingly resorted to alternative means of communication with a friend seated too distantly for a whisper to carry. Thus a number of us learned to employ dactylology, the manual spelling of words or abbreviations of more familiar phrases, used by deaf mutes. While the two-hands method was perhaps a little easier to perform and to read, the single-hand system often was adopted instead, since this could be managed with the communicating hand dropped to a position near the lap, or down along one side of one's desk, thus less likely to be witnessed by the watchful, alert teacher. Alternatively, some of us learned the Morse telegraphic code of dots and dashes, and used thus to hiss messages softly across space. This method was more risky, however, since an extensive message thus transmitted was apt to arouse suspicion. Indeed, Miss Wright one day came

over to my desk, pinched my arm, and commanded me to cease a practice of hissing through my teeth and lips.

One sometimes wonders whether one's own boyhood face, ways and perhaps nickname must not surely remain in the memories of long-ago schoolmates in the same way as many of them persist in one's own memory.

At old Central Grammar School there were a number of characters whose visages pass before my memory's eye, and whose names and voices I recall as well, after more than a half-century since I've ever seen any of them. George (Bulldog) Vienop had a large head of blond, curly hair, and a huge, prognathous under-jaw. The features of his younger brother Willie, often called Little Bulldog, were less pronounced. Walter (Red) Norris, a tall, blue-eyed freckled youth with flaming red hair, was a quick-witted and irrepressively funny actor and imitator, who used to 'take off' Mr. Shearer, our Principal. Rubber (a contraction of Rubber-Guts) doubtless earned his cognomen through others' recognition of his giant appetite for food, although he was a thin chap. There was a shambling, husky-voiced, mental pigmy whose visage earned him various cruel nicknames, including Shovel-Face and Catfish, or more often the German equivalent Katze. Everett (Gopher) Grigsby actually did not look like a rodent, but was tall, good-looking and with a pleasant smile.

Waldo Malandrino, who possessed a vivid, inventive imagination, and who was one of the very few who spoke excellent English, used to tie me in knots with laughter over his suggestions of conceivable pranks to play on poor Miss Wright, whose lower lip protruded when her mouth was closed and relatively relaxed. Waldo used to conjecture on the coating of abominable objects with chocolate, thus disguising them as candy, and of then arranging that Miss Wright should be induced to sample them. Another of his excursions in imagination, indeed his favorite one, involved the idea of installing an owl, which was to perch upon the transverse length of stovepipe crossing the schoolroom; the bird was to remain sedate until the teacher should stroll directly beneath its high, unobserved perch, when her lower lip then should serve as a platform to receive a gratuitous contribution from above.... "But that owl-on-the-stovepipe.' I think that would be the best of all, " he used to muse.

One morning there stood, in the line of fourth-graders, awaiting the Principal's signal to begin marching up the steps into the building, a tall, well dressed young man, in neat clothes, including a new, wide-brimmed hat. He stood thus in a quiet, dignified manner each morning in with youngsters who looked to be not more than half his tall stature. He had dark, strong, handsome features, bore

the distinctive name of John Smith, and was a model pupil. He was a North American Indian, and quickly became known as "Indian", which he readily accepted. I never saw him behave in the loud and vulgar ways adopted by some of the others among his friends. I remember feeling deep admiration for a man who, having suffered a long delay in his formal schooling, willingly, and in a dignified way took his place in a line of children, to study of necessity at their level. I thought that his teacher might have had the consideration to let him merely walk into the schoolroom alone, whether before or after the little marchers entered.

Bulldog quickly adopted Indian as a friend, and they nearly always were to be seen together at school.

My musty little nook behind the church organ had a small window which offered a modicum of illumination for my sermon-time fiction reading, and gave me some opportunity to look upon and across a narrow little lane between the church wall and a wooden fence, enclosing the backyard of the place where, as I one day discovered, Indian Smith lived. I used to see him occasionally, moving about in and around his little domain, from my observation post in the sanctuary. But I never met his eye, for there was no way of my attracting his attention without making sounds which would have been foreign and unacceptable within my prison.

I recall one Sunday morning looking out to see Indian quietly and diligently at work, constructing a small device in the open yard to serve as a bird trap. It was merely a box, tilted up on a prop, designed not to injure an unsuspecting bird, but only to drop forward, enclosing the captive. I suppose that Indian liked wildlife, that his culture had taught him various ways in which to capture animals, and that he fancied capturing a bird as a pet. . And he manifestly liked to do things carefully with his hands. When the small box or cage had been completed, he placed a thin stilt of wood to support its raised side, tied a long string to the stilt, and led this through the sash of his house-window. He entered the house, and re-appeared with a few crumbs or a little grain, carefully sprinkling it about and beneath the raised trap, then retired again indoors. Presently I saw little birds arriving to inspect the new premises in a sly, watchful manner, finally venturing closely enough to snatch a morsel here and there. At such moments my glance caught the sight of the stealthy movement of a dark brown arm and hand behind the screen to grasp the string that would pull the trap. I believe, however, that the birds retired or finished off the food at a time when their would-be captor's vigilance had been relaxed. I had wished that he might

have made a capture, since he had devoted careful attention to the device, and I wanted to watch the sequence.....

Gooseneck (more often Geese) was a tall, dark, quiet youth with a rather long neck. Some of us were so cruel as to apply the name also to a very long-necked girl at the school.... Farmer was a simple, good-natured, clumsy lad whom his schoolmates likened to a 'hayseed'.

There were, of course, numerous boys called Skinny or Fat. Indeed I was one often called by the latter title, due to my physical profile, which, however, was far from equal to that of most others so called. I usually was called Denny or Foxy. My best friend in those days was another fairly chubby but husky lad, Earle Swift.

As I write these lines, there comes back to me an old rhyme, concocted by a schoolmate, and read aloud by him in the schoolyard. It went thus:

"There was a young fellow named Dinny,
Fell in love with a girl called Minny.
There was a young man named Earle,
Who also loved this girl.
So Dinny fell on Earle,
and of course he got the girl'."

I remember laughing at the jingle (I then knew no girl called Minny, else should have been deeply embarrassed), while Earle, with an expression of anger, grabbed the paper bearing the insulting words of the verse and reduced it to shreds. He just did not want his name used thus.... School days.

There were certain other, rather ribald verses, conceived by vulgar-minded schoolmates. I still laugh remembering them, but shall not repeat the words here. One dealth with

"Dinny Fox (what he did) in a box
And (how he then used) his old man's socks".

I was extremely shy of girls at that age, and would not even look at one if witnessed by friends watching me. But a friendly smile and greeting from one of the "special" girls would last me for several weeks, it seemed.

There were numerous children of immigrant parentage or rather peasant-like background. Understandably they were not affuent, and their clothes reflected their economic conditions.

One such lad at Central Grammar School (whom I once heard doing very well as an evening side-show barker) was an Italian whom we called Muzzio, but that was not his real name. There were a couple of tall, nearly adult Greeks called Agamemnon and Aristotle Mantiphunis. The former always was called Ag,

and it surprised him greatly one day when, challenged by him to call him by his full given name, I did so. "Frenchy" was of humble background, and I was of two minds about him. I liked to joke with him, but found him rather coarse in some ways; and I felt sorry for his obvious near-poverty. (We were far from being an opulent family, but it was easy to recognize many who were far worse off). I recall a day when Frenchy was being held by his poor torn old coat by Bus, a larger, rather bullying boy, who was delivering an accusatory tirade against him, loud and amid a crowd of other boys. I never knew what the issue had been, save that it involved a challenge about "one man's word being as good as two", but I felt sorry for poor Frenchy, who, finally released with a warning, stumbled away in deep chagrin and scalding tears as his sobbing voice mouthed imprecations against his torturer, whom he characterized as being God-forsaken, and of canine ancestry. Bus was not really a bad sort, and may have had cause for being angry, but I suspected that, had he not been larger and older than his victim, he'd not have molested him.

Fights between rivals sometimes were scheduled in an alley, after school hours. When Mr. Shearer heard of such a fistic combat he was quick to intercede, punishing those so engaged. I was once challenged to such a fight, which I did not want, but thought I had to accept, against a gopher-faced kid of about my age who had been picking at my patience for some time. After taking a couple of punches on my jaw, which hardly bothered me (but only embarrassed me) I closed with my enemy, seizing him about his skinny torso and pulling him to the ground, then leaving him. There were some taunts about my having turned a fist-fight into a wrestling match, but these quickly died down, and Bill and I were not enemies in subsequent days.

On the genral subject of being poor, I remember Glenn Chapman, our school's drummer who rang the school-bell and then beat time to our march into the schoolhouse. He was a quiet, well behaved, serious student. One day a fellow-student pointed out to Miss Christy the fact that Glenn was wearing socks of different colors. Whereupon, instead of ridiculing the informer, or at least ignoring the report, the teacher, apparently pre-sensitized to odd clothes, challenged the drummer loudly, asking why he was wearing unmatched socks to school. Glenn replied indignantly, for all to hear, "Because I <u>had</u> to! ". The question was loudly repeated, and the same answer more loudly returned. I thought that the teacher should have behaved with more restraint. Too much silly fuss was made over the attire of school pupils, often embarrassing them,

in their economic status. And I think that too much fuss over the same basic issues is made today. If the clothes and body are kept clean, what matter that some youngsters elect to wear certain loud colors, or even beards? Too much ado is made, although great extremes or actual bad taste should be interdicted for the sake of general, overall morale and example.

Still, as I've had occasion to tell teachers, people remember their good, fair teachers as well as their cruel or unfair ones, for the rest of their lives. I wonder how many poorly behaved teachers (and unfortunately there are such) may reflect on the length of youngsters' memories, and the special places that they are creating in those memories. Harsh words, cruel acts, and a dark glare of damnation are apt to leave indelible imprints, and may even condition one's mind against certain observed likenesses, names or phrases which constitute unintentional, innocent reminders of infelicitous chapters or vignettes in the long past. Each one of us has only but to think back for examples. Adults may dismiss certain failures in social decorum as being but examples of bad manners. But adults are capable of simply refusing to admit the misbehavior into their lives; or they can make rejoinders fitted to remind the misbehaver of his or her unacceptable deportment. However children, under the tutelage, guidance, or dominance of a classroom teacher, thus are captives for several hours each week-day, and cannot brush aside verbal attacks from a teacher. At least, not many can rise above it, although some of my children did rather well at it, so I thought. More than one of them I have known to elect working under a tough, even a rude teacher because of the individual's knowledge of the academic subject. But any who are both incompetent and unmannerly are hopeless banes to the noble profession.

Kindergarten and the following early grades mark intervals in a child's life wherein understanding, friendliness and tolerance on the part of adults are of paramount importance, and tend to help balance and shape the growing child's confidence and attitudes. It always is a great satisfaction to meet a superior brand of young person, whether in college or preparing for it, who expresses a resolve to become a teacher. They are urgently needed.

* *

A few miles south of the town of Napa was, and still is, the Napa State Hospital for the containment of people of seriously unsound mind. All of us were aware of this as a place to be regarded with mixed sadness, fear and curiousity (and sometimes with embarrassment through association of the name with that of

the town). I remember one old man who used to be allowed his freedom therefrom on Sundays, when he pedalled his bicycle up to town to attend Sunday School and church at St. Mary's Episcopal, where my younger brother and I went. He was most faithful in Sunday School, always knew the assignments, and each Sunday produced a 50-cent piece from which he required 35¢ in change from the collection plate. I suppose that the change bought him lunch. After Sunday School, he used to proceed into the church for the quarter-hour period before services should begin, to practise on the organ. After playing for a little time, he used to break out in a low, discordant, gutteral voice, along with his fingering on the keys. At such times, he stopped abruptly to scold himself aloud in a lengthy monologue, for having indulged in an impromptu, interrupting obbligato.

"Now you stop singing! Will you sing? Will you sing? I've told you this before! You have no voice, and you must not interrupt by trying to sing with the organ! Now remember that!" Thus the pitiful soliloquy would go on for a little; then the organ sounds resumed. The old fellow had to pump the foot-pedals himself, since the pumper (myself) was not, at that early interval, yet ensconced at the throne behind the organ.

He was a quiet, friendly, well-dressed old gentleman, but, I suppose, incompetent at times, and not safely allowed to live away from the supervised environment. We used to see others strolling about the grounds of the Hospital, or resting on seats, or even playing supervised, simple games.

But my first view of real and terrible madness was on one day while a boy, either bicycling or walking along the road toward the State Hospital (listed in the telephone directory as "Lunatic Asylum"). A speeding car passed, bearing an obvious patient destined for the institution. The poor woman was secured fast to a long, flat board, placed lengthwise within the vehicle in such a way that her head, with long, dark hair flying in the wind, rested on the portion of the board which lay upon the back of the front car-seat (I think). The terrifying grimace, with wild, dispairing madness staring out of the wide eyes, stamped a vignette into my mind's eye which has lasted for too long afterward. .....and I could not but reflect on the suffering that the poor creature must have undergone in her demented mind while she had to be forcibly restrained, strapped to immobility upon a hard, flat surface, then to be whisked away at great speed to a place of further, continued restraint among impersonal strangers and other mad people. What a hell of a fate, to be sure!

Specific, even isolated memories of events in the very long past have a way of suddenly invading the mind. Not that they necessarily are of recognizable importance, but there must have been profound reasons for the mind of a youth to have stored away certain scenes and words exceeding a half-century in time.

I suppose that I have continued to remember George Pierce chiefly because of his spoken language, which was careful, and because of the sudden, tragic death of his father, which drew forth my keen grief for him at the time. George was a lad whom I knew for perhaps no longer than a couple or three years during my grade-school era at Central Grammar School in Napa. When he arrived at the school, he presented a set of characteristics that placed him apart in my mind. Bright, alert blue eyes contrasted with the red color of his curly hair, and with the turkey-egg complection of his extensively freckled face. He obviously came from an economically underprivileged family, and lived in the Alta Heights district of Napa, south of the town proper.

But George had somehow managed to acquire, despite his surroundings, a deliberate manner of speaking, in very good English, thus in much contrast with the average vocal communication of the school-ground. I found myself liking George, and happy when he joined our Boy Scout troop, and went with us on camping hikes.

I happened to accompany him one day to the area where he lived. I do not recall that he suggested my going into the house to meet his parents, and I retain a strong impression that he and his father enjoyed anything but a close, cordial relationship. There seemed to be a scene of insecurity about the whole set-up. The neighborhood, as I am dimly recalling it, was dusty, trashy, and reflective of the assembled features suggestive of general poverty. I do remember George's father walking away from the house, and calling out, "Goodbye George". I remember later the time when word came out that George's father had lost his life, suddenly and violently. I think his death was effected by the action of another man who lived in the same neighborhood. And I've a general impression that there was a plea of self-defense involved, for I can recall no trial, nor even a continuing account of the incident.

One refrains, naturally, from opening the subject with a friend whose family has thus suffered. And I have long forgotten how the subject arose in a private conversation between George and myself in the dusty schoolyard one day, beneath the old, towering cedars. As I have mentioned, George's regard for his father had not been cordial, and he had, on previous occasions, levelled criticisms against him which seemed to be amply justified, supposing them to be true. Therefore he

could refer to the incident without the grief that I should have felt, in his place.

I think that the matter concerning the other man must have arisen. The other man, incidentally, was the father of a boy at our school. George remarked, with a steady look at me, and in his carefully measured, calm voice, "Well, you see, Dad was jealous of--- (giving the surname of the responsible man) on good grounds."

The calm, isolated statement, given me by a boy of about my own middle teen-age, was repeated slowly, so that I might not miss his meaning, although he did not mention any other family member. I was, in my deep feeling of pity, much impressed by my friend's calm, objective manner, his careful statement of the basic explanation, and his moral courage..... George and I were merely birds of passage, so to say, each in the life-calendar of the other. I never heard where he went. But he left me with the impression of a boy who, although poor in possessions and in home environment, possessed character and a determination not to identify himself with the seamy.

Some schoolday customs and expressions come to memory as these lines are written (or between irregular sittings to write). The head usually was covered, in contrast to the present-day custom. A hat commonly reflected a degree of maturity or sophistication (save for some old, greasy kinds), while caps of various description were far more common. If a boy wore his cap tilted well over to one side, he was regarded as a somewhat vain "city slicker"; but wearing the apparel well off the brow, toward the back of the head, or actually reversing the cap, so that the peak projected down, partly over the nape of the neck, was a sign of independence and general readiness. Black shirts occasionally were worn to school, but were not regarded as signs of affluence; rather the reverse.

As to schoolyard language, the all-too-familiar and unfortunate perpetual four-letter words had long been established in those days. But my grammar-school and high-school days, dating through the teens of this century, were characterized by certain slang words, of which a few come to mind. "Chicken" meant, not cowardice (which was "yellow-belly"), but a pretty girl, or "queen", while a "Queener" was a lad seen walking with her, and a "fur-foot" was such a lad who was expert at flirtational arts and at dancing. Anything good, acceptable, or desirable was the "cat's pajamas", while the reverse was "the rocks". A kiss was a "goober", even in those days.

As always, there were nicknames for teachers. "Pop" was, of course, common for elder, rather popular men teachers. I can remember a couple of woman-teachers of grammar-school days, who had respective secret nicknames

of "Buck-tooth" and "Grease-can". One man at Berkeley High who had a long German name was called "Beany", and a science teacher "Gee-hop" (with a hard G) for some reason, one being that he was supposed to look rather oriental, although he had a good Scandinavian name: a rather slow-moving, ponderous man, but good-natured.

A lady of very plain features and even plainer attire, who taught us singing at Willard School in Berkeley, unfortunately had a long German name that rhymed with "Yeller Horse". Consequently, she was thus referred to. I like the part-singing, despite her energetic prancing about and mouthing grimaces designed to suggest the words, gesticulating with arms with great vigor. But I was not interested in the writing of musical notes in exams, and received low grades in the subject.

Arthur and I knew another lady who conducted a dancing school, (where we attended dances whenever possible), who had facial aspects reminiscent of a cat, Consequently we referred to her as Grimalkin.

A somewhat effeminate young man at Cal., who entertained a unilateral liking for feminine society, had a kind of voiceless hissing giggle as his breath was rapidly inspired and expelled. We knew him as "the bicycle pump", or sometimes "the hydraulic pump" or "goofus-kapoopus". He must have told his mamma, for that lady, one day at a school gathering, loudly and bitterly denounced me for teasing "James". When she also included a girl-friend (Peggy) in her criticism, I felt my blood beginning to simmer, and turned away. At that moment my well-meaning father happened to stroll up, and prepared to introduce us. When she said, "Yes, I know your son. I have just been talling him that he is very insulting", my dad thought it a joke, smiling at it, as I turned and walked away. In a moment I looked around to see him also walking away from the vixen. I might add that I was about 19 at the time, while James was twenty-four. Old enough, I thought then, to have settled his own problems.

A short, stubby friend of mine at Cal responded to the name of Napoleon, and often adopted a fitting posture thereof.

I'm afraid that we had a rather cruel cognomen for a girl whose bodily contours, fore and aft, suggested the words "The meal-sack". She never was allowed to hear it, however.

Art referred to another girl, with whom he had a merely casual friendship, and only at dances I believe, by the unflattering name of "Clabber-Ass". I never discovered the reason for that nick-name, that I can remember. I do recall asking

Mother for the definition of "clabber", also of searching it out in the dictionary. I laughed aloud both times, and still do, when I remember it. I like the girl's younger sister better, as she was my age. But both of the girls had fairly sharp tongues, and enunciated their words in clipped, British intonation.

Why is it that our minds may retain the names and faces and even words of people long, long in our past, and not seen, while so many recently acquired details are so easily forgotten?

For example, as I lay a-bed before rising this morning of March 9, 1970, my mind, for some reason, reverted to scenes and people dating back to the years 1918-1921, while I was a student at Berkeley High School, half a century ago. Surprisingly, I found memory passing in review the names and faces of many teachers whom I knew there in those days:

Art: Miss Marshall; Miss Hereth (later Mrs. Goldsborough).

Civics & History: Mr. Grey; Miss Bennett.

Latin: Mr. L. R. (Pop) Smith; Mr. Coburt

Math: Miss P. Sittman; Miss Altucker; Miss Frank

Chemistry: Miss Roberts; Mr. Wheeler

Physics: Mr. Christensen; Mr. (Mother)Ames

English: Miss Henderson; Mrs. Wier; Mrs. Stone; Mrs. Rowell; Miss Hienz (speech); Mr. Dan Winter (Shakespeare)

Spanish: Mrs. Montgomery; Miss---

Physical Education: Mr. E. P. Hunt; Mr. Osborn; Mr. Hodge; Mr. Melnikow

Commercial: Mr. H. E. Longenecker; Mr. Blanchard;Miss McCullough

Principal: Mr. C. L. Biedenbach (A cold one)

Librarian: Mrs. Mathewson (a terrifying witch)
Mrs. Fanny McLean (?)

Mechanical Drawing: Mr. Stewart

My advisors: Mr. Longenecker (a dim bulb); Mrs. Hallet (lovely).

* *

I've just gotten a little ahead of this chapter, which I call

The Berkeley Dozen (1917-1929).

By the time that we had made the move to Berkeley, only three months after the U. S. had entered World War I, Arthur had been for some four years in Uncle Sam's Navy. My younger brother and I travelled as passengers in the moving van from Napa, myself squeezed into a front seat, and Ray (later called Jack) a-top of the load. We had left at about 5:00 am. m., and, as the sun rose higher, could see

the shadow of the travelling van, with Ray's shadow erect in a sitting position, indicating that he had awakened and was surveying the landscape as it changed.

Berkeley seemed big, varied and exciting after sleepy little Napa. Life went fairly evenly for us in Berkeley, considering that our country was at war. I finished 9th grade at Francis Willard School, on Telegraph Avenue (which still stands, 52 years later at the time of writing) in December, 1917, and then enrolled in Berkeley High School, whence I graduated with the Fall class of 1920 (actually in January, 1921, due to the hiatus of classes during the bad influenze epidemic of 1918).

I enjoyed some warm friendships in Berkeley days. Aftera year or two in the Boy Scouts, however, I felt drawn to what seemed to be more "adult activities". On Armistice Day (Nov. 11, 1918), a small group of us founded the Ace of Clubs, which, for the ensuing few years, offered some dozen or 15 of us young fellows much in the way of athletics, friendly trips, camping, social dancing and deep companionships....

But on entering college, or not long afterward, we finally decided to gather, one evening to formally disband the little society which had served us well in other days (see further).

On looking back, I regret to say that I never happened to find, at the schools I attended, a high-school principal for whom I could have a warm feeling, as I'd had for Mr. Shearer, of Central Grammer School in Napa. I've already written about the principal of Napa High at my time there. The one in charge of Francis Willard School in Berkeley, with whom I had in fact no real contact after my admission there, was Mr. W. B. Clark. Tall, spare, baldish, and of very few words, he usually looked, I thought, sad and troubled. A very sombre man he was. Mr. Biedenbach, the principal of Berkeley High, also was unsmiling, lofty, without a sense of humor, and unfortunately also without what we call the common touch. A man for no season, so to say. My one interview with him was at my own seeking and turned out to be unpleasant. I had confided in him, and he then had used the information as a threat of what would happen under proscribed conditions. I had expected some useful council. I never again sought him out..... But I felt profoundly embarrassed, and a sense of pity when, at one morning assembly, this unpopular man was loudly hissed by many of the boys, as he rose to address the student-body. I think that he must have known relatively few of the students by name.

But there was, here and there, a bright star among the faculty people, at both Berkeley schools that I attended. At Willard, the teacher whom I remember

best is Miss Christie, who taught us Greek mythology. Moreover, she did make us learn it, and no mistake! I am still grateful to her, after 53 years, as her alert, dark-eyed look and somewhat staccato, questioning voice serve memory's senses. And many characters from Greek Mythology remain as familiar references in my memory as well, from that fall term of 1917.

At Berkeley High we had good old Pop Smith for Latin, a subject that I always had enjoyed, and liked the more under his teaching. A dedicated teacher he was, and lived his subject. Short of stature, bald as an egg, vigorous, and ever proud indeed of Princeton, his alma mater, was Pop Smith. He had the eye of an eagle, and the roar of a bull when he wated to use it, and a delightful sense of humor. But nonsense in his class he'd have none. He came to expect well of me, and was most loudly irate with me one morning when I quite inadvertently translated the Latin word "Caesar" phonetically, and it came out "Kaiser", a very explosive mistake, for we were at war with Germany then. Pop would not let me explain that my error had been completely a mistake. He had mellowed, however, by next day. He used to bring a hugh bag of shiny red apples from his place, to pass around for us to enjoy. Pop....I loved the old boy.

Mr. Harry E. Longenecker, who taught penmanship and commercial arithmetic to vocational students, I knew solely because he had been assigned charge of the "home room" or "advisory room" for a contingent of the whole incoming sophomore class (boys). He was amusing, as was the delightful Mr. Smith and the puckish Mr. Winter who taught Shakespeare plays; but for different reasons. Mr. Longenecker, who was far from being an intellectual giant, was comical without intention. Tall, rather awkward, ponderous of manner, and a crashing bore, he received but little regard from the boys in "Third Period Advisory". They used to imitate his words, expressions and gestures; sleep, or read or converse sotto voce while he was trying to communicate the announcements of the day. He surely overheard an imitation or two in his time.

Mr. L. and I had a falling out, I regret to say, for it was my fault. I had some ability at graphic art, notably caricature, and at vocal imitation. I drew chalk pictures of both him and Mr. Christensen, the physics teacher, much to the amusement of other fellows. Also, I am sure that Mr. L. more than once became aware that my amusement was not through sharing his threadbare attempts at light humor, but in fact at his expense. He once overheard my unmistakable imitation of his heavy-voiced, general threats. His head whipped about, by which time I was seriously examining an open book. And there were other things.....He did not know what to do about me, and I feel no pride, but

somehow a lingering regret over having ridiculed one so sterile of wit in return. He told the Principal that I was "incorrigible", in my presence, on the occasion that I had sought out that gentleman for advice when Mr. L. had dismissed me from the room (for another student's act that time). I had not wanted to report on my classmate, so just said it had been accidental, but my words were not believed. I knew that my father would take me from school for a year were I ever to be suspended from classes.... hence my private visit to the Principal and my confiding in him, to no avail as it turned out. Mr. L. was summoned to explain, and at that time defined me as quoted. So home I went, and back next day with a promise not to knowingly annoy further. I had looked up the word "incorrigible", and received a shock. It had a bad meaning, and had been untrue. "Irrespressible" would have been closer to the truth.

The final blow came one day when Mr. L. stalked over to my desk, where I was reading, leaned over and said in a low voice: "You will be in Mrs. Hallet's advisory room from now on starting tomorrow."

"But why, Mr. Longenecker? I don't want to transfer. I have my friends here, and I like it."

"Well, you're going anyhow".

"Why, Mr. Longenecker?"

Frowning darkly, he said, "I guess you know, don't you?"

It was then that, in exasperation, I said the words that I ought not to have spoken: "I see. You find me incorrigible, Mr. Longenecker, so you are shoving me off on a lady, are you?"

His eyes fell, and he rather stammered, "Well, it may be - ah - that - you - you'll do better with her." I gave him some more of my opinion.

I had won the brief, verbal skirmish, but against such a dull, rather feckless adversary that I regretted my words. Later on I was to regret having been rude, having hurt him without apologizing.

Mrs. Hallet was a gracious, friendly and understanding lady, in whose advisory room I had no trouble, nor caused any.

At high school, as do most persons of the age, I began to associate a little with girls, taking them to parties, dances, movies and on hikes through the Berkeley Hills. I recall that it was in my latter high school days that I began to associate frequently with a sweet Anglo-American girl whom I shall call Peggy.

A bright, romantically inclined, popular girl she was, and a very graceful and versitile dancer. I was a bit on the shy side, save that I loved fun, and could

remain very active and sociable on such a basis. Neither Peggy nor I knew quite how to handle those gusts of mutual feeling of attraction which can overtake a couple of high-school kids with little warning. We never even had kissed (mirabile dictu, even in those days!) until I was into my freshman year at the University. We associated, off and on, each occasionally dating other partners, during about four years.

Then, one day, a letter in my box in Gilman Hall carried notice of her wedding! Truly, up until that moment I never had been able to forecast what kind of feeling might come to me, should I ever hear such news. And I was astounded to feel a tremendous sense of release! Free I was, at last! Our affair had not been very smooth, but a bit stormy at times, see. But more of such things later.

* * * * * * * * * * * * * * * * * *

I was not much of a joiner in the usually interpreted sense. True, I had belonged to the Boy Scouts of America from about ages 11 to 16, because I liked hiking, camping and outdoor life in general, and I enjoyed cordial friendships with certain of the fellows of about my own age. At about the time that some of us had outgrown our attachment to the Boy Scout troop, three of us decided, one day, to create an association of our own, restricted in membership to others who shared our own ideals and who could be voted into the organization unanimously.

The three of us were Dudley Kierulff, George Toll and myself, sitting around together at Dud's house on Fulton Street in Berkeley next-door to my home at 2607. As I mentioned earlier, it happened to be November 11, 1918, i. e., the date upon which World War I came to a close, as we were to learn later that day. On an original suggestion of my own, we decided to call our organization "The Ace of Clubs". We rather soon organized this body of youths, and used to meet weekly in a cozy room in the basement of Dud's house. We had special stationery printed, and purchased also from our modest treasury the formal insignia of our club, a little black, clover-leaf ace, with a white A in its enamelled middle, and bearing on the reverse side a locking clasp.

From what we learned many years later, the organization of a "secret society", select in its membership, of high-school boys, was illegal, and subject to punishment. But nought was known of such rules, nor came of the matter during those few years of our existence as a club. We had many enjoyable meetings, hikes camping outings in the Berkeley Hills, e. g., Wildcat Canyon, and we sometimes went with girls on double or multiple dates. We had a couple of dances in Unity Hall, at the Unitarian Church in Berkeley. And thus passed the days of the

Ace of Clubs' formal being. Later on, as I have mentioned, when all of us had graduated from high school and had gone our several ways, to college with various majors or special interests, or to work for a living, as some of the group did, we met formally one evening and formally dissolved the club. George Toll told me just recently (Dec. 28, 1969), nearly 50 years later, that he always had felt sad of our taking that terminating step, and that it should not have happened. However, the interests of the individual members had become so widely diversified that it had seemed inevitable that the club would cease to exist in any event....

On that same date, after a luncheon with George and Ethel Toll, Lewis and Floy Toll, Miriam and myself, at Rancho Bernardo in San Diego county, we looked at old snapshots of long-ago Ace of Club days. I tried to remember the old-time members of the Club. These are the names of the men who were boys together, whom we had known and loved a half-century a-gone. (Those whose names are starred were fellows for whom I had had rather special love and esteem:

*Dudley J. Kierulff
*George B. Toll
Denis L. Fox
Steen Magnus
*Jack Raymond Fox (my brother)
Lewis Toll (George's brother)
Richard Yarnell
Hawthorn Grady
*Howard Mitchell
Harmon Reardan
John E. Fant
*Fred E. Hurt
*Raymond Dougherty
*Donald Carey
*David Wilkie
Arthur Burch
*Don Collins (died in high school)
Clement Tays (slain in Mexico later)
Godfrey Damon

Student at Cal (1921-1925)

I had graduated from Berkeley High in so-called mid-year, January 1921, so decided to wait until fall term opening in August to matriculate in the University of California at Berkeley. After working about a month or so in a bakery in south Berkeley, I went to work on a farm up in Sonoma County for nearly 3 months, returning to Berkeley on July 2, in time to go on a two-week camping trip into Yosemite Valley with my unit in the California National Guard. Afterward back to Berkeley and into Cal that August, where I declared a major in pre-medicine.

As time passed, however, I found myself liking best, of all my courses, those in chemistry, especially organic, a field that I had begun to love deeply. Looking ahead into the future, with its certainty of a very long period of preparation, and very high expenses, were I to follow in medicine, all contributed to the

relative ease with which I decided to alter my major. I would graduate in chemistry, through which I could earn a good living as a chemist, perhaps then saving money to resume my pursuit of medicine, depending upon what the future might hold. And major in chemistry I did, graduating with the May class of 1925. What a day!

Among my memories of college days are what were called "College Nights", which were Friday night all-campus dances, with a full, attractive dance orchestra in each of three gymnasium buildings:Harmom Gym (men), Hearst Gym (co-eds) and Hearst Annex adjoining it. For a 15-cent ticket, a student could enter any of the three alternative places, dancing all evening. Moreover, one even could show his ticket-stub for migrating from any one to either of the other two dance-centers. What evenings those were indeed! I missed but very few, if any, unless there were an alternative date somewhere. And Art went as often as I did; we often went in together, and joined up afterward to discuss the pleasures of the evening, often over coffee and doughnuts or huge sandwiches at the Capitol Lunch Counter (called "Dirty Jack's" by the students) at University and Shattuck Avenues. We met some cordial girls through that social College Night function. One merely asked a co-ed to dance, and mutual introductions followed easily. College Nights indeed they were!

While I enjoyed feminine society, I was rather careful not to permit any girl to misunderstand me. I had no intention of becoming seriously involved in such a relationship. I refer not to sexual promiscuity. I had long taken a private vow against that. But I merely did not want a girl to believe me to be serious about her when I was not, but felt only warm and friendly in my sentiments.

True it is, however, that, were I moved to declarations of absolute candor, memory would recall certain instances wherein I sensed that, in the company of one particular girl, the ice that we found ourselves traversing was, to use a metaphor, a bit too thin. Fortunately our respective backgrounds, coupled with a certain idealism, and a degree of greenness in both of us, evoked, on each such occasion, a gentle and tacit return to terra firma before the ice should crack. Others, remembering clearly some candid vignettes of their own salad days, will recognize nothing very exceptional in these observations and reminiscences..... Many of today's younger generation, indeed, would ask, "So what else is new?"

But these reflections recall to mind a passing circumstance applying to this girl, with whom I had enjoyed a long and rather intimate and affectionate friendship (all in the acceptably conventional sense). One evening, on one of our walks, she confided in me, as a premedical student, the fact that her nervous, unsettled feelings derived from a rather protracted and worrisome interruption

in the regularity of her natural, periodic courses. I remember feeling very sympathetic and concerned over what I assumed (correctly, as it turned out) was an anaemic condition underlying the complaint. But, since I did not then know that amenorrhea or "dodged periods" were not uncommon among young females, I was worried lest she might have contracted some kind of infection. My predominant feeling, naturally, was that both of us knew full well that there had existed nothing whatever in our relationship that could have procured a pregnancy. And, while one never really can know with certainty that such a girl had not taken a risk with someone else, my private belief was that this one had not. It seemed, in any event, that the condition finally turned out to be merely a passing circumstance, attributable to an earlier unsuspected condition of mild anaemia. Sufficit!

I recall having taken a long moonlight stroll in the Cragmont area of North Berkeley one night, with Peggy. We were out very late, having spent a long period sitting in the shelter of a great boulder before we departed for home. It transpired that she had somehow lost an attractive ear-ring, and we had good reasons for suspecting that it might have occurred back at our rock. So I agreed to have a good look there on the morrow. But, not caring to take the walk along, I invited another girl to come along, "just for a little stroll out Cragmont way". As we approached the great rock, I became very thoughtful. I must make a quick but thorough search for an article which, if indeed there, I must, by all means, be the one to see first, and to recover quickly and inconspicuously. These thoughts raced through my mind as Milly chatted casually by my side. We came to the rock, and I halted, as though looking at it for the first time, but my searching glance was darting about at the base of its southern face, where Peggy and I had long sat the previous evening. There, in its bright colors was the missing ear-ring, which I seized and pocketed, but not quickly enough. Milly's blue eyes, limped and casual enough at all times, had been alert enough to witness my action.

The inevitable question arose. "Oh, it's just an ear-ring, belonging to someone or other," I replied truthfully. "Must have been dropped here," I added.

Milly took a slow step backward, her eyes on mine, taunting me merrily, her finger pointing at me. "You! You knew that it might be there'. That's why you steered our walk over here. To look for it. And you knew how it got lost! Last night, I bet".

I did not redden often, but must have at that time. I was non-committal in any response, and tried to pass over the matter. But Milly was a good sport. We were only good friends, each knowing that the other had a favorite elsewhere.

Milly's younger sister, Nickie, was something else. She was barely into her mid-teens, I suppose, and I paid little heed to her as a rule, when I called on Milly, or when a group of us students gathered there at their attractive home in North Berkeley. Howsoever, it developed, one evening, that I quickly learned that there was far more about Nickie than I ever had supposed. There was a group of perhaps four couples, and maybe one or two extras, sitting casually around in pairs on Milly's front porch as the twilight deepened. I did not know exactly where Milly was in the group, or with whom she might be spending the interval, and it made no difference. Or rather it did; for I found myself sitting with Nickie, and soon, somehow, reclining easily, sprawled out with my head pillowed in her lap—something that Milly and I never had done, and I doubt that it ever had occurred to us.

The little teen-ager caressed my head and face with her soft hands and arms, and accorded my eyes a long, soft look of deep affection. I never had known that she might have given me a thought, save when I had happened to be more or less in the way, so to say, and, in her opinion, preoccupied with her sister. Anyway, this was one of those rare, precious, surprisingly perfect, brief encounters in time. My initial wonder and surprise were overcome by a sense of peace in receiving a delicate, warm gift from someone unspoiled, and so shy in daylight. We did not speak, but I dearly loved something very sweet, that I knew was ours for but a few passing minutes. I think that someone presently called out that it was time to go in for refreshments, or something of the kind. And both of us knew then that this singular exchange of the eyes and the facial contact with hands and arms was about to be ended. I hesitated, then, "Kiss me?" I suggested softly.

And a warm, quick but sweet kiss it was then, and never to happen again between us. After all, I must have been 22, while Nickie, just emerging into a capacity for loving a boy, must not have been more than about 14, or possibly 15. Any further sign of, or reference to that little occasion would have spoiled its magic. There are some things best let a-be.

I always have thought that, when people have spent time together as cordial friends, or, when of opposite sexes, with affectionate exchanges, then, no matter how long each shall live, and for how many years each without sight or word from the other, nevertheless each has given, for all time, a little bit of self to the other; and each remains therefore forever different from his alternative identity had they never met. A clumsy sentence, but it will have to do. You who happen to read this will understand, in any event. Each of us is a unique person, and is permanently changed in some degree through having shared his being with another.

Thus I never fail to feel amusement, even to smile, when I see, through memory's eye, the tall, erect, watchful, sentry-like figure of Mr. Shearer, standing up on the top step, thumbs in armholes, looking down keenly at all of us pupils as we stand in parallel lines before him, awaiting the signal to begin our march into the school to the beat of the drum. Looking sharply over his glasses and out from beneath his broad, black hatbrim, he detects an irregular gesture or sign of conversation, always forbidden in the ranks of the line-up. His long right arm shoots forth, index finger pointing directly at the culprit; the arm then jerks back, the thumb indicating a site, over his shoulder, where the boy is at once to proceed, awaiting an interview after the masses shall have marched into their respective classes. An unmistakable, wordless command it was, portending an imminent, uncomfortable confrontation.....

The nod, the wink or the shrug, conveying a silent message across a room-ful of people, can substitute for many words about some mutually understood issue or long-past incident, often evoking a sense of amusement, conjoined with a feeling of companionship. The utterance of isolated, seemingly meaningless phrases, or a single word, or even a particular sound, may serve like purposes. Similarly with expressions of the hand, two of which Mr. Shearer used, and a number of others are known, such as approval, condemnation, dismissal, re-assurance, or contempt.

Cruel derision and practical joking do not vanish from among the recrea-tional activities of youth as this passes from the ages of puberty through adoles-cence and into maturity. The art remains practical, but is on an elevated level of sophistication.

Among the members of the freshman class at Cal in 1921 was a short, dark-skinned chap with a great mass of black, wavy hair and dark, large, intense eyes. Someone on the playing field nicknamed him Turkey, which he detested for some reason.

One of Turkey's difficulties was that he was extremely credulous, coupling this with some conceit and a lack of imagination or sense of humor. He possessed a great thirst for recognition and approbation. All of these qualities were quickly recognized and played upon.

On one occasion, when we had been assigned one of the abominated all-day military drills as an R. O. T. C. activity, several score of us were, during a rest-break, lounging on a sloping lawn northwest of the drill field, near Hilgard Hall. Someone shouted, "Emerson, the People's Choice"! , and the slogan was

taken up by hoards of others, nominating the fellow for a supposed high student-office. Turkey was forced physically to his feet, and a speech demanded. He started up with a few comments, looking intensely serious, but expressing little of any consequence, and being constantly heckled by the sprawling listeners. Presently questions were called out, to which he was expected to give wise answers. As may be imagined, the questions were absurd, for the most part. But Turkey took them seriously, tried to discuss them, and was interrupted by loud cat-calls or other more derisive sounds, thinly disguised as cheers.

Presently, tufts of earth-laden grass were tossed in his direction, but he kept on. Later, someone called him a derisive, vulgar name, whereupon he stopped short, at last suspecting that all was not well. He shouted out an inquiry of the crowd as to how many of them throught him a good fellow. A loudish, coarse yell followed from the assemblage. He then asked, "How many of you think I'm a ------ ---?" repeating the insulting epithet. A truly thunderous roar greeted this opportunity for voting. But, ever believing that no reasonable crowd could disapprove of him, the obtuse victim apparently took the sounds from the crowd as a roar of approbation.

Presently, as the far-off bugle sounded for re-assembly, everyone jumped up and some of them hoisted Turkey to their shoulders, to transport him, shouting his name, hence as he believed, triumphantly back onto the field. Instead, however, he was given rather rough treatment. The men carrying him (doubtless by pre-arrangement) were jostled and shoved violently, and attempts were made to trip them, as they and the pushing, shouting mass of uniformed consorts bore the now angry and hatless, gesticulating, indignant figure aloft toward the tributary of Strawberry Creek that ran through a large eucalyptus grove, wherein they intended to dump him. He was saved, however, by the final bugle call, when his bearers unceremoniously dumped him to earth after an initial, unsuccessful attempt to unload him into the creek. They all departed on the run to join their respective units, leaving the now thoroughly angry, rumpled little figure to straggle back, alone and ignored.

It seemed that he had not recognized the derisive mood of the crowd until, carrying him high aloft, with many a near-upset from the jostling they had borne him toward the creek and had attempted to throw him in.

"I don't mind a little fun!" he was shouting, "but when they try to throw me into the crick, that's carrying fun <u>too</u> far!"

But this incident was overlooked at a later date when a group of fraternity chaps convinced Turkey that a handsome fellow like himself should sell lottery

chances on a gift, to the winner, of a large photograph of himself. He actually did this. So the frat boys arranged that the Kappa Kappa Gamma sorority should hold the winning number at the drawing. Turkey was then easily pursuaded to take the prize personally with him, and make the presentation in person to the lucky girls, making a short presentation speech as well. This, amazingly to us, he did. The girls, earlier apprised of the whole rag, then invited Turkey into their house, where they fed him refreshments, danced with him, and carried out the entire act with great success.

Turkey was hugely pleased over the whole enterprise. The Raspberry, an interfraternity paper printed in magenta-colored letters, and issued at intervals, used to pan many customs and individuals, often with somewhat risque' distortions of names. I remember one issue of that periodical giving space to one Leon J. Emerson concerning whom we have just been in discussion. However, the 'L' of his first name had been replaced by a 'P', and the 'J' of his middle initial by a 'U'.

It seemed that some of the boys carried matters a bit far when one evening in Barney's Beanery, an eating house on Telegraph Avenue restricted to men students and other males, Turkey had been induced to rise and speak, when he received missiles of left-over food and unfinished coffee. When asked later on about the incident, his reply was, "Oh, the fellows were just having some fun". Yet he lost his temper if anyone said "Turkey". I often have wondered where poor Turkey landed, and at what occupation.. Had his life been delayed about 40 years, so that he had been on the Berkeley campus later by that interval, he doubtless would have found himself in his own element.

* * * * * * * * * * * * * * * * *

COEDS AND OTHERS

In the course of a four-year residence as a student in a coeducational institution, it is natural that the great majority of young people, maturing into early adulthood, will come into sundry enjoyable contacts with members of the other sex. These liaisons will vary in duration and in degree of mutuality of feeling between the partners. Mutual ripening into true and deep affection often will lead to marriage, whether after, or in the present day even before graduation. If, on the other hand, the degree of seriousness in feeling should have been largely unilateral, these conditions can lead to experiences of disappointment, often painful. But the degree and duration of such preoccupation with the circumstances will vary with any philosophical and resilient qualities which may be a part of one's general character.

There always will be some among us who, by disposition and through experience, are able to maintain a sense of balance and proportion, an acceptance of reality, and who achieve a degree of inner guardedness against the possibilities of suffering excessive disappointment, or alternatively, of causing this in the other person concerned. I think that a fair number of such students are fortunately endowed with a share of lightheartedness, without actually showing offhand behavior, and that they are able to be warm and cordial without being excessively sentimental.

This is by no means to say that one may, by act of will, avoid falling in love. For that event can overtake one without warning. But a modicum of safeguards can at least serve toward one's ability to discriminate between the real and the imaginary. Moreover, most of us discover that there is so much to be said in strong favor of practising and enjoying a plurality of these friendships in college.

Thus, in my own college days, while there existed an order of relativity in alternative or successive, private choices of partner for any given social occasion, I never seemed to remain an absentee for want of a companion. And friendships of the kind were enjoyable, easily encountered and required no commitments. I am remembering, in this connection, the attitude often expressed, and assuredly practised by my brother Art: "Easy come, easy go", he used to say. And, while he always had a vehicle of some kind, with its four wheels for reasonable transportation (enabling us to enjoy foursomes on occasion), his terms called for propinquity of residence, and he lost interest in a girl who merely lived inconveniently far away.

THE BERKELEY CAMPUS

Time was, long now a-gone indeed,
When up this very path I strode apace
On quicker steps than now, en route to read
(Mayhap, at times, to keep a warming tryst),
Or, in day's later hours, on the run
To join my team on playing fields hard by,
Where stand a-now these giant halls of lore...

In other years, withal, oft-times by night,
Proceeding toward yon noble tower's high clock,
Its face lit softly by Diana's rays,
I woke from reverie when its solemn peal
Tolled forth, for all to hear, day's final hour.

Hour on hour this chime has, through the years,
Tolled forth the passing days in all our lives.
Marking far, far apart one's student days
From present time, when all his working hours
Devoted are, to building on this house
Of intellect and wisdom for the young,
Who walk these self-same precincts e'en today
In search of goals we sought in yesteryears.

(December, 1965)

MEMORIES OF ARTHUR

Born you were, ahead of me, in the South of the Golden State,
While my life started in five years more, in Sussex by the sea.
Chagrinned you felt, as my growth seemed slow, and my first words spoke so late.
Yet you were my big brother, and meant so much to me.
And as we grew, I learned from you, to swim, and spell and read;
And the years went by until the time we three boys left the farm,
To reside in town, where our lives flowed on, in neither wealth nor need.

In schoolwork we were all so-so, and came to no great harm.
In college years it was, though , that we became such friends;
The courses and the classes shared, the dances, and the girls.
Great years those were, so long a-gone, and now my memory sends
Vignettes of you, your sparkling eyes, your laughing words and smiles.
Our children love your memory, and their young ones as well;
For you're ahead of me again, across the years and miles.

(September, 1969)

I am remembering one little co-ed, friendly and pretty, whom I must have met in some class, and with whom I used to enjoy walking dates, with much light banter but without any serious sentiment, at least on my part, and very probably none on hers. Among other traits of hers, she was very conventional and proper, and used to offer solemn advice or correction when this seemed to be called for. But I took all of this very lightly, and we laughed over many jokes. She was a rather able cook, as I remember from having escorted her to her lodgings occasionally and being then invited in for refreshments.

I can recall having quoted a few lines from an amusing stage play that I had seen, and that the quote involved a mild oath. When I glanced over for her merry reaction, she was looking rather like a sphinx.

"Amusing about that man, don't you think?" I then asked. Her reply was "But you didn't have to quote that part of it." New light, new knowledge'. We did not date seriously, as I've said, but I had taken her along one evening to a meeting of the Pre-Med Club. Later on, a short, stocky pre-med chap with a frank manner and a rollicking eye asked me, "Fox, who is that girl I see with you around campus?"

It was necessary for me to ask for further details. His reply, "You know, that little co-ed who always is bawling you out."

"Bawling me out?"

"Well, I can't hear what she's saying, sitting next to you, but it sure looks that way!"

I finally decided whom he meant, and probably gave him the information he wanted. So he continued, "Well why didn't you introduce me to her?"

"Introduce you? When?"

"There at the Pre-Med meeting the other night, where you saw me."

"Well I didn't know that you wanted to meet her."

"Didn't know! I tried my dirtiest! I was standing around, right close by, and you never gave me a look!"

I explained to my classmate that I hadn't noticed that he was there awaiting an introduction, and we left it that I'd repair the deficiency at the first future opportunity. Whether or not, in fact, he ever did meet her I cannot remember, for the young lady and I were merely friendly companions over but a few short months' total duration.

The Economics-major (or was it History?) I knew somewhat later, longer and better. I asked her for a dance at a language-club gathering one evening, and presently, as we danced, she asked "Your name?", and afterward gave her own.

She was pleasant, easy company, was practical, down-to-earth, enjoyed mirth, and was intelligent and rather interesting. Moreover, she enjoyed walking and other activities that I liked. I do not remember that we made so many assignations or formal dates as there were casual encounters between us, and spur-of-moment invitations to occasions of mutual enjoyment, often followed by her invitation to enjoy a snack in the kitchen of her apartment where she lived with another co-ed. This roommate sometimes tried to assume the role of a guardian over her friend's available time, but was a good dancer and "cozy" companion herself.

I could sense warmth in my friend's attitude and, as time passed, some increasing degree of mutual attraction. But I knew that I was not in love with her, and I never knowingly accorded her any sign that I was exploring for such a development. When discussion between us came to dwell upon the fringes of affection between people in general, and upon marriage, I found myself feeling somewhat wary, and somehow sorry about the feeling.

I recall one day, walking with her up Telegraph Avenue toward Sather Gate, responding in a rather joking manner to some talk about married people. "Well, " I said, "I hardly expect that there might be anyone particularly interested in me in that regard... I'm rather an odd number, you know. "

"Well, you'd be allright with me. I can tell you that, " came her immediate, calmly outspoken response.

This sudden, matter-of-fact display of candor afforded me a gust of truly mixed inner reactions. I was surprised indeed, naturally flattered, and still had some sense of warmth and camaraderie, but this was mixed with a rap of shoal warning, like negotiating a canoe into rapids. But one could not remain merely tacit after such a penetrating, forthright remark, and I think that I must have tried, perhaps rather lamely, to carry the discussion into safer avenues. One couldn't just say something like "Thank you", or "I am honored". For how could this then be followed up? I felt fortunate that the verbal sequence had not occurred, say, in some quiet nook, in an evening, rather than seemingly casually, there on the sidewalk as we strolled along among others, speaking in moderate tones. Not that the matter required any serious treatment, as one looks back on it, but it seemed very important at the time that no body should be hurt. And the alternative scene, had it evoked her same words, would have rendered further hurdles greatly more difficult in such an environment.

I felt happy enough, enjoying such high regard from a warm, sincere co-ed, but somewhat the more a-drift, since I wished in no way to speak or act in any manner which might deceive on the one hand, or give pain on the other. I truly

forget how I did finally resolve my response. I must, I think, have lamely resorted to a change of subject. Whatever I said, it must have been a come-down, under the peculiar circumstances.

In any event, long afterward, when I was visiting at her apartment one evening, she seemed very happy to see me, after a protracted period without seeing one another, perhaps indeed following a summer, when she would have gone home, away from Berkeley.

"But Denis, you're so different now", she remarked, more than once.

"How so" I asked, amused.

"Oh, I don't know, but you're just so very..... different. "

I cannot remember learning in what if any respect I might have changed. Some maturation on the part of each of us, more than likely. I could not feel a change in myself.

But I recall one of the latter visits we had together in her place, when suddenly she said, "You really hurt me once, Denis Fox, and I cried a long time over it. But you're never going to hurt me again. "

On that occasion, I was genuinely appalled. "How could I ever have done so? If I did, you ought to know that it was completely unintentional. Why did you not tell me at the time? What did I do?"

But I could evoke no more particulars as to time, place or incident, so eventually gave up. Still, we remained friends. Somehow I could not help thinking that the occasion which had hurt her feelings must have been that day, walking up Telegraph, when I had made light over her informal "proposal" or at least overture. But....what could a fellow say or do? I remember making a final call upon her one evening at the time that, a year or so after my graduation, I had become engaged to Rosemary. I remember her receiving the news with a smile, and then of feeling glad to hear from her that she and some young man were looking ahead toward similar plans. How sweet and lasting some of such college friendships can be, in retrospect, since they had their day in the lives of the principals, and, to some extent, altered lives. For the better and always.

There were, in the 20's, as doubtless there still are, a number of sites neighboring the University campus which offer varying degrees of assured privacy to students, whether keeping a pre-arranged tryst or migrating in couples for romantic communications and interchanges. The Berkeley campus itself, to be sure, offered numerous attractive looking nooks and other sequestered areas which could have been enjoyed similarly. But it was well known that, at any site, anywhere on the Campus proper, one or another member of the University Police

force, selected for their qualities of vigilance and insatiable curiosity, was apt to appear, quietly and suddenly upon any scene, complete with flashlight and a questionmark in both eyes and voice. As long as any couple actually were walking together, they were completely undisturbed; they might even stand, talking. But sitting on a bench, or especially on grass, seemed often to evoke, as by magic, an early official visit. The officers asked even men not to sit together on campus benches in the evening.

So the Campus proper maintained its quasi-monastic, nocturnal character. But other areas come to mind, such as the Bancroft Steps, a long flight of them, with resting platforms en route.

And Strawberry Canyon, leading from behind the Stadium back beyond the men's outdoor swimming pool and into the hills, was lovely and quiet. The upper rim of the Stadium offered some attractions, but, again, it was on University property, and was patrolled. One minor advantage may have resided in the fact that a cruising officer covered that area by car; therefore his approach could be anticipated, and any people whom he saw were walking together, of course. There were occasional cars not carrying officers, which led to passing confusion. On the other hand, drivers of such cars usually were not alone, and were sufficiently aware of police policies not to park in the area.

Live Oak Park, some blocks north of the campus, was another favorite place. It had a small branch-library, tennis and basket-ball courts, swings, and separately a beautiful area of lawns, trees and a creek, crossed in several places by bridges. However, Berkeley police sometimes included Live Oak Park in their patrols, and I recall a night being asked to leave, with Peggy, by an officer who persisted in his belief that both of us were too young to be sitting in the park.

A better place was an old, neglected orchard, across the street from Live Oak Park. This little tract was entered, from the Walnut Street side, by ducking through an inconspicuous, low gap in a thick cyprus hedge. Or, from Oxford Street, we either passed through a small gate, which led into the orchard part, or dropped into the little wooded section from a sitting position on a high, concrete bridge-wall, down onto the slope above the wild section, bordering the little creek. Peggy and I used to go or to meet there in our salad days, on long, summer afternoons; and sometimes written notes were left there, concealed in certain sites. But I did not continue to visit that spot often after I had entered college. It long since has become populated by dwellings and gardens.

I remember being told about the Bancroft Steps, and of affording my informant some surprise by my admission that I'd not heard about them. My earlier lack of acquaintance with the well known haunt was readily repaired, however, and this was a pleasant alternative, if one happened to be in the vicinity... Oddly enough, although memory serves me reasonably well in some particulars, I have forgotten who it was who first told me of the famous steps, or with whom I ever visited them, although I was there more than once. Not that it makes any difference now.

Memory can suffer some inaccuracies as to timing after nearly a half-century's elapse. But I am remembering quite clearly the so-named "College Nights" of the mid-1920's, while I was an undergrad at Berkeley, and my part-time job, during several years, in the Chemistry Department there, working for good old Mr. Cooper. I can recall also several fellow-students who worked around there at the same time as I did, sometimes sharing tasks. Among these were a few girls (including those in the women's Chemistry sorority, Iota Sigma Pi, who used to sell pie to us) and who made life around the labs a bit more fun. One such co-ed had acquired some reputation for a critical attitude and a sharp tongue. And while there was some basis for such views, the girl had attractive features, notably when her expression rarely softened, relieving the sharp look too often there; moreover, she possessed an attractive figure, if somewhat above the average height for her sex. It happened that she and I were assigned jobs to do which placed us in the same or neighboring quarters and labs of the Old Chemistry building (now, alas, long since torn down). This was in 1923, almost certainly the summer of that year, before the great Berkeley fire that was to follow on 17 September. I was approaching 22, and she was 23. While busy in the same room, I was able to discern that there were sundry potential attractions, beneath an outward steely look and personality that must reputedly have turned away many possible dates.

I tried to minimize references to subjects that might evoke the recital of hypercritical salvos, and to turn off conversation that seemed to be leading in such directions. Eventually I sensed a few signs of friendliness; not that she had been hostile toward me, but only perhaps impersonal. One day I mentioned the general subject of the College Night dances, and my custom of attending these functions. This evoked an unexpected spark of kindred enthusiasm for the sundry sources of pleasure to be enjoyed on such occasions. So I think it was then that I suggested her accompanying me to such a function during the same week, doubtless a Friday night. (I remember this kind of thing because Mother, once imitating my

"spoonerism" about College Nights, asked, "Is this a -what you call a "Know-ledge Kite"? To which I had replied, "No, they come on Nigh-day Fright".) The invitation was readily accepted. And here, it turned out, was another co-ed with whom I could enjoy some companionship. Again, it was not serious, nor binding on either part, but only warm, mutual recognition that it was pleasant to dance together. I think it must have surprised some friends to see us together, for many of them did not know her more submerged side. In any event, I dis-covered that this young woman, while rather prickly, quick and sharp of tongue, and not given to any sentimentality (and with whom I never exchanged a sentimental or even a flirtatious word) had some remarkably warm and affable feelings. She enjoyed dancing, and danced very smoothly. She told me that I was a good dancer, to which I replied that, if so, it was because I had such an excellent partner. She used, also, to do some things that I could not recall any other dancing partner doing; for example, I often perspired freely about the forehead while dancing, expecially on a warm evening in summer; whereupon, quietly noticing this, she wordlessly, gently and often wiped my steaming brow with her kerchief.

I was not fancy in my steps, but was fairly light and active on my feet, and often vigorous in executing dips, whirls and reverses. The whirl entailed an extra-firm grip of one's partner. It was in this and other circumstances that I experienced an immediate, strong and enthusiastically sustained response from this partner. There was never-failing reciprocity of this kind, with enjoyment of certain warm, wordless exchanges of feeling. But on no occasion could I ever hazard any words to accompany or follow-up such moments. It could have spoiled the evening, since she did not, I thought, know how to employ gentle speech, although she could smile cozily. But each undoubtedly knew that it was not an in-stance of love. Rather an odd reversal of the usual sequence in such companionship, since at least a few endearing words precede more substantial demonstration. As I say, we were not serious, but only tacitly very appreciative of each other's complementary attributes while together under the special circumstances.

It would be my hope that, should these somewhat rambling memories attract the reading of others beyond my own family circle and perhaps a few in-timate friends, there might not appear to be any passages reflecting undue pride or self-advertisement on the part of the autobiographer, but rather an abiding sense of gratitude for having known so many fine friends during all of my life. Some of these have died, while many more have gone along their own roads, as have I, since the days when our paths crossed. This, fortunately, is life. The memory of friendly interludes is precious. The moving spirit which has prompted

me to undertake the writing has had, I suppose, the dual aim of setting down somewhere the record of may life, or rather, parts of it, in some perspective. This not only that I may view again the scene, but that others who might read the chronicle might thus have the option of knowing the writer better; and that even I myself may somehow improve this same acquaintance, through the very act of re-reading.

I have assigned some considerable space to the remembering of old friendships, with members of the fair sex as well as with other men in college. And I had far more men friends than girl friends. I tended to treat co-eds in a friendly, rather informal manner, for I was indeed no "ladies' man" in the commonly accepted sense of the term. I never could, even had I been of a mind to try it, assume the front of a dandy, with all the courtly flattery and flirtation involved in or connoted by that term. Compliments came forth, easily and naturally, concerning attractive features of countenance, attire, achievements and adaptability in social dancing and the like. Also, I can recall numerous incidences of expressed reciprocity in such sentiments. Always a boost to a young fellow's esprit, of course. It was natural that, on certain more cozy occasions, such exchanges of warm and cordial regard were transcended or substituted by non-verbal expressions of mutually enjoyed close companionship..... Likewise a contribution to one's sense of general adequacy and self-esteem. Peaceful, halcyon days those were, as one looks back, viewing them through a screen or veil that filters out any infelicitous chapters or vignettes.....

But I did not, nor could I, engage in the "exploits" practised and even afterward discussed by some fellow-students. For one thing, I had an inner sense of relative shyness and some restraint concerning any such potential opportunities. I am sure, indeed, that the event of any invitation to participate in close intimacy of sexual exchanges would have been alarming. Not that I lacked any of the normal urges that might lead a young fellow in such directions, but I had received in my home, by tacit example and by absorption of principles, a training in the attitude of general integrity and of adherence to certain values.

There was, to be sure, the rather protracted and recurrent on-and-off affair with Peggy, in whose company I had come to feel that the ice was at times a bit too thin. But as I progressed in the academic life, a way that she had chosen to abandon, and as I met other girls, Peggy's life and my own interests drifted more and more widely apart. We each endorsed a different set of values.

Hence when, in my junior year, by which time I had come to know and to enjoy the company of, several other friendly girls, the final eclipse came through

Peggy's marriage, the 'buffering' against any resulting shock had become complete. My own sense of relief surprised me.

I think that I saw her not more than three times during the years that followed. And of those occasions, only twice to speak to. On the final occasion, back in the latter twenties, when we encountered each other in Berkeley, I was either married (to Rosemary then) or progressing toward that status; and Peggy said that she had been divorced, and that she was soon to be remarried. And so the earth turns, and the finger writes....

But there again, I always have felt that friends, or those who once were friends, should retain a sense of lasting gratitude for such opportunities to have given and received injections, to greater or lesser degree, of something into his or her life which can made each concerned individual a little better, wiser, happier, or more understanding and tolerant than had the path of the whole scene led elsewhere. I have received, in these latter years, comments from former students, alleging that something done or said or represented by me has come to exert profitable influence in their own lives and memories. A professor, especially an emeritus, cherishes such testimony.....

Such are a few of the diverse scenes from my youth. They are, in perspective, mostly vignettes of happy circumstances and of maturing development. I can indulge in these long looks backward in time without any wistfulness, any deep, insistent wish to tread again the scene. On the other hand, I can enjoy greatly the remembering, and the general setting into place so many of the people, the affective relations and experiences, and the ideas that came into my life in those other days, there ever to remain and to take their appropriate places in the overall course and pattern of living, thinking and feeling. And, while not a blind adherent to the motto of the sundial, "Horas non numero nisi serenas", I can, I think, reflect, in self-candor, that I have no serious regrets or sense of abiding guilt over past unhappiness that I might have brought to others. I have to confess to a degree of wilfulness that characterized my boyhood days, and later perhaps an overdeveloped spirit of independence which doubtless led to thoughtless words and acts. A somewhat combative attitude led at times to tart retorts against a verbal salvo of unfriendly color. But overtures of cruelty were anathema, and any sharp words that I may have used against a friend I quickly regretted, and said so.

My late mother, my wife and each of my children, as the latter grew, have shown exemplary behavior toward others, even under sometimes trying circumstances. And I have found myself to be deeply appreciative of that refined quality. Envious perhaps at times.

An excessively harsh remark uttered by me against any of my children in exasperation or impatience, but evoking no sign of a retort, or even notice has, on long past occasions, drawn from within me feelings of deep regret and of profound admiration for their self-restraint. How well I recall that dear and wonderful late son Steve who, as a high school student, had evoked for some minor reason a short tirade from me. Steve was quiet after my ill-conceived salvo, walked slowly and respectfully toward the piano, which he played beautifully. Gently seating himself there, he waited quietly a moment in case I were to say anything more. Then he played "Lock Lomond", quietly and beautifully, for all to enjoy. The silly anger inside of me dissolved, giving way to repentence and love.... My wife and children always have been readily forgiving of faults in those whom they love. And in people generally, for that matter. Even some rather cruel-mouthed teachers.

* *

More vignettes of Academe. Into and back from Industry

It was rather gratifying, as well as being a source of welcome revenue, that I encountered, during my middle to latter undergraduate years at Berkeley, some opportunities to do a little teaching. My first such experience arose when, on the recommendation of my good friend Herman Ramsperger (then a graduate student in Chemistry), I was invited to review beginning chemistry to a group of young fellows desiring to prepare themselves for entrance exams given by the University. A young man, Mr. Reading, conducted the Campus Coaching School in a small, older building on Telegraph Avenue, near Sather Gate, the chief southern entrance to the Campus. Students wended their way there to receive coaching in certain subjects wherein they felt such help was necessary. As wide a variety of subjects was covered there as Mr. Reading could find mature, able students to offer, at a cost of $1.25 per hour to each student, back there in the twenties. Of this hard-earned fee, paid by the aspirants, the instructor received a dollar while the School retained the quarter.

I can recall that my first students in beginning chemistry were a group of four or five, with whom I met a good number of times. It happened that my younger brother Jack needed a review in the subject as well, so it was arranged that he be allowed to sit in my little course, as a non-paying auditor who would

not consume any of the class time with questions, thus leaving all such opportunities to the paying members. Of course further discussion of the taught subject could and did take place afterward, outside of the class, when Jack could ask his saved-up questions.

I can remember now gratifying results from that early teaching experience. In the first place, I think it is correct to say that all members of the little group successfully passed the entrance exam in chemistry. And a friend of the family, a lady who happened to be employed in the same building, as a typist for students' theses, term-papers and the like, told me that she heard Mr. Reading say, "That man that Ramsperger sent us is good". It was pleasant, walking down Telegraph on those summer days to meet students desiring to learn about a subject that I could teach to them, and I derived lasting satisfactions from the experiences at the little coaching school. It continued for many years, carrying on the good work that had begun not long before I taught in it.

Beyond and independently of Mr. Reading's school, I used to be asked by other students, here and there, to help them toward a better understanding of organic chemistry, a subject which had turned out to be my favorite and major study at Cal.

I did not charge such fellow students any more than the standard rate, and very probably not as much (I think I usually accepted a dollar per hour). Some of them I knew as friends or classmates, and I knew, also, that most of them were under certain economic strictures, as I was myself.

One such fellow was a very dark, pleasant, serious Indian student, Ali Mohammad, whom I coached for a number of sessions. He graduated a couple of years later than I, and worked as a chemist. I believe, indeed, that he later returned to earn his doctorate. But I am writing of days some 46 years ago.....

Another fellow-student whom I coached in organic chemistry was actually a classmate. And how regretfully I had to accept the payments that he insisted on turning over to me, for Bill ("Red") Warren earned his way through college partly by serving at the counter (slinging hash) of Barney's Beanery, just outside Sather Gate on Telegraph Avenue, outside of which lunchery there always stood Barney's black mongrel "Adenoids". Moreover, Bill many times served me food there, so I was keenly aware of his economic status. Still, I belonged to the same class of hard-up undergrads. Barney's Beanery which served only men (due to the unrepressed language and general behavior that characterized that

free-and-easy joint) has long gone, alas, as have its quondam neighboring enterprises at that end of college town, since the University has had necessarily to expand with the times and the increasing numbers of students. Lank's Lunchery; Jim Davis's sports shop; Snort Wimstead's men's haberdashery; the tailor shop of our good old Jewish friend, Meyer Monasch; "The Varsity", where I used to take a girl occasionally for an evening of dinner-dancing, are some of the other places formerly located in that same block....

In later years, while I was a graduate student at Stanford, in about 1929-30, I used to coach medical students in biochemistry, besides teaching it in the laboratory there. Again, I did not search out the students, nor like taking their money, for I knew and taught several of them in lab class, and reflected that they should be learning the subject adequately there and in the lectures by Professor J. Murray Luck, my research supervisor. I had in fact discussed with him the question of any ethical features that might be involved in my acceptance of my students' request for outside teaching, and for fees. He was a good Quaker, and replied that he saw nothing wrong in devoting my private time, beyond class hours to earning something from students who were requesting such help. I always felt gratified if what I had taught really helped students along.

At the lower end of the academic spectrum were the college freshmen, to whom I was a teaching assistant in general biology. That experience provided its own benefits by way of a review, as well as some financial help.

Upon graduation from Cal in 1925, I took a job as chemist for the Standard Oil Company of California, located at Point Richmond, about a half-hour's drive from north Berkeley, where I lived. Several of us went to and from work in car-pools, sharing running expenses. It was natural that I should learn much about the chemistry of petroleum and its various products, and about numerous features of its industrial processing. But I discovered well within a couple of years there that I did not prefer to work solely under a boss, doing the experiments suggested by him, especially if I were already doing something else that had become interesting, and when I had begun to think that I knew better things to try. Moreover, one could recognize that any ascent up the hierarchical ladder within a large company was bound to be slow, and likely under certain kinds of political control. I did not have any taste for currying favors. While with Standard Oil, I did work out a patentable idea, submitted it, assigning rights and profits over to the company, as was required of employees, and, some years after I had left the

company, was gratified to receive a copy of the patent. I do not know whether it became applied for practical purposes, but the process made use of two waste products: excess sulfur dioxide from the SO_2-treating plant, and nitrogen bases present in cracked naphtha, which were being discarded with the sludge resulting from treatment of the crude distillate with concentrated sulfuric acid.

While I was employed at Standard, there was a rather serious slump in employment out at the refinery, and a great many men were laid off, which spread a sense of uncertainty through the employees. Fortunately none of us in the research labs were laid off at that time. But there were several sudden discharges of long-time employees who were discovered to have taken pure alcohol from the stores. It was during national prohibition, and theft of alcohol was a serious offense within the company.

I can recall a day when the head of the Research and Development Division, wherein I was employed, called me into his office and quizzed me about the possible theft of alcohol, since the store of it was under lock in our lab. He was very serious, and added that, if I knew anything, it was my duty to inform (not to use a stronger term). As it happended, I did know of someone who was stealing pints of it occasionally. A man in the same lab, who was quite unpopular, and whom I could not like for many reasons. But I knew that I was not going to inform on him. I simply replied that I was hired there as a chemist, that I did not practise trying to observe the personal ways of others, and the interlude ended.

The boss had warned me, however, that, if alcohol were to continue to disappear in and around the Divisional labs, the natural question that would rise would concern "what Fox might know about it", since I was close to the storage-cases. I replied that this would be natural, but somewhat ironic, since it happened that I never used alcohol in any way, outside the lab, when needed. I've always thought that he was trying to get me to report on someone that he already suspected (and rightly), and that he pulled out the other stops when I was tacit about any observations. In any event, I talked over the problem with a man I could trust there, telling him privately the facts. He thought I should perhaps make certain dated notes of anything seen, for private use should my name come up in connection with alcohol disappearing. This I did, in an abbreviated code readable only by myself, in the flyleaf of my lab notebook..... Late on, when leaving the Company's employ, and being required to leave with them all my notebooks, I obliterated the coded observations of my colleague's infractions, by covering the page with ink, which was allowed to dry.....

I must say that the culprit was very cautious and clever, operating at times and in ways conceived by him to allow minimal likelihood of being apprehended. He used, for one thing, to leave an unlabelled pint of the ethanol out on the lab bench, among a lot of other glassware, hence quite inconspicuous; it would remain in the same position sometimes for days. Then, one day, when all were closing up shop for departure, he would quickly look about the lab for any eyes, and smoothly drop the pint bottle into his briefcase. I am not proud to admit that, once I felt constrained to do a bit of spying. For I had to establish final proof of the source of the thefts. I was satisfied personally as to who was the guilty party, but were the question ever to arise formally, and with any suspicion directed against myself, it then would be essential that I be provided with absolute, first-hand knowledge to the contrary.

So late one afternoon close to quitting time, I arranged a small inconspicuous rectangular mirror, propped vertically within the recess of a chemical shelf at eye-level. Holding a small graduated glass cylinder before me at eye-level, as thought inspecting its fluid contents, I was in reality watching, via the mirror, the man behind me, at the far end of the room, perhaps some 30 feet away. There had been the pint of alcohol, in an unlabelled bottle (!) sitting there among other containers and equipment on the desk-top for some days, as I had ascertained at each day's end. In the mirror I saw my colleague go to the critical site, quickly look around at me, turn back to the bench and place something into his briefcase which he always carried. When he then quickly left, so had the bottle. One of the other chemists, working in the same lab and under the same person, also had made certain observations, and was aware of the irregularities.

It was too bad about the man. He was good-looking, dressed well, was well educated and an able chemist. The snobbery that characterized him might have been overlooked, but the real flaws in his character were his habits of prevarication and dishonesty. He and some others of us had our occasional difficulties, and more than once I was very candid with him when he had put me under pressure. Thus he learned that his words were not always to be believed, and he learned also that I knew about the alcohol, for one day when the whole matter had become acute, I had to tell him that if ever I saw alcohol taken from the labs, I should report the incident. He replied lightly that he would do so too. Later on I told him privately that he had taken away alcohol in the past. He remained silent. I am certain that he must have been relieved when, months later,

I announced my coming resignation from the company to return to grad school. We never could be friends, but at least greeted each other politely on such rare occasions as we met afterward. I remember a fellow-chemist and myself looking one day out of the lab window at the man of reference passing by. My friend remarked, "Too bad about him, you know. He really could have turned out to be a nice fellow if he hadn't a few serious faults in his nature". Too bad it was.....

As I look back to Standard Oil days, there is nothing very special to chronicle from those four post-college years in industry. Save that they were, in general, good years, wherein I learned some things about industrial chemical processes; also, which always is most useful, ways of knowing and of working with other people from many different backgrounds and viewpoints.

Actually, while farther back in times, my college days in Berkeley carry more special memories. There was, for example, the little episode, witnessed by my brother Art, when all of us freshmen, who had taken the entrance exam in English, were lined up before the booth whence returns were being handed out. Art saw one gangling Japanese aspirant leaving the "window of decision" hailed by a fellow-countryman who still stood in his place in the long line. "Wha'you get?" asked the voice from the queue. "Eff!" pronounced the victim loudly, with a toothy grin. "Oohh!, Putty good! You do putty good" recited the unquenchable optimist.

I received a C grade on my entrance English exam (after having high grades in high school) while Art, who was 24, and many years out of school, including 6 years in the Navy, received a B! We had a good laugh over it. My grade was very fortunate for me, as it turned out, for, on a consequent assignment to enroll in a beginning, 3-unit course labelled English 1-X, I happened to enter a section taught by Professor Thomas King Whipple, whom his colleagues called "Teke" for his first two initials. A tall, rather gangling but charming fellow he was, with a delightful sense of what was funny. I profited greatly by that semester under Teke, and as a consequence sought out his section when enrolling for more course work in English.

I have ever remembered a remark that Teke made to us. He was telling us that we acquired increased vocabulary chiefly through good reading, and he added, "...and you keep a dictionary at your elbow. When you encounter a strange word, you leave off reading for the moment to look up the new term in the dictionary". Then, after a brief pause, he added, "At least, that is what you do if

you have sufficient character." True enough!

Joel H. Hildebrand (a healthy man in his late 80's when this was written late in 1970) was a really outstanding teacher, from whom I received lectures in freshman chemistry. He made the subject living, exciting, and attractive far beyond the classroom.

Charles Walter Porter (also now in his late 80's) taught me my first organic chemistry, and was inspirational for his quiet soundness and his great store of knowledge. Gerald E. K. Branch (Gerry) and Thomas Dale Stewart ("T. D.") were other organic chemists from whom I received valuable instruction, and whom I greatly admired.

Charles V. Taylor, from whom I received lectures in the first course in zoology, actually played an unexpected and major role in my ultimate return, to take up graduate status in biological sciences. By that time he had moved over into the faculty at Stanford University, where I ultimately followed, after my four years with Standard Oil.

I played some soccer while a freshman and sophomore, and was on the Varsity squad latterly. But I was not a fast runner, so played left half-back. I could not continue with athletics later on, as I needed to work during non-class hours in order to help pay my way along.

For about a year I had a room, rent-free, in the Old Chemistry building (since, alas, taken down). In return for my room, with light, hall-telephone, shower and gas included, I was to supplement the nightwatchman's duties by cruising through all laboratories and hallways of each floor, seeing to it that all flames were extinguished (i. e., no lighted burners), no water running, all street-doors locked and all in apparent order after 6 p. m., before the watchman was to arrive, but after the departures of all janitors. I was also to make another tour through the same varied territory later at night, before I retired. Those duties I followed out, carrying an electric lantern on my late-evening tour.

There were several students thus accommodated in various buildings on the old Berkeley campus. One other man lived across the hall from me in OldChem. However, a report was made that at least one chap holding such free-lodgings in a building had abused the privilege. That is, there had been one or more girl-visitors involved, which shocked the fastidious. So the policy of allowing students to reside in University buildings was abolished, and the innocent had thus to suffer along with the so-called guilty. Guilt of sexual promiscuity was, to the best of my

memory, not proven. Perhaps the mere romor was sufficient to trigger an action long earlier contemplated. Anyway, we freeloaders were in no position to bargain, or even to argue. Ours but to vacate!

One incident occurred, during my residence in the room in Old Chem that could well have cost my life. It related to the escape of ordinary cooking gas, through a night-time splitting of a rubber conduit leading from the intake pipe, supplied with a turn-off valve, any my small gas range that I used for cooking.

It was in the spring of 1924, just following the maximal rainy season. I therefore happended to have one or both of my only two windows partially open, since there were then no cold, wet prevailing winds to bring in a chill. And this circumstance was fortunate, since else the gas which escaped during my sleep might have reached lethal concentrations within the room. For in those days the city gas supply to all buildings contained a minor percentage of carbon monoxide, odorless and not perceived as such.

I recall dreaming of having had to steam-distill a batch of dark, ill-smelling analine, which afforded a persistent, penetrating odor, while the overall operation gave off a constant hissing sound. I finally roused somewhat, but felt immensely drowsy, achieving full wakefulness with difficulty. But I suddenly became aware that the hissing sound and the stink that I thought had been dreamed were indeed real. I staggered out of bed to my feet to discover the length of red-rubber tubing, combined likely with an increase in gas-pressure during a night hour of minimal general consumption, had resulted in the escape of the gas, for how long a time I never knew.

At any rate, I had a pounding headache, felt groggy as I quickly turned off the wall-valve and prepared to dress and to air out the room. I had some long, sober thoughts. What if this had happened earlier in the night, and earlier in the year, while my windows had been closed, or nearly so? I thought about my parents, brothers and friends.

Then I had to get busy. It happened that I had been scheduled to write two exams that day. One was a test in physical chemistry and the other an hour's mid-term in biochemistry. I dropped in to see Professor E. D. Eastman, who taught us physical chemistry, explained the circumstances to him, and mentioned my painful headache and feeling of unreadiness for classes and tests. He looked at me with a kindly expression, saying in his slow, quiet voice, "Well in that case I definitely order you not to come to class for the test. Get out for a walk in the hills

and breathe deeply. Now is that a good enough reason for you to miss this morning's test"? I thanked him and left.

I then tried to find Professor Carl Schmidt, from whom I had biochemistry, and who was that day giving the important mid-term. He had once said, "If you are ill, or if for some other good reason not ready to attend class to write an examination, come and tell me beforehand about it, and I'll excuse you. But don't come in, perhaps after having failed an exam, and then plead that you were ill at the time that you wrote it." And I knew that this firm, fair man meant what he said. Here I was in that condition.

However, all of my efforts failed to reveal his whereabouts, and my eyes and head were pounding to burst at every step that I took. So I decided to head for the Berkeley Hills, considering that it was early in the day and that I might get back somewhat relieved in time to sit for the dreaded exam in the early afternoon. I took a really good walk for a couple of hours or more, occasionally sitting or lying down on the sward. And the head pain abated at least a little as I gradually expelled the CO which had attached itself to my hemoglobin, with a combining affinity thereto some 40-fold that of oxygen.

However, on my return I still failed to locate Dr. Schmidt, so repaired to the examination room to do the best that I might. And an odd, quite unexpected psycho-physiological effect took place there. For the whole hour that I spent writing that exam (in which, incidentally, I think that I did well as it turned out) my pain departed completely from the eyes, the throbbing headache ceased, my intellectual faculties brightened, and I wrote steadily.

Leaving the room at the end of the hour, I felt relieved and surprised at the general outcome. But physical comfort was not to abide with me long. To my great chagrin, the accursed head- and eye-pains returned promptly. Even when I stopped walking, to relieve the entrained synchrony of head-throbs with my steps, the throbs then kept pace with my heart-beats. I was grateful for the hour's reprieve, and most puzzled by it. In any event, the symptoms had vanished by the following morning, and I remained thankful that the episode had not had a far more serious outcome. I never again failed to turn off that metal stopcock on the gasline.

Professor Carl Schmidt was a fine scholar, a most serious man, a careful lecturer for the medical students, and a man not easy to come to know at first. But he had a fine dedication to his profession and to his university, and was a warm friend to many. Indeed I came to know him cordially a few years later, when I had obtained my doctorate and had joined the large University family....

* * * * * * * * * * * * * * * * * * *

Of costumes and jobs on campus

The attire of the different university classes during the so-called "roaring twenties" presented certain interesting contrasts. All freshmen (males) wore little blue felt hats with gold-ribbon bands, and woe to him who neglected this bit of attire during the early part of his first year at Cal. As may be imagined, these absurd little hats took on some bizarre designs as time went on. Sophomores wore tweed caps with a red or a green button on top, depending upon whether their graduating class-year were odd or even. With Junior men headgear was completely optional, and many went hatless in good weather, but all the men were allowed to wear corduroy trousers, beginning with, but not before, the junior year. A lower classman who donned corduroys, upon arriving on campus, was nearly certain to be relieved of them without ceremony! And, especially if a Freshman, he was likely also to be dumped into the pool outside the Hearst Mining Building. Senior students also wore "cords" if they so chose, as most of them did, since such attire was less costly to purchase than other material. But seniors were also distinguished by their sombreros, or light-tan, stiff-rimmed cowboy type hats, each with a leather hatband bearing the Golden Bear design and the year of the wearer's graduation class. When a senior graduated, it was customary for him to give the hatband to a favorite co-ed friend of his. The sombrero, worn then without the leather band, bearing but the original light-brown silken one, signified the wearer's status as an alumnus, and grad students were so attired.

As for the customary cord pants worn by upperclassmen, these bore not only sundry ink tatoos; but notably among the engineering, mining and chemistry students, became grimy, stained, pocked with holes, and, it was claimed, sometimes so stiff that they could be stood up against a wall rather than being draped or hung when the wearer retired for the night. Among the chemists, not only stains from various dyes, but holes made their appearance as well, since cords like neither acids nor alkalies. The chemical curriculum naturally thus rendered a fellow's cords of shorter lifetime, as I learned.

Another rule was that no freshman was to be seen walking with a co-ed on or near Campus. Embarrassing consequences ensued, humorous to all save the luckless couple. On one occasion, an initiation on Telegraph Avenue entailed the

surrounding of a student by a ring of sophomore, demanding, upon penalty of grave consequences, that the freshman grasp the hand of the first co-ed to appear, kneel upon one knee, and propose marriage to her. It just happened that the maiden thus accosted took in the situation at a glance, and was both humane and resourceful. "Why of course. Let us proceed at once," she replied cheerfully, taking his arm and marching him away from his surprised tormentors.

College days assuredly provide one with many diversified acquaintances, some of these leading to warm and lasting friendships. I can remember many cordial associations and only very few antipathies. An outstanding friendship of my college days was with Herman Ramsperger, who was a grad student in chemistry when I came to know him, in the spring of 1923. Not only did I discover that he knew chemistry very well, and that he could explain clearly many aspects of it to me, a sophomore at the time, but I found in Herman a warm, fun-loving friend who enjoyed many of the outside activities as did I. We swam, walked, saw moves, attended lectures together, sometimes double-dated with girls, on a ride or to the theatre; unfortunately, he did not care to go to dances; but on several occasions we went on camping trips or to stay for a few days at the beaches near Santa Cruz.

Incidentally it was in Herman's home and with his younger twin-sisters that I first met Rosemary. That must have been in the late spring of 1925, when I was a senior. Rosemary and I were married two years later, in June, 1927. It was a double wedding, my elder brother Art and Geraldine (Jimmie) Haynes being married at the same ceremony. Herman was my best man.

In August of that same year Herman and Barbara Burks were married in Palo Alto, where Barbara was a graduate student in psychology, and obtained her doctorate a year or two later. We attended their wedding, and I've still a snapshot of it somewhere.

While a freshman at Berkeley I had found part-time work in the Fruit Products Division, in the Department of Agriculture, under Professor William V. (Bill) Cruess. There I learned about the preparation of such delicacies as jams and other preserves, fruit butters, juices and other sweet items on a medium-large, experimental scale. We had to wash and clean the large, steam-jacketed copper cauldron after each cooking. There were many and sundry opportunities to sample assorted fruits, jams and juices. I recall having appropriated a pocketful of dried figs, en route home one late afternoon. I had eaten a goodly number of them whole, simply biting the fig off at its stem. For some reason, I decided

instead to tear the stem away first, and in so doing ripped the whole fig open, revealing a large, yellow-brown maggot. Discarding that fig,I opened a number of others in a similar manner, to make like discoveries. The law of averages whispered to me then that I must have taken in, adventitiously, some additional kinds of protein in eating the earlier samples.

In the summer of 1922, just after my freshman year, I went to work in the Chemistry Department, in the building that we called "Old Chem", There I was to be employed, during off-hours in term and in summertime, for the next two-and-a-half years, i.e., up until the last half of my senior year, when I decided to do some undergraduate research under Dr. Branch. As I mentioned earlier I also lived in Old Chem for one year, while I was a junior.

I learned to handle new shipments of chemicals and glassware, to prepare laboratory reagents, including standard solutions and to standardize sets of weights for the chemical balance. Mr. Harry N. Cooper, the droll, old-fashioned curator, knew many useful short-cuts and special manipulations, and taught me much that I should not have learned merely in classes. He looked like a Dickinsonian anachronism, with his crisp, grey hair, gentle brown eyes, grey moustache and goatee; and he had a kind of mincing, shuffling gait. He spoke in a quiet, gentle voice, almost in a confidential tone, when giving instructions. He kept hens at his place, and sold eggs. He used to depart from his job early on each Friday afternoon, going into Oakland in his ancient car to pick up, for feeding to his poultry, great loads of fish-entrails, obtainable free from the market. These he carried in open-topped 5-gallon cans, each supplied with a rounded wooden dowel, nailed across the top's open end. A very economical and earthy man he was, with a master's degree, I think, in chemistry. He wrote a very complimentary recommendation for me when I was leaving on graduation, writing, inter alia, "He is extraordinarily careful and accurate." This I took as enviable praise, coming from the capable Mr. Cooper.

My first assignment, in that summer of 1922, had been to assist Mr. Charles Gilman, the storekeeper in Old Chem. He put me to work drawing diethyl ether (the kind used in anaesthesia) from a large steel drum into 5-pint glass bottles. Although I worked at this all afternoon in an open courtyard, the vapor of the pouring ether made me a bit sleepy, I remember.

Mr. Gilman was an entirely different type of man from Mr. Cooper. He was perhaps 68 or 70, a vast, ponderous old chap with a fair complexion, light-

blue eyes, a round, fleshy face and a white moustache. He always wore a black derby hat, even at his work in the storeroom. He spoke in a fairly gruff, low voice, and had some difficulty sounding his 'f', probably for dental reasons. Examples: "They gotta take that sulwhooric acid back agin." (Why, Mr. Gilman?). "S'posed to be whoomin' an' itaint."

He always wore dark clothes, and donned a faded blue, pin-striped cotton coat when he entered the storeroom to go to work. I liked the old boy very much, and was amused by his jokes, most of which were not suited to mixed society.

One buxom girl came to his window near term's end to be issued clean wrapping paper for re-lining the drawers of her lab bench. "Mr. Gilman I need some of that brown paper to put in my drawers", she said.

"You do? Ain't you afraid you'll scratch yourself?"

Old Man Gilman had had a rough life in the San Francisco of his younger days, when the Barbary Coast was a going concern. He used to talk of his young days, when he had been a ship's carpenter, and had done some ring-fighting on the side. Most of his stories have been lost to my memory.

Mr. Gilman loved old Professor Edmund O'Niell, who had been in the Department even before Gilman himself had arrived. But Gilman called the other professors by their last names, very loudly, when summoning any one of them, say, to the telephone, or to sign up for alcohol withdrawn from the storeroom.

I asked the old boy one day how long he had been working there for the University, to which he replied, "Thirty-three years. Like a damn whool.". That was a conversation between us in 1922. He therefore had been there since 1889. Eddy O'Niell had graduated with the class of 1879.

* * * * * * * * * * * * * * * * * * *

The Berkeley fire of 1923

It was not long after the opening of the fall semester of my junior year at Berkeley when, on the evening of 16 September, 1923, I had noticed a rather oppressive condition in the atmosphere generally. The weather seemed to be abnormally warm. There was a gusty east wind, carrying white flecks of ash from behind the Berkeley hills over and into the city. News came out that a fire had begun accidentally in the Wildcat Canyon area, where I had hiked and camped in other days. But I had retired to my quarters in Old Chem that night without much worry, supposing that the appropriate fire control forces must be in active attendance.

The following forenoon passed uneventfully, but the weather was rather hot for mid-September. In the early afternoon, working at my job in the Department between formal classes, I was in a small lab on the first floor of Gilman Hall, weighing out a batch of silver nitrate crystals for the preparation of a reagent solution. I had noticed an intermittent darkening of the room, and, without looking up from my chemical balance, had supposed the causative factor to be a window shade swinging toward and away from the outside light-source, and I did not reflect that there was no sound of wind whatever to cause such a movement.

Very shortly, Professor Merle Randall entered the room, looked out of a window, shouted, "Oh! Look! " and dashed from the room. And look then I did, at once, to see the early afternoon sun, high in the sky as a bright red ball, peering through varyingly dense, brown clouds of billowing smoke, blown westward by a stiff wind. Flames were creeping toward us from over the eastern hills.

I thought first of our home, out on Berryman Street in North Berkeley, and hastened first there, to find Art there ahead of me, busy watering down the outside of our wooden house with the garden hose. Our parents, fortunately, were away on a trip. They told us after their return that they'd heard the news, but decided that no useful purpose could be served by rushing home, in either case. If the house could be saved, Art and I, with the fire department were there to do the best possible; and if not, curtailing their mission could accomplish no useful end. Thus ran their philosophical reflections.

After we had done all that we could, and noting that the flames were being carried not toward our part of town but more in the direction of the Campus, we hurried off to help out elsewhere.... I do not remember where Art went, but I headed for the hilly part of Berkeley to our east, on upper Euclid Avenue, Hawthorn Terrace, and Codornices Park, above Oxford Street. Upon reaching Hawthorn Terrace I found my fears to be confirmed. For there was the Whitney home, (where I had enjoyed countless social evenings with contemporary young classmates and near-classmates, including the three Whitney daughters) now a low pile of grey and glowing ashes and clinkers. The heat in that neighborhood was terrific. Somewhere in the general area I joined a car full of students headed for areas not yet in flames, intent on getting any people and/or their belongings to safety. We carried books and other valuable articles out of houses of some professors for some time, but not on a very well organized schedule—there just was no time. Then the call

came out that we were surrounded by fire on three sides, and must retreat at once and fast toward the southwest and the threatened campus. We hurried on the run from the burning area and proceeded toward our University. I had terrible visions, not only of the burning of the wooden buildings housing architecture, astronomy and nutrition, just within the northern boundaries of the campus, but of what should happen were the holocaust to reach the chemical stores. As I reached Oxford Street, a fellow-student passing by car in the opposite direction called out to me, "Hey, where are you going?"

I yelled back to him, "To the Campus!" and hurried on, while the terrible flames, driven by the wind, raced in the same direction a scanty few blocks eastward of me. As I approached the intersection of Oxford and Hearst, bordering the north side of the campus, a vigorous thought, probably an actual prayer gripped my mind, "My God, this terrible wind! The only single thing that can save our campus now would be for the wind to die down, or better, go into reverse!" And just after this thought, there before my eyes came the astounding event which saved our University's campus. A great wind suddenly roared out of the south, replacing the norther we had been having, and swept the towering flames back into reverse. The territory immediately behind the fire was burned over, but a southwesterly component drove the flames back in a northeasterly direction for a relatively short time, consuming perhaps a dozen more houses before it could be contained. Beginning at about 2 o'clock that afternoon, and raging until 6 in the evening, that fire had wreaked shocking devastation across a great area of the once lovely Berkeley, and it left, for long months to come, blackened ruins among which chimney-stacks remained standing like grim, charred spectres, surveying the destruction and reminding all viewers of what once had been.

Providentially, not one life was lost, to the best of my memory, while even injuries were few and incidental to fire-fighting efforts. I reached the campus feeling weary and found, at old Harmon Gymnasium (long now gone) a sight that thrilled me. There were scores of co-eds, moving purposefully about, serving hot food to tired men students from the fire areas, at long tables upon which we had written many a final examination. "Will the girls please clear the way so that the men can get through?" one young woman called out. A very special request, rarely heard indeed; it usually was of a reverse order.

In another area of the great gym floor were many blanketed cots, lined up in long rows for accommodating the people who had lost their homes in the fire,

for students whose fraternity houses had perished, or for others who may have been too weary to return to their quarters. I later returned to my room in the upper floor of Old Chem, but spent a rather restless night, pondering repeatedly on the events of that disastrous blaze, and reflecting on how much worse it might have been had it invaded our city by night. The northeastern, rising skyline of Berkeley, punctuated by the innumerable stark, blackened chimney-stacks, was to be a grim reminder of a warm afternoon's fire ravages for a long time ahead.

* * * * * * * * * * * * * * * *

Sic Itur

Several of my former classmates, or college-mates, became married in the early years following graduation, and we used to enjoy very happy occasions at the homes of various couples. Rosemary and I were married after I had been employed by Standard Oil for two years. It was shortly thereafter that I began to give very serious thought to pursuit of graduate studies. For I liked biological sciences, and the application of chemistry to them, and had been remembering Professor C. V. Taylor's offer, at the time that I was an upperclassman, to take me into the Department of Zoology as a teaching assistant. At the time I had told him of my intention to work as a chemist, at least for a few years, after which I might return for graduate work. So the thought never really had left my mind. I remember his saying at the time, "Well, fine. You do that, and when you come back to graduate school then you will be all the more prepared and valuable".

Well, Rosemary graduated from U. C. with an art major in 1928. And in June, 1929 I resigned my job at Standard Oil in Richmond to accept a teaching assistantship (for the Fall Quarter) in biochemistry at Stanford, and to begin my graduate work there, primarily under Dr. J. Murray Luck, and closely with my old friend C. V. Taylor, who had taught me beginning zoology at Cal, and who now was at Stanford. He was, in fact, chiefly instrumental in my selecting Stanford, for he and I enjoyed a stimulating intellectual companionship.

At Stanford we met a new set of congenial young couples among the other grad students and younger staff. I was a teaching assistant in biochemistry during the three quarters of my first year, and later in general biology, wherein I was again reminded of the differences in maturity between first-year medical students and freshmen. Both sorts indeed were still green, but in different ways; and the freshmen knew themselves to be green.

Courses in colloid chemistry under Professor James W. McBain, in the chemistry of protoplasm by Professor Carl L. Alsberg, and in the biology of protoplasm by C. V. Taylor turned my active attention toward cellular phenomena,

and I chose for my doctoral problem a study of the physical and chemical effects of carbon dioxide, as a narcotic and lethal agent, upon the life and protoplasmic intracellular flow in the cells of the filimentous alga Nitella. My previous training in organic chemistry oriented part of my thinking.

It was during those graduate years at Stanford that Rosemary became ill with appendicitis, necessitating emergency surgery, which in turn revealed a ruptured condition. The infection proved to be a stubborn, resistant actinomycete fungus, which rendered her increasingly debilitated for the many months that followed, while I struggled with my academic duties and with the superimposed load of worry and concern, not to mention the pecuniary quagmire of debt that accrued.

Finally, in late October of 1930, Rosemary was admitted to Stanford University Hospital, up in San Francisco, where every effort was expended, although in vain, to overcome the persistent infection. Some of the special antibiotics now known to medicine were yet to be discovered in those days.

I took the bus to San Francisco (or occasionally rode up with a fellow-student) each Friday afternoon, visited Rosemary in the clinic during the permitted hours, then took street-car, ferry and train to Berkeley, where I stayed with my parents during the weekend. Then I went to San Francisco Sunday afternoon, visited Rosemary at the hospital at 4 and 8 o'clock, and back by bus to the lonely, dark cottage in Palo Alto in the late evening. This general sombre routine prevailed from October, 1930 until August, 1931, when I moved away to take up my position as an instructor at the Scripps Institution of Oceanography in La Jolla, some 600 miles south of the San Francisco Bay region. It was a long and slowly failing vigil.

I had been extremely fortunate to receive, during that time of the Great Depression, offers of two positions. One was to work on experimentally induced cancer in rats under the supervision of an M. D. at Stanford University Hospital, but this position held no promise, either financially or professionally, as to its future. The other offer was Dr. T. W. Vaughan's invitation for me to come south to La Jolla, where the instructorship at Scripps would pay $2200 per year at the start, and promised permanency in an ideal climate for Rosemary's possible recovery. Deeply in debt, I needed financial security and a promise of professional growth. I accepted the La Jolla position, and managed to place in the Stanford job an old college friend, Lyelle Wulff, by my strong recommendation. He did careful, faithful research, under some trying conditions there for the ensuing ten years.

For as long as the memory-controlling cells of my brain shall continue to hold to their function, I never shall suffer an erasure of the scene and the voices

that prevailed in an upper, large room in the Stanford University Library (Room 310, I think) on Wednesday, the 10th day of December, 1930.

The Qualifying Examination for the doctoral degree had been scheduled and, as was and still remains the practice, had been publicly announced in printed documents upon numerous bill-boards. Indeed, there were four of us scheduled for such examinations, seriatim in that one week. And some members of the faculty in the School of Biological Sciences and of allied departments, such as Medicine, suspected (not without justification, as matters turned out) that there might be, among the four candidates, at least one academically weak one. They intended to discover him if he existed.

As Fortune and Chance had ruled, my own exam had been scheduled as the first of the four, at 3 o'clock on the date and at the site mentioned. Closing all books and notes for better or for worse on the morning of the day, I had left the cottage, where my Mother had come to be with me for a few days (Rosemary still was a bed-patient at Stanford Hospital, up in the City). I took a long, vigorous walk alone through the foot-hills and lanes surrounding the campus. I think that I then dropped into the barber shop on campus for a refreshing haircut. At any rate, some minor incident occasioned a slight delay in my progress toward the house of inquisition, for the hour of 3 p. m. boomed forth from the chimes tower as I was ascending the stone steps leading to the massive oaken doors of the Library. I therefore arrived perhaps a minute late of the appointed hour. But fortunately this lapse evoked no noticeable reaction among the crowd that stood about in the room awaiting the ritual.

For a crowd indeed it was, in a relative sense. The usual number of appointed examiners for this kind of exam was about five, while there might be a couple of other interested faculty members, and perhaps a grad student or two dropping in to listen, and perhaps to learn a few things in the instance of the students, who remained silent.

But on this day there were 15 faculty people there, most of whom I had come to know, some of them fairly well. I saw one or two whom I had, in fact, invited. And all had arrived in good time, to begin the sifting process, I supposed, in search for the "knowers" versus the rumored less-informed among the successively placed quartet of examinees on as many days. There were also a couple of grad students, I think. Indeed I remember one, my friend and fellow-biochemistry major Veon Kiech, who, incidentally, after some 39 years had passed since that day, and perhaps 38 years since we even had seen each other, visited me one day on the S. I. O. campus. On that occasion, he recalled, mirabile dictu, my having

fielded one tough question asked me by Dr. Luck, as to when and by whom sucrose had first been synthesized, to which I had replied, "By Pictet and Vogel, in 1928, " then explaining how they had done the synthesis.

Well, at the exam my eyes were greeted, in that large room, by a long, long oval table of light oak, with the Chairman seated at the convex, eastern end, groups of six professors sitting along each side of the ellipse, and a vacant chair at the west end, where there was a rounded, capacious arc carved into the table-top when it had been built. It was the only vacant place, for two professors had taken chairs along the wall, where the student-listeners sat also. On a word or an appropriate sign from Professor E. G. Martin, the Chairman, I eased my body into the indicated seat of focus, and proceedings began at once. The Chairman announced that Mr. Fox, who was to be examined on the occasion, was supposedly prepared to answer questions in the field of chemistry, and in biochemistry, his major field of study; and that, since the candidate was in the School of Biological Sciences, with certain ancillary courses in those disciplines on his record, he would be expected also to respond to any inquiries residing in the realm of classification, structure and function of plants and of animals.

There followed the brief, so-called pregnant pause, and then inquiries began. Fortunately some responses required the use of the blackbroad, situated across the room from where I sat, and directly behind the chairman's seat. This meant that there was at least a little physical exercise for me, along with the answering that I had to do. It always helps, somehow.

Actually, when proceedings were underway after the first few minutes, I really found myself enjoying the whole session. Not that I found responses for every question, but at least it happened that there were no real "howlers". I did make one error that showedin the faces and the silence of my listeners, toward the latter part of the afternoon. Professor Meyer who had been examining me on Darwinism and evolution, had asked, "By the way, of what nationality was Lamarck?"

For some perverse reason, I then confused the name of Lamarck with that of Linnaeus (Linné) so replied, "Lamarck was Swedish. " Silence practically thundered, while there were a few faint smiles. Then, in a few seconds, Jack Field, then a young assistant professor of my own age, leaned over from his seat next to me and asked, sotto voce (bless his heart), "Do you mean Jean Batiste Pierre Antoine Lamarck?" I could not repress a chuckle, and said, "Gentlemen, I am sorry; I was thinking of Linnaeus, who was a Swede. If only I had remembered one or two of Lamarck's several given names, I could have told you that he was

a Frenchman, with an un-French surname". The company relaxed and chuckled too.

After 2 3/4 hours of discourse, questions and exchanges, the chairman asked if there were further questions. Two of the faculty had replied that they were observers, and had no questions. The other thirteen agreed that they were finished. So I was asked to vacate the room, taking leave of the assemblage temporarily, but not to stray beyond early summoning distance, so that I could be located readily in due time. I did not have to pace the floor outside the door for more than a very few minutes, as I remember. I think, indeed, that the student-listeners had to retire also, according to protocol. Nowadays, at least in U. C., visitors are not allowed at a doctoral candidate's Qualifying Exam, but only at the final defense of thesis, which is open to the public.

In about five minutes I was recalled into the chamber, and was tremendously warmed as the Chairman announced, "Mr. Fox, the examiners have asked me to tell you that you passed a very satisfactory examination, by unanimous vote." So there was a lot of hand-shaking and congratulatory comment there before I departed, meeting a few other grad students here and there on my way through the dusk to the Inner Quad and thence soon homeward to tell Mother of the outcome. She was happy, but did not seem surprised.

Next day as I passed through the laboratory of Dr. Mary I. McCracken, as I had to do to reach my own lab in the "catacombs", the nice little old lady felicitated me again , and asked, "Did you notice that the description of the examination included the words 'very good'?' Yes, I replied, I had. "Well, " she continued, "that qualifier 'very' was inserted advisedly. It is not often added, you know, and it goes into your record. And now, Mr. Fox, I want you to answer my question, as you did not do yesterday: What is the unit of classification?"

"The unit of classification is the species, Dr. McCracken".

"Yes.' Of course.' Now why didn't you tell me that yesterday?"

"I can't remember - can't really answer. The question was straight-forward. I suppose that I had been thinking along chemical paths, and perhaps I was getting a bit tired", was approximately my lame response. (Actually, the information had come out rather indirectly in the discussion at the exam, and I remembered it).

She was a smart, warm and cordial friend, that sweet little old lady.

Even today, after 40 years have passed since that day, I can remember the names of 14 of the 15 faculty people present, and will leave space for the final name in case I should remember it later on. I will list the people in the order, as I remember it, sitting around the (oval) table:

Ernest Gale Martin (Chairman) Physiology

James Murray Luck
(Biochemistry)

Charles Haskell Danforth*
(Anatomy)

George Daniel Shaefer
(Physiology)

Ira Loren Wiggins
(Botany)

Jay P. Beard
(Bacteriology & Biochem)

John Field II
(Physiology; Chemistry)

Mary Isabel McCracken
(Zoology)

Arthur W. Meyer
(Anatomy & Hist. of Biol.)

James Ira Wilson MacMurphy
(Botany)

Geoge James Peirce
(Plant Physiology)

L. Lancelot Burlingame)
(Bot. & Gen. Biol.)

James Percy Baumberger
(General Physiology)

Myself, at foot.

There were Dr. Clara Stoltenberg and Dr. J. Clarence Hinsey, both in Anatomy in the Medical School, sitting along the wall, to my right. Dr. Carl Robert Noller, the organic chemist, had been assigned to come, but forgot the date.

Instructor in the Thirties

Having finished up my research, written and submitted by doctoral dissertation, I took off, late in August, 1931, with great emotional difficulty, for La Jolla, driving my old 1925 Model T Ford coupe through the hot Salinas Valley. The Ford travelled well, and fast enough for those days, and its Ruxtell xle came in usefully on the few long, high grades that had to be traversed.

I stopped over briefly in Pasadena, visiting with Jack, who then was working at the Y. M. C. A. there. I visited Art also, in Los Angeles. He had a job of sorts, which was fortunate considering that we were in the depths of the Great Depression of the Thirties, when many well qualified men could find no work, or none but menial jobs. The Art Foxes were expecting their second child on nearly any day, and John Arthur Fox was born on his father's birthday, September 5, 1931, as I heard by mail in La Jolla the following week.

Work in the new environment was interesting, but life was lonely indeed during those first months in La Jolla. A new professional life had opened before me, as an Instructor in Physiology (of marine organisms), and I had my own research to plan. But I was worred continuously over Rosemary's worsening condition, alone in Stanford Hospital some 600 miles north. Friends visited her, and occasionally my parents as well, and Lyelle saw her several times daily, for his work was right there in the hospital labs. But there she lay helpless and un-

*This name inserted 5-30-76 when discovered in old records in my safe at home.
D.L.F.

comfortable with a wasting disease. I had to earn, for I was deeply in debt, and sinking more deeply each day.

A flight up early in October help matters but little, and my leaving there again only reopened everyone's wounds. But Lyelle kept in touch. As Rosemary's condition weakened, her mind and consciousness were affected, and she used to mistake Lyelle for me. That probably was just as well if it afforded her some sense of my having been there with her.

I was summoned by telegram from Lyelle on about November 20, and so flew up again on 22 November, to find Rosemary in pitiful condition. I filled my distraught days by working in Lyelle's lab with him. Then, on the morning of December 14, 1931, the end came quietly.

Both of us had carried life insurance policies. Rosemary had said, one day, that although the beneficiary named in her policy remained her mother, she wanted me to receive half, should the occasion ever arise. Her mother agreed. Then, when the insurance had been paid to her, she told me that she had been under the impression, when giving her verbal consent to the arrangement, that the policy was for but $1000, and that I should receive $500 as half. Not having paid the premiums, she had forgotten, presumably, that the policy was in fact for $2000. When she discovered this, on receiving the payment, she nevertheless convinced herself that $500, the original amount that she had had in mind, was still all that should go to me. I met her at the bank, as I had been asked to do, and received the money. I was too grieved to argue over such matters. I never saw her to speak to again. I caught sight of her one brief moment, near the old home on Vine Street as I happended to pass in a car, but she did not see me.

Some three months after Rosemary's death, I was astonished to see in my mail at the Scripps Institution a post-card addressed to me in <u>Rosemary's hand-writing</u>. It was indeed a shocker, wrenching me back in memory to other days, and it bore a recent date. I reversed it to find a short greeting written by Rose-mary's mother, who had discovered it among Rosemary's effects , and whose reflection as to its best disposition apparently went no farther than the impulse to just send it along to myself as the addressee, designated at some past time when Rosemary had wanted to write me.....I thought that the mother ought to have entertained a kinder impulse to discard it.

In the spring of 1931, during my visits to the hospital, it had been natural that I had come to know a considerable number of Rosemary's nurses. Student-nurses they were, mainly. Of all of them, the sweetest, most cheerful, helpful, wholesome and kindly was Miriam.

Our acquaintance continued in the days following Rosemary's passing, and we used to have long walks and talks together on the night-streets of old San Francisco. Later on, after my return to La Jolla, we wrote nearly daily, for we were deeply in love. We were married on August 31, 1932, at her parent's home in Boulder Creek, California, where her father, the Methodist parson, conducted the ceremony. Our life in La Jolla went ahead happily, and our four children were born there: Ronald L., on January 24, 1934; Stephen John P., on 8 June, 1935; Kathleen Miriam on 12 September, 1940, and Alan D. on 29 May, 1948. All fine youngsters, who grew up in La Jolla, and graduated from La Jolla High School, and each went on to college in turn: Ron to U. C., Berkeley, whence he graduated in chemistry in 1957; Steve to Stanford for his one and only year, 1953-54, since the summer of that year brought the eclipse of his noble, sweet young life through being struck on the road by a reckless driver. Kathy finished two years at U. C. Riverside, then transferred to Riverside City College (after her marriage to Allan H. Quist), and finally took her degree in nursing. Alan matriculated in the University of Iowa in 1967..

Ron married a lovely classmate, Betty Klaus, while still in college (1955) and they raised two daughters Diane and Susan. Kathy and Al Quist have three children, Eric, Brad and Connie.

The grief over Steve's sudden eclipse from the land of the living all but paralyzed us emotionally that summer of 1954. All save Alan, that is, since he, only 6, readily accepted our statement that Steve had gone to live with God. Kathy, at 13, recovered sooner than did Ron, Miriam and I, for she mixed with her contemporary friends, and is of very equable disposition. Ron was the hardest hit, really, for he had been there to witness the death of his beloved brother. It nearly cost him a failure at college on his return there. But he demonstrated courage and determination, and picked up the pieces, taking an extra year to graduate.

Miriam and I prayed for peace and hope and comfort. We became regular attendants to the Presbyterian Church, to which we had belonged for some 20 years.

A Stephen Fox Memorial Fund exists at Stanford University, the annual interest from which is used, in perpetuity, to buy new books, partly for the respective libraries of the Departments of Music and of Biological Sciences, and partly as gift-rewards to graduating students in those two respective departments. The books so purchased bear an appropriate book-plate within the cover, depicting a meadow-lark, singing in the country. The original, a black-and-white oil painting

by Tex McRory (one of Steve's co-workers in the Zoo) is in our home. We never have refrained from speaking openly of Steve, among family and friends. I still use an iron paper-knife that Steve fashioned in 7th grade metal-shop class, and gave me long ago.

Of Genius, Giftedness, at hoc Genus Omne.

Genius, as the term is approximately defined, is given to but very few indeed; and, while it is not readily defined in words, it is unmistakeably recognized when present.

While another elusive quality, referred to as "giftedness", is somewhat more often encountered, it still is very rare. It merges across an undefined boundary with the "exceptionally bright".

Some among us may be quick to grasp information of all kinds, intelligent and original enough to apply and build upon it; and we may belong to the "exceptionally bright" category. Yet there may be certain talents and abilities within one and the same person, wherein his aptitude is extraordinary, placing him in a "gifted" category in that respect.

So one may be gifted or not gifted, depending upon which yard-stick and what intergrating methods the judge may be using. Since I am not a professional psychologist, I should not like to be called upon to render judgment regarding giftedness in young persons. Moreover, I am not of the belief that the unqualified person has this ability, or should try to pronounce judgment.

But I am not averse to reserving my own private opinions. Thus I know certain young people who, because they possess certain mental and intellectual qualifications, have impressed me, a long-time teacher, as very probably belonging to the so-called gifted category. True, I hesitate to agree when an occasional friend volunteers the descriptive term "genius" in discussing such cases, for I cannot sufficiently define that term, nor do I believe that others can.

But, whatever may be others' opinions, for better or for worse, I can readily appreciate the applicability of the term giftedness to certain areas of ability. Thus a great poet, for example, while outstandingly gifted in that creative area of literature, may yet possess no mind for the kind of thinking imposed by mathematics. And vice versa. But even here, there are exceptions, as we all know.

The rare man, Leonardo da Vinci, a phenominal kind of human who may make an appearance but once in one or more centuries, was a radially-qualified individual. Everything that he touched, in the realm of art, sculpture, architecture, engineering or science, blossomed into greatness. Here was true genius; through his fruits men knew him.

But many of us know people who are unusually competent in one kind of activity, while performing only fairly or adequately in several other respects, but withal are socially adjusted and happy most of the time.

Someone has written that, while the fox knows many cunning tricks and ruses, the porcupine knows but one trick, but knows and performs that one exceeding well. The point is that, whether gifted, bright, or of average qualifications, one can achieve the greatest happiness by experimenting with and developing those talents that he possesses. One thus pays his fare, and enjoys a corresponding feeling of personal adequacy and independence in so doing, in exchange for his privilege of passing through the world.

3/14/70

For some few months I'd been aware of certain symptoms generally suggestive of an enlarged prostate, notably in men of about my age. So a fortnight ago I had the condition examined by Dr. Everette Rogers, who found the gland enlarged and detected certain bacteria in the expressed prostatic secretion (an unpleasant process for the patient). So he put me on a 4-times-daily regime of pills to combat and perhaps quench the low-grade infection. Yesterday he found the gland still rather flaccid and large, while the infection, although reduced, was still present. So I'm on another prescription now, and when it has run out I'm to see him again. He admitted to thinking it was unlikely that a prostatic transection (prostatectomy) may be indicated, and suggested that a good urologist have a look at things, and then do whatever may be indicated.

Naturally I do not look forward with any pleasure to surgery, especially this kind. Moreover, there will be the necessity of establishing whether or not the hyperplasia might involve neoplastic cells - not an atractive reflection. I've seen such instances before, and they are not nice business, either in progress or in prospect. Still, I refuse to feel afraid, or even worried. I know enough about medicine to realize what specialists, in whom I trust, have to do to ensure optimal results. And when certain signs show themselves, it is best to have the matter looked into, rather than fiddle around and procrastinate until it may be too late. One of my colleagues recently had prostate surgery, with repairs, and cobalt irradiation to follow, but seems now to be doing very well. I would hope that Co-treatment might not be indicated, as it can be most debilitating and generally unpleasant.... but if so, so be it. At least I shall have done things about the symptoms at an early time, and thus can retain a clear conscience, thinking of my family. One's divine faith is beyond evaluation at such times.

4/21/70

Well, I was examined by Dr. Jim Whisenand, a highly recommended specialist, on April 3; assigned to keep an X-ray date on the 8th, which I did, under the skilled ministrations of a friendly, jolly nurse and a very capable young physician. The multiple pictures (with and without iodide injection, and before and after emptying bladder, etc.) were then sent to Dr. Whisenand, whom I then saw later in the day for results of his diagnosis. He examined the prostate once again, analyzed the glandular secretion, and found that the gland was now less enlarged, and the fluid free of bacteria. It was a relief indeed to be told that no surgery was indicated.

I phoned Mim, who was up in Helena, Montana for a fortnight, helping out after the birth of Kathy's and Al's 3rd child, their first daughter, little Connie Kathleen. I had promised Mim I'd call as soon as I knew results. She had been thinking about me all day, she said, and was as delighted as I had been over the outcome.

One learns that practically all older men learn to live with enlarged prostatic conditions, and that they are fortunate if they have no symptions more serious than some nocturia. I am to watch the general conditions, and to have an annual inspection. Meanwhile I feel gratified to have lost some 50 pounds in weight since May, 1969. One looks and feels better after dropping off excess weight.

* * * * * * * * * * * * * * * * * *

A brief look into other Foxes

Ron recently suggested urgently that I include in these memoirs some record of who were the Fox relatives. Miriam will be able to supply a good genealogy of the Perdew side. So I'll try to set down some salient points that come to memory. My brothers and I are, so far as I know, the only immediate members of the English Fox family in this country. Our respective familes therefore are the first generation thereof in this country. We've only four cousins, and each of those has established his family in England.

As I have mentioned earlier, my parents were first cousins, the children of brothers; my father's father was John Russell Fox, and Mother's was Charles James (?) Fox. Father had four elder sisters: Kate, Mary Matilda (Polly), Alice and Eliza (Ziz), and a brother 5 years younger than himself, George Walter Fox. Another son, Daniel, had died in infancy. Mother also came from a fairly large family: Herbert Lloyd, Ethel, Florence Maude (herself), Charles Townsend and Francis Edmund Llewellyn Fox. Llewellyn died at about 25 from an acute respiratory infection, contracted or worsened while he was travelling – probably pneumonia.

So I never knew him, and more is the pity for that, since he reportedly was a charming and brilliant, talented young man. I was given a middle name matching his third given name. And thus we passed this name along as a middle name for our eldest son Ronald.

Charlie and his wife Rosina (Tony, for "Stone", her maiden name) emigrated from England to this country late in the twenties. Having married as fairly mature people, they had no children. Herbert, a bachelor uncle, followed later, and spent his life in Berkeley, while Charlie and Tony went to live in Santa Cruz, where he died in early 1942.

Of all siblings on both parents' sides (9 in all) only two others married: Mother's brother Charlie and Father's brother George, who, with his wife Alice (Aunt Lal) had four sons. Of these, Collen, older than myself by perhaps a year, had been a playmate to me when we were but wee kids, and I completely forgot him, and never saw him again after we left England (although I did see the two younger cousins when I re-visited England). Collen and his wife Edith had one son, Richard. Collen worked for his living in a bank, as his father had done. Kenneth, the second son, became a sea captain. He married, and there were some children. Long years later a Christmas card carried the name of another spouse for Ken, and we've lost track of what happened in the family..... I had had some correspondence with him at the time of old George's death.

The third son Harold L. ("Peter") Fox I knew better, since I had met him in 1939 when he was married to Joyce, and they had the two little boys, Tony and Michael, and lived in Bath. And I saw Peter again ten years later, in 1949, while visiting Uncle George at Torquay. The intervening World War II had messed up his first marriage, occasioning the rupture of two homes when Joyce divorced Peter to marry a "friend" of his, who, in turn, had left his own family. But Peter later had married Margaret, whom I met in 1949 at Torquay. And they had a baby daughter, Sally, and were very happy. A very nice, friendly, genuine fellow I found Peter to be.

John, the youngest son (Miriam's age) is equally cordial, out-going and genuine. He and his wife Bay have two sons: Jeremy, who is a teacher, married, and Simon, an artist.

If I am to get much more information along this general line, I shall likely have to obtain the services of a specialist in such research. As I've written, those four sons of George are the only first-cousins that I've ever had. I wonder whether any of their children may ever meet any of ours, whether in this country, Britain, or elsewhere.

These memorabilia are being done at odd times, and when certain memories come to mind; hence there is some disarticulation as to anything like continuous chronology. I hope, however, that the time may not be too badly out of joint for some interest in the reading, on the part of those who have patience.

So now I write in the latish summer of 1970. Here we are in the Edison House, at the Cranbrook Institute of Science, where I have taken up my appointment as Distinguished Scholar, as the position is called, beginning on 14 July, the day of our arrival.

We leased our La Jolla home for the year beginning July 1, 1970, departed from La Jolla on 30 June, in our 1969 Olds all in prime condition and air-conditioned withal, and lucky that was for us. Via Las Vegas Nevada (overnight stop), and across a little northwest piece of Arizona. Thence across Utah, passing en route through Zion Canyon and spending a forenoon going through Bryce Canyon after an overnight stop there. We took a lot of colored photos, some on Kodachrome slides, where we went. On we went, over a high pass (Loveland) in the great Rockies, where there still was some snow off the road, and winding down into Colorado and into its capital city Denver, where we spent a restful weekend with Phil and Ruth, Miriam's brother and sister-in-law. Phil is a professor of educatinn at Denver University.

Thence over into Kansas and overnight at Hays, followed by a morning's visit to Fort Hays, of historical importance, and where we saw a small group of buffalo, as we had seen also in Colorado. These noble vestiges of early American days actually are bison, and are now protected. We proceeded down into Emporia, where we were the company of Elaine Kale (a cordial friend of Alan's), who had a picnic all arranged for us with their Mexican friends, the Cadenas, in a lovely park. She talked a lot about Al.

Thence on, via Kansas City and through a piece of Missouri, crossing the Missouri River at K. C., and up into Iowa, Miriam's birthstate, where Alan goes to college, and where there are many friends and relatives of the Perdew family. We visited Ottumwa (where Mim's dad once was district superintendent) and Agency (where her grandparents lived) and put up at a nice clean motel situated between the two towns. We visited Chief Wapello's tomb near Agency, and saw his statue high a-top a city building in the center of Ottumwa. Wapello was a chief of the Fox tribe, and always friendly with the whites. He was buried, at his own request, alongside of the body of an outstanding general whom he had loved.

We visited places where Mim had lived, where her dad had preached, and the site near where her grandparents had lived in Agency. We met one or two

residents who remembered Wib Clements, Mim's grandad.

We drove down to Moravia, Iconia and vicinity to see Edith Callan, Mim's cousin, and were there for noon dinner. Next day we drove on to Mount Pleasant, where we visited the college (Wesleyan) where so many of the Perdew children had attended, and we saw the home which was the parsonage for the Perdew family when Mim was a girl. We saw also much of the College, and the house where the P. E. O. was conceived..... In that city Mim and Lydia (Diall) Wilmeth used to go to school and play tennis together.

We had phoned the Wilmeths in Iowa City the night before, and so arrived there on the next day, and spent the weekend very pleasantly with them. We met Dan Moe, Alan's music professor, who is very friendly, and enjoys Alan, counselling him in some academic matters. I met also Bob Engel, in the Presidential office suite, and he also knows Alan well. We visited the Scattergood School, a Quaker institution for high-schoolars, and saw Hoover's birthplace at West Branch again. Great people are Dick and Lydia Wilmeth, and very warm friends of ours and Alan's.

Alan kept in occasional touch by phoning us from Mendocino, California, touching base thus with us at Phil's in Denver, and later also at Wilmeth's in Iowa City. From Iowa City (for which I've formed a warm feeling of attachment) we crossed Iowa into a strip of Illinois, thence up into Indiana into lovely Michigan, green with extensive grassy fields and great trees, and with many bodies of water to be seen and to cross by bridges.

We also had seen lovely green, rolling down-country in Kansas and expecially in Iowa, with great stands of corn growing in fields. Michigan specializes more in heavy industry, but has lovely countryside.

Here at Cranbrook all the people are most friendly, kind and helpful to newcomers. And we have had the V. I. P. treatment at the Institute of Science. The Wittrys, Wells, Fletchers and Clampitts each "dined" us early after our arrival, and other friends in the vicinity did likewise.

On July 28 to 31 we were in northern Michigan (i. e., in the northern part of Michigan's lower peninsula). We went to Douglas Lake, (near Pelston) where I gave an invited lecture at the University of Michigan's Freshwater Biological Station, and we met a lot of new friends. Fred Test and his wife were prominent among these. I hadn't seen Fred since the late summer of 1938, when he had come down to Scripps in La Jolla to have some help from me on pigments in the feathers of flickers, the subject of his doctoral research at U. C. in Berkeley.

My lecture seemed to be well received, from questions and comments that followed later. We visited historical sites at the northern tip of Michigan's southern pininsula, going on the morning of July 29 (the day of my lecture which came in the evening), by ferry to Mackinac Island, there to visit, among many other sites, the place where Dr. William Beaumont repaired the terrible gunshot wound in the viscera of Alexis St. Martin, and later, as the months passed, carried out his classical research on the gastric enzymes secreted through the fistula in his patient's body-wall. On the 30th we visited the historic fort at Mackinaw City, where French, British and Indians had their bloody differences antedating the revolution. We proceeded down to visit Mim's niece, Mary Jeanette Redmon and her two nice youngsters on Lake Charlevoix, where the family have a nice cottage. I was given charge of preparing, by broiling over an open grill, the asado, a vast steak, for dinner. My first such experience, but it came out beautifully'.

Many opportunities there are for joint pursuit of ideas and efforts here at C. I. S., e. g., with Jim Wells on carotenoids of petals and pollen of Polymnia species and of hybrid crosses of them; with the Lake Research Lab people (Phil Clampitt in charge) on changes in our Michigan lake bodies, notably in the vicinity of Cranbrook. Here we witness a truly discouraging degeneration of the waters through eutrophication, leading to hypertrophication and fouling of the lakes, with much H_2S and colloidal, cloudy "milk of sulfur" in some places. I've made many suggestions and recommendations, particularly in two areas: clearing of the ponds sadly fouled, receiving the overflow from Europa's Pool at the Academy of Art; and in writing the proposal for research support on reclaiming the failing lakes under study, following the course of events by analysis of the leptopel, or suspended organic and other detrital matter.

The project re Europa's Pool and successive ponds was taken up by Mr. Henry Booth following correspondence with him and work done under my direction by Gregory Papp, a husky, energetic and imaginative grad student at the Academy. The effects of Greg's having cleared the trash-laden trough, situated just below Europa's Pool, was dramatic. He had cleared some one-and-one half tons of rotting plant detritus from the trough, disposed of it; when there was an immediate cessation of the discharge of sulfide therefrom and thus great diminution of the pale cloud of suspended sulfur in the waters of the ponds. As a consequence, Mr. Booth's assignment of support brought about the drainage of the ponds, preparatory to re-lining them with firm floors after clearance of the many years' accumulation of rotting sapropel. What a relief!

We now await action on our proposal for support, through federally derived funds, of our lake work. If this should come through favorably, providing means for employing a good young biochemist (whom I might help them to select), I should feel that I had been effective in helping the Institution in this way while in residence here.

I am not thinking of setting down in these memoirs all about my scientific interests and activities. Reprints of my published writings are in bound volumes, most of them, and can speak thus for themselves to any who might be interested. I would say only that I have long felt a deep and abiding love for and an identification with, all aspects of Nature. I shall trust that those who read these lines and know me will understand. Fortunatus sum.

Nor have I taken space to write in detail of members of my family. For they, the readers, already know one another's character and history. Moreover, my love for them all would render my account too long; I should not know where to stop.

We as a family have ever been warm and open in our abiding affection for one another. I could have asked for nor hoped for no more loving and loyal family members. This goes all the way: beginning with my fine parents, my two brothers, and now my present children, all grown and two married, with lovely families of their own.

The Edison House is a fine, modern, roomy and comfortable one, luxurious in some respects, and all electrified; we are glad that we do not have to pay for utilities, or even rent, but only for the telephone. There are gold-plated fixtures in the lavatory next to my study, including even the bowl-stopper and flush-lever! There is a battery of switch controls for heating indoors and outdoor surfaces, for melting snow and ice. We have a complete intercom-and-radio system in the house. What a home for the visiting scholar, with beautiful views out from all the windows of living room, dining room, kitchen, bedrooms, even bathroom. We look out upon green sward and lovely trees in summer and fall, and snowfields in winter.

There is easy, open and interesting discussion on all kinds of subjects and problems at the lab, and much light fun. Following many days of relevant talk about it, some of the people in the lab have created an "Endowed Chair of Applied Epistemology", put a label of such wording on the back of my swivel-chair, and another label, "Department of Applied Epistemology, D. Fox, Chairman" on the front edge of my bookshelf there in the office-lab. We have a lot of fun over it. As I looked out of my study window on the rainy afternoon of 22 August, 1970, I was reminded of similar vistas in England with green expanses of sward, bearing trees

and flowers, and the eaves dripping.

The Edison House maintains air-conditioned temperatures and humidity, and I am wondering how readily we shall re-adapt to our home environment on our return next year. We miss Ron, Betty and their girls, also Kathy, Al and their little family. But we keep in touch with them all by letters and occasional phone calls.

Alan phoned again the next morning from a Trappist monastary near Dubuque, Iowa, where he was a visitor for about a week. He was leaving the following day, to arrive in Ann Arbor for a short visit, and thence here by the 29th..... He arrived in fact on the 28th, fortunately, for the C. I. S. Staff gave a pot-luck party for us on the evening of the 29th, over in the Nature Center. It was a very enjoyable party, and Alan, on request, played his guitar and sang many songs, to the great pleasure of the assemblage.

On our 38th wedding anniversary we went to Greenfield Village and the Ford Museum in Dearborn. Alan returned to Iowa City September 9 to register for the Fall Semester.

My appointment here is a very pleasurable one, giving time to live deliberately, to think, write, and do many things. It is short of being completely ideal for Miriam, naturally, since she is far away from La Jolla friends and connections. But she is gregarious, outgoing, and has made a number of good friends, including some staff wives.

For me, of course, there are my work and associates. I have opportunities to identify my interests and training with several problems, including the threatened degeneration of lakes.... There has been time for considerable writing as well, and there are invited lectures to be given. I have a nice office space, shared with Jim Wells, the Staff Botanist. But the lab is not equipped with up-to-date chemical accessories of the kind to which I have long been accustomed at La Jolla, nor did I expect to find it so. Considerable material and apparatus has been supplied, however, at my suggestion, so we shall be able to do at least a few significant experiments and analyses together on the Polymnia petal-carotenoids.

I had had but little direct contact before with anthropology, so attended a class in that subject during the fall term, given by Bob Bowen the Assistant Director. It was very interesting and broadening, leading one to reflect that man is a creature who, although endowed with bipedality and increased craniation in common, yet exhibits a very wide diversity of cultures..... which are not necessarily to be divided into better and worse kinds, but merely are different inter se. There seems to be no standard, inflexible frame of basic reference. So what is human evolution?

Considering the intellectual talent, stimulus and breadth of a general kind here at Cranbrook, it came somewhat as a surprise to encounter anything having a semblance of indifference toward maximum potentials in knowledge and the dispensation of it (as well as a degree of insensitivity toward a Senior, visiting colleague's suggestion).

The attitude was punctuated for me on 22 October 1970 while we all sat at Staff luncheon, a regular practice on Thursdays.

Not being myself a "museum type", as I suppose it may be termed, but rather more of an exploring inquirer, I was concerned about the really extra-ordinary, beautiful and extensive collection of rocks, minerals and crystalline specimens in the appropriate wing of the Museum's first floor. That is, the specimens are named, each on a small card, bearing also, in a lower corner, the named site of collection. Vertical lists of some of the minerals, and their chemical names, appear in a corner of each cabinet. But these lists serve far less than optimally to supply information wanted by some viewers.

My inquiry, which I thought was very reasonable, was as to why it might not be greatly advantageous to have the chemical name (and perhaps chemical symbols) appended to each card bearing the centrally placed, common name of the mineral on display. This since many visitors might like to know, for example, that galena is lead sulfide, pyrites (ferric) iron sulfide, vivianite an octohydrate of (ferrous) iron phosphate, and so forth.

The Director's off-hand reply, for all to hear, as he sat next to me (and next to Miriam across from me), was, "If you want that information, you can look it up in the dictionary". I am afraid that my laugh at such a response may have sounded derisive. Actually, I found it appalling in its childishness and lack of sensitivity toward a very reasonable suggestion. We all know the general functions of dictionaries. Hence the reply had constituted no explanation whatever of the reason for the chemical-name-omitting practice; it was merely a recital of a truism, such as one might accord to a child... And in public withal.

Next day I found that a couple of my colleagues on the scientific staff amply shared my own feelings on the matter, in fact it was Jim Wells who raised the subject with me. I gathered that there were two supposed reasons (both poor ones) for not appending the information that I had proposed, namely (1) that it would involve considerable expense (frosooth!), and (2) too much printing on a label discourages some visitors from reading any of the information. This I must hold in question.

I find each of the "reasons" singularly poor ones, and highly questionable. Moreover, were they the real reasons, they could have been given in response to my suggestion, rather that the terse recital as to the function of dictionaries. However, I had replied to Jim next day, in response to his inquiry as to how I had liked the Director's words, that I had merely dismissed them at the time, since that was not the kind of thing that bothered me personally... It must have, however, since I've been writing of it.

When a magnificent collection of rare objects has been expensively gathered and housed in splendid, lighted cases, for the pleasure and education of all visitors, and for visiting mineralogical societies, how can a logical claim possibly be made that adding a few printed words to the labels of specimens would constitute too great expense? This particularly when $2000 has just been paid for a beautiful specimen of black vivianite, or hydrated ferrous phosphate (= $Fe_3(PO_4)_2 \cdot 8H_2O$)?

Moreover, should it be true (and I've not been convinced) that chemical name-labels would, if added to the geological names, cause some visitors to turn away (?), it still seems unpardonable to me that the knowledge-seeking students and countless other visitors, who really would like to have both kinds of information on the same label, are to be denied this privilege.

Not to labor the point excessively, I still find it deplorable to have heard the remark, for such anti-intellectualism is not only pitiable but deadly when carried too far. And what is a so-called "distinguished scholar" supposed to do for his host-institution, if not to try to add something useful, whether by his work, writings, lectures, counsel, or all of these?

There remain areas, perhaps, wherein Humpty Dumpty's tenets are applied, i.e., that words, concepts and definitions mean what he intends.

* * * * * * * * * * * * * * * * *

12/24/70

One misses family members, old friends, and the scenes of home when far away for a year's interval. Yet there are some opportunities such as this one, that one has to grasp, beyond any doubting of it. Moreover, there are new friends, new scenes to meet, new thoughts and ideas to learn and to enjoy. The more friends one has, and the more different countries or environments he is able to know, to enjoy and to love, the richer he is in the end. So, when offered a distinguished scholar's post, in a renowned institution, he asks leave of his children (now grown) and takes leave of his house and his friends for a while.....We shall have scores of colored photographic records of our overall Michigan Chapter.

12/25/70

Christmas morning, and a white one; snow is on the ground, and flurries expected later in the day; temperature outside the back door is 22°. We go today for Christmas dinner with our friends the Clampitts, who are a Quaker family.

* *

As I read over these reminiscences I realize that there has been no account of our sabbatical year abroad at Cambridge University in England, during the year 1938-39. But we decided, as these writings were in progress, that the very best way in which to present the Cambridge interlude would be to type-copy letters written home to my parents in those days. For we still have them stored away. So the plan is to chronologize them and then copy them in large part, thus to freshen again the scene.....

These chronicles would be subject to censorship for undue abbreviation or even negligence were they to include no more than passing reference to the major features of the life that I knew in La Jolla, and particularly at the Scripps Institution, beginning in the early thirties.

I well remember meeting the Director, Dr. T. Wayland Vaughan (whom I had merely seen earlier, at a winter meeting of the Western Society of Naturalists at Pacific Grove, at the end of 1929). This more notable occasion was at a National A. A. A. S. meeting, held at CalTech, Pasadena, in June of 1931. A southern-aristocratic type, eagle-eyed he was, of medium height, bald as an egg, with white moustache and goatee. When I was introduced to him, he already seemed to have heard enough about me to suit his own template, for when Dr. J. Murray Luck, my research supervisor, had seen me earlier that morning, he had told me that he had breakfasted with Dr. Vaughan, who was going to offer me a job! At the introduction by Murray Luck, Dr. Vaughan's sharp blue eyes searched my own with renewed interest and deeper focus as he heard my name. He offered me at once an Instructorship in Physiology of Marine Organisms, at $2200 per annum, on a 12-month appointment, including 4 weeks' yearly vacation.

He told me that I was to come down to La Jolla by bus, stay at La Valencia Hotel there, and visit the Institution, immediately following the end of the Pasadena meetings, and afterward to submit my bill for travelling and subsistence expenses to the Insitution.

This I did, meeting Claude ZoBell there again as I had briefly in Pasadena through Dr. Vaughan. We accepted our respective, parallel instructorships, mine to begin September 1, 1931, and his January 1, 1932.

I returned to Stanford to finish my doctoral dissertation on the chemical and physical aspects of carbon dioxide narcosis in living cells.

Late in August, my father drove down to Palo Alto (Mayfield, actually, where we lived), to help me pack some things to take south with me, others to store, and still others to dispose of. Then, after a short time visiting in Berkeley with my parents, and at Stanford Hospital in San Francisco with Rosemary, I took off in my 1925 Model T Ford Coupe for the Southland of California.

I drove through the hot Salinas Valley, on old Highway 101, without mishap using the Ruxtell gear for ascending grades. And I visited my brothers, Art in Los Angeles and Jack over in Pasadena and thence down the highway to La Jolla, where I was put up in the Vaughan's home on the campus for the first night or two, by which time I had located a room in the home of Mrs. Dora Copeland. Her daughters Connie, Frankie and Dorothy lived there, also a carpenter friend Phil Burke (whom Mrs. Copeland later married) and a young plumber Karl Klein, who later married Connie. In mid-December of that year, Rosemary's life ended.

There I lived until the following August, 1932, when Miriam and I were married in Boulder Creek, California (her father, a methodist minister) officiating. We returned to La Jolla, where we lived at first in an apartment on the ocean-front.

La Jolla was a beautiful village, where life was very leisurely and quiet, even sleepy, as some said of it. There were some 4500 residents in those days, and much land immediately north, south and east of the village was completely undeveloped. . . . O! Tempora! O! Mores!

La Jolla had but one elementary school, which still stands, now somewhat enlarged, and supplemented by others in various locations. There also was, and still is one public high school, also now much expanded (and becoming antiquated and perilous). The Bishop's School, a private institution for girls, still stands too.

All four of our children went to the elementary school and graduated from La Jolla High School in their turn, and Alan, the youngest, spent some early years in a private school there before transferring over into the public school system. Faculties everywhere seem to comprise a sort of mixed bag, of course: there are some great, dedicated teachers, and others rather poor at their jobs, some unbelievably so, regrettably. We and our children came to know both kinds. . . . Still, I believe that one's overall attitudes and sense of relative values derive to the greatest extent from the home, and from certain teachers here and there, to a secondary extent. Young people are very able to discriminate between greatness and the real lack of it in adults, and often tend to emulate those other

people who seem to be most like their own (the children's) parents in attitudes and deportment. Each of us can remember, even after many many years, the names, faces and voices of fine teachers of long ago, as well as the qualities of the less felicitous ones. (More's the pity.) As I sometimes felt that I had to reply to my children, following some comment about the behavior of an adult in authority, "That was an example of how not to behave when you are adult."

La Jolla also had a movie house (The Granada), post office, several churches, a few banks and a main street, Girard Avenue, now a bustling site. It was a silent village indeed when one walked the safe, darkish streets at night.

The Scripps Institution of Oceanography, a couple of miles up the coast from downtown La Jolla, had a library building dating back to about 1916; Scripps Hall and laboratory erected in 1909; Ritter Hall just being completed in 1931, named after the first Director, William E. Ritter; a small aquarium across the way from Ritter Hall, and a museum on the first floor of the library building.

The 1000 foot pier had been constructed in about 1916, as had a couple of dozen cottages which housed numerous staff members, graduate students and maintenance personnel.

An alfalfa field east of the library building accommodated a cow or two, whose obbligato solos could be heard from lecture rooms during classes in the forenoon. A coal-black cow, Pinky Belle, belonging to the Bill Simmons family, had an especially loud moo. The tight colony, like most such communities, received the pulse of any personal news items with the rapidity of an electric current crossing a wire network, and gossip could be extensive at times. It was not easy to keep clear of the busy, sometimes inventive 'grape-vine' in those early days.

The La Jolla campus of the University of California had six faculty members before I arrived. These were:

George F. McEwen, Professor of (Physical) Oceanography

Erik G. Moberg, Assistant Professor of (Chemical) Oceanography

Francis B. Sumner, Professor of Biology

Winfred E. Allen, Assistant Professor of (Biological) Oceanography

A. Haldane Gee, Assistant Professor of Microbiology

Dr. Gee resigned shortly after my arrival, to accept another position, apparently contemplated for some time previously. But the number of faculty people returned to seven with the arrival of Claude ZoBell late in December, to join the academic staff on January 1, 1932.

Percy S. Barnhart, who had a master's degree in zoology, and had once been an assistant professor at U. S. C., was Curator of Fishes, and had charge of the biological collections in both aquarium and museum.

Tillie Genter and Ruth Ragan served as secretaries and librarians, and Ruth McKitrick as well. James M. Ross was superintendent of Buildings and Grounds, and Murdoch Ross (no relation) Captain of the small research vessel "Scripps".

When I arrived at the Institution to take up my duties, there were about seven graduate students enrolled on a regular basis. These were Easter Cupp (phytoplankton, with W. E. Allen), Earl H. Myers (foraminifera, under T. W. Vaughan, and C. A. Kofoid at Berkeley); Eldon M. (Judd) Thorp (geology, under T. W. Vaughan); Nelson A. Wells (fish biology, under F. B. Sumner); Richard H. Fleming (marine chemistry under E. G. Moberg); Roger R. D. Revelle (geology under T. W. Vaughan); and Maynard Harding (marine chemistry with E. G. Moberg).

All save Dick Fleming and Roger Revelle, who had arrived that same summer, had been there for some years earlier. Miss Cupp, Myers, Thorp and Wells finished up their doctoral degrees in 1934, Fleming in 1935, and Revelle in 1936, all from the Berkeley campus, since our small organization at La Jolla had no degree-granting status in those early days as it has now. Harding left without proceeding so far as a doctorate degree.

Claude ZoBell and I each felt fortunate to have good university positions during the depths of the great economic depression, which had begun with the stock-market crash late in October, 1929, and lasted into the late thirties. Many well qualified men, some with doctoral degrees, were idle for want of jobs, or were hired for rather minor kinds of work.

Our instructorship salaries were very good pay in those days, and we received raises at the beginning of the next academic year, my salary then being advanced from $2200 to $2400 per year, the top level for the instructorship, but not necessarily permanently, in view of the strictures applying in this year of 1971.

Each faculty member had at least one research assistant assignable to him, often, and most desirably a graduate student seeking an advanced degree. Since there was no candidate on hand for a student-assistantship in my laboratory, I accepted in 1932 an application from Graham W. (Wally) Marks, who had been a graduate student at Stanford during my own days there, and who had taken his Ph. D. in chemistry at about the same time as I had received mine in biochemistry. I felt unhappy to see him take a research assistantship at $1200 per year, while I, only a year or two older, had an instructorship at twice that figure. But he

needed a job urgently, accepted it and, as a bachelor at the time, was able to make it do, fiscally at any rate. As might have been predicted, however, it was not a felicitous arrangement, and after some three years of survival on the job, rather painful mutually, Marks gained employment elsewhere, and all were happier. He died in San Diego in 1970.

Bradley T. Scheer was my first doctoral student and research assistant, coming to La Jolla in 1936 and finishing up in 1940, receiving his Ph. D. in comparative physiology at Berkeley. Bradley, like the great majority of my former students, has remained warmly affable, friendly and appreciative over the many years.

Dr. Vaughan remained as Director at Scripps from the time of his arrival in 1924 until his retirement in 1936 at the age of 66. He ruled the general activities of the Institution with a very firm hand. Some people considered him to be rather austere. But although he exhibited a considerable degree of both autocracy and pride, he also was very humane, and interested in the individual welfare of everyone there. Although I did not always agree with his policies, I always respected him and liked him cordially.

The colleague who had the greatest influence upon my professional growth at Scripps was Francis B. Sumner, whom we all knew as "F. B. ". It was he who introduced me to the whole general subject of animal pigments, and with whom I conducted joint researches on the subject for the first several years. Moreover, the Sumners were very outgoing, hospitable and cordial friends to us and to many others.

It was F. B. and I who, calling in Roger Revelle to join us, founded a discussion club, of "town and gown" people, about 15 in average number, in November, 1935. This club met at triweekly, later monthly intervals for serious discussions, usually at a professional level, in the homes of its members. It has continued through the 36 years since its founding to this date. Throughout F. B. 's life the club never had a name, but on September 6, 1945, the day of his death, we nevertheless kept our meeting date at the home of Francis Shepard that night, knowing that F. B. would have so wanted it. And at that meeting we named the Sumner Club, as it is called today.

I suppose that I could go on and on about the old days at Scripps, finding it difficult to stem the flow of old memories. There were so many facets.... But I likely may come back to the subject in these somewhat disconnected review of the scene.

It is a most unique satisfaction when one receives unexpected complimentary reactions from people who have listened to a lecture, or who are making an introduction to those who are to listen.

Thus, when I talked to a group of 60 or more boys and girls in tenth, eleventh and twelfth grades, comprising a young peoples' group at the Presbyterian Church in Birmingham, Michigan, I looked into attentive, listening countenances, and afterward received a loud and protracted applause, followed by many questions, and felt something of what I am trying to describe.

When bright, intelligent young people of high-school age come up and declare that they have been inspired, and their appetite for further knowledge whetted, the speaker knows that this is genuine, and that his hoped-for purpose has succeeded. One never knows when he might have touched off a vital train of thought and purpose in some young mind.

And when, afterward, the adult leaders told me that the students' response on this occasion exceeded their reaction at any earlier such event, this was reassuring, even when one reflects that the chairman's enthusiasm of the moment might have erased memories of past comparable events to some degree. It all makes for a feeling of gratification quite separate from what one might feel after talking to college classes of students who are older and less spontaneous. An unexpected dividend it was.... For young people of that age do not pretend. Sincerity looks out of their faces.

Talking to advanced university students has been a large part of my professional life, for I've not given classes to undergraduates in my position. And I always have enjoyed the contact with my grad students, in the lecture room and in the laboratory, as well as in informal settings. Part of this satisfaction has come when I have been a guest lecturer at universities other than my own, and when there have been grads, undergrads, and staff people present.

When a professor at such another institution has introduced me as a scientist with a breadth of active interests, and with a contageous enthusiasm for the subject under discussion, this, while perhaps a demanding assignment, has been another source of warm gratification. Far from engendering mere pride within me, it rather has served to make for additional striving to deserve the praise. Integrity must remain the spur.

We are richer persons in proportion to the number and variety of people, places and activities that claim our memory and love. In this regard, I reflect on many things, past and current, which often occupy memory's senses and claim eternal affection. Thus:

Napa, in the vicinity and town of which I grew from age 3 into adolescence, passing the early years on the little farm some miles outside of town, where I came to know and to live Nature; the town itself, where I enjoyed boyhood friends whose present whereabouts are long beyond my ken.

Berkeley, where I finished high school, made many lasting friends, enjoyed some early loves, and attended the great University of California. And that University, large, varied, thrilling in its open spirit of search, inquiry and challenge and its unique beauty, was to claim my active academic career from 1931 until 1969, when I became a professor emeritus. And even after that.... But the actual connection was at La Jolla's Scripps Institution of Oceanography. La Jolla, where our four fine children were born, and graduated from the La Jolla High School, each in due turn, and where my roots are too deep now for any cursory description.

Stanford University, my other alma mater whence I received my doctoral degree. Relatively quiet, very friendly, even intimate, Stanford was, in my graduate days there. I came to know and to love a number of professors, and made some lifelong friends among peers. Steve spent his only college year at Stanford, in 1953-54. Ron's alma mater is U. C. Berkeley, like my own.

Cambridge University, where I spent a sabbatical year in 1938-39 on a Rockefeller Research Fellowship, and which I have since visited several times and where I've many friends (not all now living), has a warm claim on my lasting affection.

The University of Iowa, where Alan is spending his fourth consecutive year, is a sound, civilized, warmly receptive and prestigious institution, to which I have become attached as well, by association.

The Scripps Institution of Oceanography, an integral and unique part of the University of California since 1912, is where my roots penetrate deepest, from my 38 continuous years on the faculty, where I was instrumental in contributing in some small measure to its growth and history, and where I supervised a good number of doctoral young men, who pursued their researches in my laboratory and wrote their dissertations there. A number of these chaps are rather like additional sons.....

The San Diego Zoo, its fine animals and its warm, friendly, helpful personnel, from my longtime friend Charlie Schroeder, the Director, to the individual keepers, has claimed a hold on my deep affection since my first days in the area, forty years ago. All of our children, many friends and guests, have seen the Zoo many times with us. Steve worked as an assistant keeper in the bird

department for his final two summers of his life.... Not only has the Zoo been a major factor in our successful pursuit of researches on exotic birds' pigmentation, but it has been an object of lasting appreciation and affection in its own right, as a home for many fine animals. Somehow, I count all of these animals among my friends.

And now, Cranbrook Institute of Science, where I was suddenly invited on one August day in 1969, to come as Distinguished Scholar, is another stimulating site, with high aims, a cordial, family-kind of atmosphere, and a fine reputation. Its history makes good reading, for me rather in particular perhaps, for not only was it founded by the same great Scripps-Booth newspaper family, some of whom created my home Scripps Institution at La Jolla, but the original English town of Cranbrook (from Crane Brook), after which the Institute is named, is situated in Kent, not more than about 10 or 12 miles from the village of Udimore in Sussex, my own birthplace.... so I feel somewhat as thought I had been trajected through a giant arc of time and space, to pay my extended visit here.

Some very special places of professional growth

Berkeley. Pioneering, challenging, stimulating, precious. Home of the first University of California campus (founded 1868, out of College of California). Bordered by rounded, green hills to east and North, by San Francisco Bay out to the West. Across the bay one may view the skyline of San Francisco by day, her twinkling lights by night; also the great bridge, and the majestic Sleeping Beauty-Mt. Tamalpais, over in Marin County, as a silhouette against the blue skies..... Berkeley with her mild, confortable climate, sometimes with a canopy of fog in the mornings, often with a western afternoon breeze. Stimulating it is, to the whole man, and with a deep, lasting appeal. Site of my beginning appetite for learning, Berkeley. "Fiat Lux".

Stanford. Quietly peaceful, contemplative, intimate; steadily inspiring to the pursuit of knowledge. Home of Stanford University (founded 1894), lying peacefully in the valley at the base of San Francisco Bay. Oaks grace the low, rolling hills, and many faculty homes are on the spreading campus. Very warm summers, sometimes frosty in winter or early spring. A spirit of warm friendship, of camaraderie prevailed at Stanford, where I received the doctorate in 1931. She has a beautiful chapel. "Die Lufte der Freiheit Wegt".

Old Cambridge, in England, where we spent a very special year (1938-39) at the second oldest university in Britain, founded in about the 10th century by Oxford monks. The skies of Cambridge-shire are reputed to be the widest in all

of Britain, so plane is the green terrain surrounding, with the River Cam - Grantchester River, the green meadows and fens, with their browsing cattle and bordering hedgerows. Gentle rains and warm sunny days of spring and summer; A signal year it was for us, with our two little boys. And I've revisited it several times since then: 1949, 1955, 1958 (with Kathy), and 1966 (with Miriam, her first revisit), and ever returned with love and deeply happy memories, tinged with sadness, for Steve had been taken from us, and I saw myself in memory's eyes in those after years there, walking across the fens with a little lad on each side. And it never will be the same again also since the death of my dear longtime friend Carl Pantin, latterly the Professor of Zoology there. He died in January, 1967, and my lecture that day, after hearing the news, did not go well. Cambridge's motto: "Hinc Lucem et Pocula Sacra".

And now Cranbrook, in Bloomfield Hills, Michigan, surpassingly lovely, green everywhere, save when white in winter, and colorfully charming. Like England, Michigan is also flat, green, softly rainy many times throughout the year. But it is far hotter, and more humid at times. In Oakland County here there are some 1100 lakes! A civilized, refined, intimately friendly community. Named after Cranbrook in Kent, England, home of the founders, where that town named for its site on Crane Brook, and the town mascot, depicted on a sign in the village, is a standing crane.

And oh, La Jolla, the Jewel City on Southern California's coast, where we spent 40 years (39 to date for Miriam), minus the year 1938-39 in England, and 1970-71 in Cranbrook. In La Jolla we see lovely mountains not far distant, and desert country also is near, and the blue waters of the Pacific we can see from our windows, both at home and at the laboratory-office area. Lovely climate, with some fog, but little compared with elsewhere. Afternoon breezes come from the sea west of us. Seldom is the weather too hot or too cold. Seasonal changes are not very pronounced. Our children, all born there, went through the schools. My professional growth was there, and our roots are deep.....we feel permanently integral parts of the University, which grew into U. C. S. D. during our years there. A goodly number of students, who conducted their doctoral researches under my supervision and guidance, now are scattered far and wide. And now one, Elliott Smith is to come, on my recommendation, to Cranbrook this summer as Edison Fellow.

Belonging

Many years ago I used to hear a charming, eloquent minister, a native of Alabama, say in his soft, southern voice, "Every day is a great day if we have eyes

to see, ears to hear, minds to understand, and hearts to appreciate." Somehow these words seem best to summarize my reflections at the end of a unique year of my life as a visiting scholar at the Cranbrook Institute of Science. There have been so many new vistas, activities, displays, programs and people to see, hear, come to know and appreciate, that any early sense of being a pilgrim quickly gave way to a feeling of having been absorbed. Of belonging. Human interchanges were objective, sincere and cordial; often affectionate.

Each of us is an intimately integrated unit of our environment, wherever that may happen to be. The whole transcends a mere sum of its parts, notably when these are dynamic parts. Whether we think of a ship, exchanging physical and cultural treasures at a port; a team of astronauts visiting the lunar surface; or a decision-making visit between persons, in every instance the migrant, the resident host (or place), and the migrant's eventual home-base, all are altered as a consequence.

Moreover, these changes are not merely ephemeral, but share a part of timelessness. Thus it is that I feel about our sojourn at Cranbrook. I shall have become, in some degree, a different person as a consequence. Hence, as I return to my home-base, Scripps also will undergo change. And Cranbrook itself also will of necessity have become altered, in whatever minor degree, by the association.

Cranbrook will have become a finite part of me for the rest of my life. I like to think also that each and all of us who have been greater or lesser parts of the Institute through the years shall have acquired, as a result, a kind of perpetually enduring existence as the work and growth of Crankbrook survives our own life spans.

Exituri, vos salutamus.

Thoughts on the Distinguished Scholar Program at Cranbrook Institute of Science

Denis L. Fox

This specially conceived program seems to be unique, or certainly rare, in institutions of learning in this country. True it is that various universities have visiting professorships and endowed chairs, but such appointments more often than not require that the faculty member so honored shall perform a certain amount of teaching, and sometimes certain administrative functions. The appointment at Cranbrook, on the other hand, is for emeritus professors or professors on sabbatical leave, to whom it affords ample opportunity for reading, studying, writing, hearing or giving lectures, and pursuing certain kinds of research. The Scholar is afforded maximum freedom. He has a good stipend and is provided with the fine, large, modern Edison House, rent-free including utilities, and in a beautiful setting on the campus.

The chief attraction of this environment for the visiting pro tem staff member assuredly is the fine personnel of the Institute. We found outgoing, cordial hospitality and friendliness in all, and a kind of familial spirit within the Institute.

The kind of scholar who doubtless will profit most, and who will enjoy most his period of tenure at Cranbrook is one whose training and interests have been developed along broad lines. My own academic background in biochemistry, also in comparative biology of plants and animals, and their ecology, was, I feel, amply useful in my associations, conferences, and some jointly conducted researches during my period at Cranbrook. And the year has passed unbelieveably fast for me.

There are authorities in such areas as zoology, botany, ecology, physics, and anthropology, with all of whom I have enjoyed association. Two fields that one would like to see ultimately represented in addition are chemistry (biochemistry) and geology.

I was able to sit in two ten-week adult evening courses in anthropology. I had previously done no formal work in the subject, so, with an excellent teacher, Robert Bowen, I profited greatly from the experience.

I felt also that there had been fruitful opportunities for exchanges in the general realms of plant and animal biology and lake ecology.

I was able to finish five scientific papers at Cranbrook, i.e., three fairly substantial reviews and two research papers, the latter jointly with Dr. James R. Wells. Between the end of July 1970 and early March 1971, I gave ten lectures at

various universities or local organizations.

(Let me apologize here for what may begin to appear excessive use of the first person; but it hardly is avoidable.)

Memo to Dr. Wittry re: general activities as a visiting scholar at CIS, 1970-71
From: D. L. Fox

It has been a great year in so many ways for us here at Cranbrook and environs. I outline below some of the things that helped to characterize the interlude.

Papers written at Cranbrook by D. L. F.

1. "Biological Pigments." Entry for Encyclopaedia Britannica (completed at Cranbrook).
2. "Factors in the Coloration of Birds" (accepted for the Explorer). now published 6/71)
3. "Schemochromic blue leaf-surfaces of Selaginella," with J. R. Wells, (accepted by American Fern Journal).
4. "Petal and pollen carotenoids of two Polymnia species and their hybrids," with J. R. Wells (accepted by Taxon).
5. "Chromatology of Animal Skeletons" (for American Scientist).

Dates and Places of Lectures by D. L. F. while at Cranbrook

1. July 29, 1970. Univ. of Michigan Biol. Station. Douglas Lake Summer Series.
2. Nov. 18, 1970. Oakland Univ. Chemistry and Biology Seminar.
3. Nov. 20, 1970. Oakland Univ., Invertebrate Zoology Class.
4. Dec. 10, 1970. Cranbrook Lab., Dr. Wells's Oakland Univ. Botany class.
5. Jan. 15, 1971. Cranbrook Members' Lecture.
6. Feb. 7, 1971. FOCUS (10-11-12 grade students). First Presbyterian Church, Birmingham.
7. Feb. 8, 1971. Wayne State Univ., Biochemistry Dept. seminar.
8. Feb. 17, 1971. Univ. of Mich. Combined Botany and Zoology seminar.
9. Mar. 3, 1971. Queen's Univ., Kingston, Ontario. Chemistry Dept. seminar.
10. Mar. 4, 1971. Queen's Univ., class in Marine Chemistry.

There also were two or three recommendations, published from here in the Press, concerning preservation of the natural environment (lakes and rivers), and the duties and effectiveness of professors in serving their communities as well as their students.

There were numerous advisory conferences with students, in high school, in universities, and at the Cranbrook Art Academy.

A recommendation was made, and ultimately endorsed by Mr. Henry Booth of the Cranbrook Foundation, relating to the revival and perpetuation of the ponds

immediately south of and communicating with Europa's Pool at the Art Academy. The proposal involved clearing these ponds, as well as the deep trough on the north end of the first pool; filling the latter trough with cement, so that it shall not in future consitute a site of collected, rotting detritus feeding into the pools; and furnishing the cleaned pools with a firm bottom, such as gunnite, in order to facilitate future periodic cleaning out of organic-rich silt. This work, beginning with the immediate clarification of the water (of suspended sulfur) following the initial cleaning of the contaminating trough, has been continued by drainage of the successive pools and removal of the bottom muddy deposits.

As mentioned above, I have greatly enjoyed attending and participating in the beginning and advanced classes in anthropology, conducted by Mr. Robert Bowen, an excellent teacher. Moreover, my wife attended his beginning course during the second term with great interest.

* * * * * * * * * * * * * * * *

If, after trying to convey the experience of personal warmth, the intellectual stimulation, beauty and other virtues encountered at Cranbrook Institute of Science, I were asked whether, as a visiting scholar, I found any features on the debit side, my response would be chiefly concerned with possible improvements in the physical accommodation of an extended-time visitor within the Institute. I do not think that this would be demanding of resources. For, although one may find, as I did, a cordial and cooperative spirit on the part of all, and specifically in a fellow-scientist whose office and laboratory had to be shared, such an arrangement hardly can fail to leave some desiderata.

Considering the telephone, for example, it would be more time-saving and indeed better in many ways, were there such a facility installable for the specific use of the visitor, i.e., rather than having a single line to accommodate four staff members distributed in two or three neighboring or adjoining rooms. When the phone bell rings, someone must interrupt his work or conversation to answer, of course. The visiting scientist feels some embarrassment when a scientific colleague must serve thus as an answering and summoning agent for him. Conversely, it is interrupting to feel obligated to take various phone calls (some of them trivial) for others in their absence. There is, moreover, the matter of the instrument's location. When, as in the instance at hand, it is installed on the desk of a colleague, and when the colleague happens to be writing, conferring, or otherwise engaged there, one feels uncomfortable about having to wedge himself in to answer or to make a phone call. Moreover, should it happen

that either occupant were telephoning about personal or other confidential matters in response to a call, both he and his colleague (who might have a visitor as well) could greatly prefer to be more alone.

Visitors, calling on one or the other of a common office's occupants, may thus introduce potential features of distraction for the passive member at the time. This especially should the communication be largely unilateral and protracted, or else animated, or concerned with confidential matters.

It may well develop, as it fortunately did with ourselves who shared a common office-phone-laboratory here, that two people thus housed shall find common interests, leading to joint research effort, and hence to gratifying productiveness. But even if this be so, it could be accomplished equally well, perhaps even better, were the principals to occupy neighboring offices, perhaps with a laboratory in common.

One additional contingency of potential importance is the optional temperature to be chosen for working space. Persons of differing physiological makeup may feel desirous of, and somewhat dependent on, different environmental temperatures, depending perhaps on their respective home climates or on their individual activity-drives. Thus a room may be completely comfortable for one occupant, but either distractively close or infelicitously drafty for another, depending sometimes on location of desks. If the resident member, or proprietor, may enjoy and therefore opt for a given set of conditions in a room of common occupancy, then the average visitor tends to be placed under a degree of restraint about initiating or suggesting changes. All of us know these things, and I've been reminded of them occasionally here.

A visiting scholar somehow deserves to be accommodated in a single office-room, even if a rather small one, where he can adjust the temperature and allied environmental features; he may close or leave open his door, whether in or out. And, unless he can be summoned individually to a nearby phone, e.g., by a secretary's bell or buzzer, he ought to have a jack in the office, whereinto a telephone instrument may be plugged, equipped with an individual extension. It should not be too much of a fiscal output to provide the suggested facilities for a visiting scholar who is appointed with such otherwise generous arrangements. I feel these sentiments would be shared by all people concerned.

Jim Wells and I have discussed this whole matter in an open, friendly, and objective spirit, and I am giving him a copy of this memo.

We have discussed also, on several occasions, the acute importance of security of laboratory space, i.e., during hours when the regular occupants are

away. When a chemical laboratory is allowed to be accessible to others beside the incumbent(s), it always develops that reagents, equipment, and tools become misplaced, if not removed by visitors who enter the lab during off-hours. This contingency can become a source of profound inconvenience, which I never have suffered elsewhere, since working space always has been secured by key, against the contingency of off-hour visitants.

I am confident that anyone doing research involving some chemical work on the second floor here would soon feel sensitive to irregularities perpetrated by other persons who may enter the facility, with zeal and fair enough intentions, perhaps, but without an applied sense of responsibility.

A desirable innovation would be in the appointment of some able helper, even on a regular part-time basis, to keep laboratory glassware cleaned, dried, and stored ready for use.

And now, in the light of continuing recommendations and the direction taken by current developments, I should like to offer my own views regarding some choice, as defined by fiscal considerations, between the appointment of a broadly trained biochemist as a permanent member of the CIS staff, versus the policy for continuing an annual year-long Visiting Scholar program.

The alternatives are, of course, not equatable without reservations as to relative advantages in each category. Nor are they mutually exclusive, save insofar as budgetary considerations could not at present include both appointments on a <u>fulltime</u> scale.

While I can amply appreciate, at first-hand, the benefits, on a potentially mutual basis, in the annual year-long tenure of an established scholar at Cranbrook, whether emeritus or on sabbatical leave from his university, I must, after thinking on the problem, confess that, were I the Director or a Trustee, I should lean considerably toward the acquisition of a permanent young, vigourous, well and broadly trained biochemist who gave promise of advancing our research program, i.e., in preference to the appointment of an older scientist who might come chiefly to relax and to write.

Not at all that the distinguished scholar program should be discontinued. But if, for example, the biochemist-ecologist were to receive a starting salary at the level of that paid an assistant professor, i.e., comparable to mid-rank in one of our better state universities, and if a minor portion of his salary were to take the form of free or greatly reduced rent (say in the Edison House), then it should be possible still to appoint a scholar for part of the year, if only for three or four months at first.

I am not at all sure that it would pay to appoint two pre-doctoral students at the outset if their stipends had to derive from intramural sources. Rather, I should explore for promising graduate students, notably at Michigan, Eastern Michigan, or Wayne (or indeed any first-rate institution) working toward advanced degrees, and permitted to do their research largely at Cranbrook.

For the purpose, the staff member under whom such students were pursuing their research here might enjoy a courtesy-faculty title at the student's home institution. Such practices are well known. The graduate students' stipends might logically derive either from externally-supported fellowships or research assistantships from their own university, while Cranbrook would be furnishing laboratory space, equipment and overhead. Cranbrook might be able to share the allocation of a stipend for an occasional graduate student, e. g., during summer periods. This notably if we should succeed in acquiring more extramural support.

If the stipend for a visiting scholar is as much as $12,000/year , plus rent-free living accommodation, then perhaps a staff biochemist, receiving say $10,000 plus gratis living quarters, should still leave some $2, 000, or enough for two to three months yearly for a scholar on a part-year basis. This might well be quite realistic. It might appeal strongly to able scientists interested in a three-month research summertime interval.

I would stress once again the desirable qualifications to be hoped for in a new permanent appointment. To hire a straight physical or inorganic chemist, if only one vacancy were available, would be buying a man over-qualified in one direction, and not sufficiently qualified in other respects, and thus less profitable by far to the research program, in my opinion, than to obtain the services of a well-trained biochemist who should also be a biologist who knows living organisms; that is, a man who knows the general field of biochemistry and the kinds of laboratory methods used in investigating the qualitative, quantitative and metabolic features of animals and plants, within and in relation to their environment.

While most biochemists admittedly are either molecular biologists of the DNA-ster type, or medically, microbiologically or agriculturally slanted men, one can find also the kind who, whatever their starting area might have been (e. g., microbiology, plant or animal biochemistry) still have retained a broad and penetrating interest in what may be called the overall metabolism of lakes, rivers, bays or other water-bodies.

Moreover, a chief quality in any new appointee, needless to add, is an outgoing spirit of friendship, harmony and willing cooperativeness in all areas;

a willingness both to instruct and to listen and learn. The Cranbrook staff has excellence in such regard, and it should be sustained at all costs.

It was for each and all of the foregoing considerations that I recommended Dr. Elliott Smith. * There doubtless would be others who could fill the particular bill, if they could be discovered and objectively examined. He is the best one of whom I think. I'd appoint him, were I in charge, even if I had to lessen to some degree the distinguished scholar program in order to get and keep him. And I do not make comments like these about all of my better students.

* * * * * * * * * * * * * * * *

Should the day come when additional staff might be added, Cranbrook could profit, of course, by having a young geologist and a young ornithologist, both full-time.

Finally, I can say with complete candor, that, were I a young and vigorous man in Elliott's* position, also knowing what I do of Cranbrook's aims, background, personnel, and intellectual level and attainments, I should grasp at once the opportunity to join its staff, knowing that the position had much to offer both intrinsically and as a prestigious entry on my professional record at any time.

*P. S. I've just been advised, to my tremendous gratification, that Elliott Smith has been taken on, to arrive in about a couple of month's time. Congratulations to him! And to Cranbrook! (Also, should any of the neighboring schools need a good teacher's services, Susan has had good experience.)

Condensed reports of our drive to and from Michigan from La Jolla: in 1970-71. From La Jolla, California to Bloomfield Hills, Michigan: 14 1/2 days, counting certain stopovers at Denver, Colorado, Emporia, Kansas, Ottumwa + Agency, Iowa and Iowa City, Iowa.

Tues. Jun. 30: Lv. La Jolla: arr. Las Vegas, Nevada

Wed. July 1: Reached Zion Canyon, Bryce Canyon; examined Bryce next morning and proceeded to Price, Utah.

Thu. July 2: via Loveland Pass in the Rockies to Denver, Colorado, staying with Phil and Ruth Perdew, Miriam's brother and his wife, for the weekend. Saw some bison.

Mon. July 6: Reached Hays and Fort Hays (good museum); saw some bison.

Tues. July 7: Reached Emporia, Kansas, met Elaine Kale, friend of Alan's, who had a picnic arranged for us. Stayed an extra day.

Thu. July 9: On to Albia, Ottumwa and Agency, Iowa (all towns of Miriam's girlhood) staying between Ottumwa and Agency, visited old cemetary and tomb of Wapello, chief of the Fox Indians; lunched with Edith Callen down in Iconia, Iowa.

Fri. July 10: via Mt. Pleasant (another town where Miriam once lived) on to Iowa City, whence Alan had departed for the summer and had seen us in La Jolla; stayed with Dick and Lydia Wilmeth over weekend.

Mon. July 13: On across central Illinois and through a piece of northern Indiana (less attractive even than Illinois) and up into southern Michigan to Niles, for an overnight stop.

Tues. July 14: (Bastille Day): arrived in early afternoon at Cranbrook Institute of Science, Bloomfield Hills, Michigan, in very warm weather, capped by a good rainstorm while we were taking our things into Edison House, the dwelling furnished us for our year's stay.

From Bloomfield Hills, Michigan to La Jolla, California: 22 and 1/2 days unhurried travel, with many stopovers.

Thu. July 8: To Kalamazoo, overnight stop with Mary Perdew, Miriam's sister-in law.

Fri. July 9: To Iowa City until July 12, staying with Dick & Lydia Wilmeth again, and visiting often with Alan and Carol.

Mon. July 12: To Sioux Falls, So. Dakota, stopping overnight.

Tue. July 13: On to Wall, So. Dakota, saw a melodrama in evening.

Wed. July 14: Reached Custer, South Dakota. Saw Badlands, Mt. Rushmore and Crazy Horse.

Thur. July 15: Arrived in Medicine Bow, Wyoming, site of my father's 2-year sojourn on a cattle ranch, in 1885-87.

Fri. July 16: Reached Denver, staying again over a weekend with Phil & Ruth Perdew, picnicked above timberline in Rockies, saw an Indian pow-wow in evening one day.

Mon. July 19: Reached Riverton, Wyoming.

Tues. July 20: Reached Jackson Lake in Grand Teton National Park.

Wed. July 21: Took bus-boat-bus tour around park and Elk Island.

Thurs. July 22: Reached Helena, Montana, visiting Kathy and Allan Quist daily for the following week's interval, seeing many places with them. Much pleasure seeing the grandchildren.

Thurs. July 29: Reached Pocatello, Idaho.

Fri. July 30: Arrived Cedar City, Utah.

Sat. July 31: Reached San Bernardino, Calif. in about mid-day, stopping to return next day, when our house was to be free for our occupancy.

Sun. Aug. 1: Arrived home in La Jolla, and most happy about it.

O Medicine Bow!

Across th'eternal plains of Wyoming, ancient home of the bison,
The antelope and the earliest Americans,
We travelled to reach the old settlement of Medicine Bow,
First wrested from the Indian by the white man
In the latter sixties.

For I needed to view the bordering scenes, of Mountains
And plains and grasses, all looked upon
By Jack Fox, my father, as a youth, becoming man
Full fourscore years a-gone, and more,
While he worked with cattlemen of the Western frontier.

There you spent a biennium, father, only nine years
After the loss of Custer and his men
At Little Big Horn, at the hands of Crazy Horse
And his braves, who loved the land.
And there you mused on the scenes and the days that were gone.

I had heard you tell of Elk Mountain,
Whose noble rise commands the distant view;
And I scanned the horizon at Sunset,
And again in the morn of next day.
And I thought of yourself in the long past days.

And I silently thanked you again
For absorbing the life and the scenes
Of this country; so much so, indeed,
That you later returned here to settle
With your children to grow up Americans.

O Medicine Bow! Long years have passed;
Fourscore indeed, and more,
Since you ushered the spirit and mind of a youth
Into young manhood's door.
Your contiguous plains he rode, and saw
Afar, Elk Mountain soar.

He tasted America's freedom there,
And loved the campfire's glow.
He loved, and wrote of the men of the West;
Heard the winds of the seasons blow.
And his love for this country, which lured him back,
Was born in Medicine Bow.

July & August, 1971

Sea Anemones

Metridium, flower-animal of ocean's rocky floor,
Creation of splendid beauty in your world of shadowed light;
Garbed as you are, with feathery crown, in bridal white,
Or bright vermillion, rivalling blush of tropic blooms;
Or else, again, in dusky tan or brown attired;
Sometimes in varied shades of all these hues;
Indifferent, yes, to all adoring eyes, but e'er
Exponent of intrinsic loveliness.

Your secrets, some of them, you gave to me;
Indeed your life was forfeit in the giving.
Your home was thus the poorer for your leaving.
Yet you endowed our knowledge and affection.
Indeed, when life's last hour have one day struck,
I'll not wish this old casing put to ground,
Where garden-blooms, if placed or planted 'round
Might decorate a plot of earth. For why?

I'd fain prefer to have my body's cinders
Cast back into that world that we both know,
Where you and all of yours will flow'r forever;
For me as well, in part, but ne'er for show.
Enough to let those friends I once had known
Be stirred by your great beauty, ever new;
And then, at times, remember yesterwhen
I lived and searched, and loved both them and you.

We have returned, as of August 1, 1971, from our year in Michigan to our home in La Jolla, and happy indeed we are to be here again. The home we found to be in fairly good shape, save for very dirty carpets that required steam-cleaning (how can people live thus?) plus several features of accelerated wear-and-tear through our tenants' 13-month occupancy.

We drove some 4200 miles westward across beautiful America, including: Michigan via Kalamazoo; Iowa City, where we stopped over for a weekend, staying with our good friends Dick and Lydia Wilmeth and visiting Alan and Carol. Thence on to western Iowa and northward into Sioux Falls, South Dakota, were we made an overnight stop. Crossing South Dakota through some really lovely, rolling country, we visited a typical old sod shanty, now a kind of museum, out on the plains, and fetched up at Wall by latter afternoon. There we saw an old-fashioned melodrama (entitled "Gad, What a Cad") in the evening, and stayed the night. On next day to see the famed Badlands in the western part of the state, and thence over into the Black Hills, where we visited and went through Rushmore Caves, saw and photographed the great carvings of Presidents Washington, Jefferson, Lincoln and T. Roosevelt at Mount Rushmore, and thence on to the monument, still a-building on a distant mountain, of Crazy Horse, the renowned chief of the Sioux at the time of the Custer massacre, back in 1876... This project is supported entirely by private donations, largely from Indians.

So across into Wyoming and on down into the little village of Medicine Bow, where we stayed the night of July 15... I wanted to view quietly the distances of the great plains and the rise, afar, of snow-capped Elk Mountain, all scenes upon when the eyes of my father had looked daily for a couple of years, back in 1885-1887 when, at ages from 19 to 21, he was serving as a cowboy and horse wrangler for Fred Hadsell; he then returned to his native England.

Thence we drove easily down into Denver in about half a day, where we stayed the weekend with Phil and Ruth Perdew (Phil is Mim's younger brother, a professor at Denver University) and with them visited points in the great Rockies above timberline, taking a picnic lunch with us. That evening we attended a great Indian pow-wow, which was very impressive.... I felt like joining the men in some of their vigorous dances... but they were young men. And they were Indians, with their own proudly observed culture.... The Indians have been given a rather bad time by our nation, all things considered, for they have been accorded a kind of 'management' that is depriving them of their native culture, simply by a process of gradual dilution, it seems to me. I had read, at Cranbrook, a book, "The Face of the Fox", concerning the Indian community at Tama, Iowa, and this afforded

insights that I'd not appreciated earlier. The Fox and Sacs (Sauks) had been pushed out of Michigan and later out of Wisconsin and finally into Iowa by more aggressive tribes.

From Denver we returned to Wyoming, this time making our way westward across the state to Grand Teton National Park, where we were lucky enough to find overnight accommodations, staying a couple of nights at Jackson Lake Lodge. What breathtaking beauty the immense grandeus of these enormous mountains presents. We took colored photos of course, to add to our growing collection. En route north we visited the hot springs in Yellowstone National Park, supporting algal growths; and we witnessed an eruption of Old Faithful, taking more colored photos.

So on up into beautiful Montana, to Helena, were we saw Kathy and her husband and children daily for about a week's time. The youngsters are growing apace, and are very lively and entertaining. Eric brought from the library in Helena several books to read, including one about Jonathan Bing, a poem he wanted me to read aloud to him, which I did. Brad is an athletic, cute little guy, and Connie, at 15 months, a very sweet, endearing little girl, who loves to sit with her granddaddy and have him sing to her.

On homeward once more, southward through Dillon, Montana (where we had to have the car's air-conditioning system repaired) else the heat would have been terrific) and Pocatello, Idaho (where we had the original shock-absorbers replaced), and down into Utah after an overnight stop. Through a vigorous electric storm, with lightening striking the earth around us, we entered Cedar City in latter afternoon, stopping there overnight. Thence across through a northern chip of Arizona, and through the southern sector of Nevada to Las Vegas (ca 112° there) and down past Calico, Barstow, Victorville and into San Bernardino for an overnight stop, and next day home to La Jolla, 13 months to the day from our departure the previous year.

It would take more time than I have available were I to try to delineate all the varied aspects of our "sabbatical year". It was, in fact, an excellent capstone to my emeritus status.

I had condensed my lab space at S. I. O., to the accommodations of one laboratory room, plus my office, in order to make room for David Epel, a new and enjoyable faculty member from Stanford. He has the 4 or 5 other labs that I relinquished, and will share the cold-room, wet-lab aquarium in the basement, and the dark-room. My faithful student-assistant Ralph Dykes had fitted all equipment and reagents into the space that remained to us. What congestion!

Still, I shall gradually sort things out, after a fashion while learning to live with this new arrangement.

All this plus the fact that I no longer shall have research support from the National Science Foundation (which I had enjoyed for the eight continuous years from 1962-1970) means that I have to "shift gears", as my old friend and colleague over the past 40 years, Claude ZoBell, told me. And he himself will become emeritus on 30 June, 1972 (next calendar year).

Actually, I've been a bit surprised to find myself rather relieved about the lesser pressure that is afforded me by the discontinuance of NSF support, since this inevitably entailed much increased responsibility of many kinds.

It has been a truly great experience to travel by car with Miriam across our United States, as far as Niagara Falls and eventually back to Southern California. For thus we had the opportunity to know better and more intimately our whole country; and thus, accordingly, to love the country even more. How many times have I felt thankful to my father for bringing his children, when they were very young, out to grow up in and become a part of this nation! Yosemite Valley and its great falls, Niagara Falls, the Grand Tetons, Yellowstone Park and its huge geysers and hot springs, the Grand Canyon of the Colorado, the Black Hills of South Dakota, the great Rocky Mountains, the Mississippi Delta, the great meteoric crater near Flagstaff, the spreading southwestern desert country are among the many sights we have known, never to be forgotten.

One has no way of knowing when this autobiography may be finished. It is a kind of continuing document, to which one may add abbreviated memoranda from time to time, so long though life as the spirit may move him.

Alan and Carol indicate to us that their wedding date is drawing closer now, while both are living and working up at Antioch Ranch, near Mendocino, California, some 150 miles north of San Francisco, on the coast, in beautiful country.

On October 16, 1971, Miriam and I witnessed, with great happiness, the wedding of our youngest, Alan (23) and his bride Carol (nee Putnam, 22) in a beautiful little 104-year-old Presbyterian church in the town of Mendocino, situated on the rocky coast of northern California, with rising terrain immediately eastward, covered with coast redwoods and other fine trees.

It was a simple, informal ceremony, very sweet and intimate, attended by some 50 local friends in the area. The bride and groom had written parts of their own, individual vows, to recite to each other, and it was a double-ring

ceremony. As the couple knelt in the final phase of the rites, any friends who so desired were invited to come forward, standing behind the two who were being married, placing a hand on their shoulder, and thus participating, either silently or vocally as the spirit moved them in turn, in blessing the union. Several did utter prayers aloud, as did the bride and groom; there must have been a dozen standing there over them. It was most deeply impressive and a sweet experience to witness a loving pair of young people so devout in their love for each other, and the affectionate service that friends put into decorating the church and preparing the reception, and blessing the union in the church.

We had flown to San Francisco, thence by small plane to Santa Rosa, there renting a Hertz car to drive on to Mendocino, a distance of about 106 miles. We had several visits with Alan and Carol in the couple of days before the wedding, and were staying at a nice motel picked out for us by Alan. After the wedding and reception, at their suggestion, we supped with them in town. Then they retired to their little retreat in Mendocino, and we to our motel for the final night of our sojourn.

We drove homeward next day, Sunday, via Noyo north of us, just below Fort Bragg, across mountains and through beautifully wooded country to Willets, thence south through Ukiah, Hopland, Cloverdale, Healdsburg, Santa Rosa, Petaluma, Novato and across the Bay Bridge (25¢) into San Francisco and to the airport where we turned in the vehicle and took our flight home to San Diego. I had done all the driving to spare Miriam's lumbar area, where a partially collapsed disc, involving some herniation, had been exerting some pressure on a large nerve. She really did well, on the whole, considering the length of the trip, the standing and walking.

I still can enjoy some driving, so long as it can be done in turns, say of 100 to 150 miles at a time. We had enjoyed our 4200 mile tour across the country from Michigan to California, by the winding route described earlier. Travelling is most enjoyable, but the actual driving is more of a necessity than a hobby.

Alan and Carol had known each other since the New Year of 1970, when they met at a great Christian conference at Ann Arbor, where Carol was doing some graduate work at the University of Michigan, while Alan was becoming a senior at the University of Iowa. They had then become engaged in March, 1971, and both had lived in Iowa City from the preceding New Year until August 1971, when they drove across country, joined us here for a fortnight, then on to Antioch Ranch in Mendocino at the last of August to work in the Christian community there, set up principally for troubled wayfarers. They expected to leave there shortly after their marriage.

Any who read the pages of these memoirs will realize full well that there is far more behind the few vignettes presented herein than has found its way into the script.... One cannot place all of his intimate thoughts and experiences into writing. And readers could hardly profit commensurately even had such an effort been made by the writer. A few words may adequately suggest to the mature minds of experienced people the general scene attempted by the narrator. There was something in the simple, modern music at Al and Carol's wedding that sang pasturally of dawn in Paradise, in that little church.

Anyway, our three children, each married in their turn to beloved partners, in our presence, have brought delight to us, and thus have brought new members into the family.

On Friday, 22 October, 1971, I was able to attend an extraordinary gathering. It was of men who had graduated from Berkeley High School 50 years ago or longer. This particular year's assemblage was especially to honor men whose graduation had been with the December class of 1920 and the June class of 1921.

We three original founders of the Ace of Clubs (November 11, 1918, which later happened to be Armistice Day, ending World War I), namely George B. Toll, now of Vista, California, Dudley J. Kierulff, now residing in Palm Springs, and I from La Jolla, had been in touch by telephone and letter earlier, and were among those present.

George and I were able to fly up together by the same P. S. A. flight from San Diego to Oakland, travelling thence by limousine to the Durant Hotel in Berkeley. We had a very cordial visit together en route, and had been seeing one another, with our wives, at times over the past few years. On this occasion, George imparted to me some amazing information about troublous chapters of his past, going back into history made some 39 years ago, of which I had been completely unaware in any detail. Those days had been after each of us had left our old Berkeley environs, and were married to our respective first wives. But George never had told me, nor anyone else, any details of what he conveyed to me on that flight. And I still feel deeply honored by his confidence.

The alumni gathering began at 11:30 a. m. at Spenger's restaurant, down on University Avenue and Fourth Street, Berkeley, where I rode with another old classmate, Everett Dempster, Professor Emeritus of Genetics at U. C. Berkeley. Luncheon was served at about 12:30 to perhaps 150 old alumni, from classes of 1921 and earlier. What a unique experience it was, to enter the large gathering room, there to find no lads as we last had known one another, but instead a crowd of old men, talking animately, each wearing, very fortunately and far-

sightedly, a stiff card on the coat lapel, bearing his name in large capital letters. First-names were then used easily, in many instances, not without surprise, and often with affection, once identities had been established. But there were numerous instances of widely increased bodily girth, and here and there a need for reading spectacles, and often an inclined head thrust forward to facilitate auditory reception in a conversation. Some had stiffness, or even a limp.

But I recognized several old boys of 50 years before, even without first having had to glance at their lapels. The friendly, warm handclasp and hearty twinkle in older eyes placed one between the worlds of the present and of long yesteryears. Many teachers and old incidents were remembered.

Some names there were, of classmates whose lives had been eclipsed in the long interim. Many of the 1920 and 1921 Berkeley High graduates had gone on to the University of California, and were classmates from there as well... And some few had been schoolmates from the first grade! A number had children who became alumni of the University.

There were lawyers, professors, judges, engineers, medical men, manufacturers, businessmen and other vocations represented. I think that Everett Dempster, of UCB, George Toll, retired from Palomar College, and I of La Jolla (UCSD) must have been the only professors from the old class, two of us from the University of California. All of us were retired, as were most of the others in attendance that day.

It was the first time that that particular assemblage of persons had been together as a group for more than a half century. And there we were, together for about three hours, with insufficient time in which each might talk with each, and thus catch up in part on the course of an old classmate's life through the years of apartness. Nor would the opportunity likely arise a second time within the lives of all concerned.

One did learn bits and pieces, of course, here and there, regarding another's life. But some alumni belonging to that time had died. And some of those deaths I had learned about before ever having had the chance to observe this occasion. We talked privately or in small groups, and felt ourselves to be fortunate, at around threescore and ten years, to have survived so long.

Our numbers will dwindle as the earth turns.... The great majority of fellows in attendance were very cordial in their greetings. Several indeed were very warmly so. But there were a couple of exceptions. And I could not help but feel sorry about each of them. One was a man whom, as I recall, nobody had liked in those long-ago schooldays, dating back even into 9th grade. He had been

bright enough, but a loner, never friendly, but ever rather brooding, and of sour aspect. He had long since become bald, and of more saturnine aspect than ever, bearing an almost satanic look, I thought, in profile. And again he seemed alone. I went over, greeting him by his first name, and he returned my handshake, but had little to say, or to ask. The other case was not that of an isolate, but I remembered him as having been unfriendly, even truculent and quite snobbish in our schooldays. However, in any event, I did not recognize him as we looked several times at each other, seated as we were, some distance apart and on opposite sides of the table. I had mistaken him for another classmate, with whom I had been on friendly terms, until Dud Kierulff, seated directly across from me, replied as to the chap's identity. Whereupon I quickly made my way over, greeting him by his given name and identifying myself. Like the other, earlier exception, he returned my handshake (and his hand was lame, apparently) but he did not arise as he did so, and had nothing to say. I had seen him talk little if at all, to others about him. He may have been unwell, or even not quite all there, so to say. He did look very wooden and immobile of countenance, and, I thought later, must have been brought along by someone.

One cannot worry profitably over these failures of urbanity; one feels sorrow, but has to pass along to cheerful and counstructive topics.

George, Dud and I agreed that the whole enterprise had been very rewarding and worthwhile; and Everett, who drove me to and from the luncheon, felt that we ought to go again together – say in another 50 years. A good idea too, I replied.

Recollective Thanksgiving

(Begun 1-18-70, and continued at intervals)

As these, my autumn years, have come to pass,
Immersed again I am, in yesteryears
Through which my life, reacting as must all,
Was built, and did some building of those others
Which blended with my own, in great degree.

Wherefore I pause, in great appreciation
Of all those years; of all those pathways crossed,
And of those blended courseways of progression
Toward which we travelled, approaching what great goals?
My thoughts, in all events, transported are
Through chapters of my individual book.

Appreciation, first, for those who gave me life,
and raised my early years in British countryside;
Then brought me to the Golden State in 1905,
To grow, and learn in realms of new adoption.
And here I learned, along with my two brothers,
To know, to love and live with all wildlife.

Neighbors' children, and the teachers, all of those
Are parts of my burgeoning youth, and to them all
I must have given something in return.
Modified a little are we all, by those we knew,
As, through the passing years, we trod the scene,
Each of his own life's pattern, ever changing.

A few of youth's best boon companions
Exchange with him some bits of life's great wisdom;
A quiet, daily process, all unrecognized until
A later day, when memory's scene recalls
A corner turned, a crisis passed and over;
Then thanks are murmured quiet in the soul.

Professors, in their classrooms, or their labs,
Give voice to phrases or expressions brief, but deep.
Deeper than we knew, or even they, when uttered,
But printed in the lives of those who heard.
And students, in their turn, have much to give their teachers,
As all of us know well, all who have taught.

And classmates, whom we met by random chance,
In whom we found enlightened company;
Friends for life, such others may become.
And this, moreover, in long, long afteryears
Which may have intervened, with ne'er a sight
Or word, or news of those of other days.

And maidens of that self-same scene of youth,
Who, in their growing up, encountered us as lads'.
Full well they played their beauteous, pristine roles.
Their ready company, responsive mirth or play;
At times, deep shafts of understanding, or exchange
Of thoughtful ideation; sometimes a nice flirtation.

If we remember all such precious times,
Sure it will be that they remember too,
Where'er they are, and how long married mothers.
Youths and lasses (if I may be old-fashioned)
Give each to other warmth and self-reliance,
And know, in after years, the how and when.

Thoughts there are, transferred by tacit sign:
The second, searching look, the wink, or quiet, soft regard.
Or, following a nudge, light-hearted or exploring.
Then, during snug convenience, sustained and warming pressure
Of an arm; or a shared handgrasp, a loving cheek, warm against one's own.
And anon the meeting of lips with lips, soft and mutually invited.

Thus pass the days of youth, when all exploring
The Spring of Life adorns, and slowly builds the man.
And happy he who in long retrospect
Can live those college days again, with no regrets;
And in whose conscience there resides no pain,
No consciousness of having hurt, of any debts unpaid.

The scenes return, of all familiar places
That made the campus home for growing minds;
The reading room, entered Sunday morn through window left unlocked;
The sturdy, granite outlines of the tower
Whose faces told the time, whose chimes the hour;
The sultry summer places; the shaded, rainy footpath.

One's university's the seed-bed of his spirit,
His call to learn, to challenge, and one day understand.
As long, long thoughts invade the resting mind,
Deep gratitude wells up, for countless gifts received,
And for the chance to give, for ever, in return.

* * * * * * * * * * * * * * *

I do not pretend to be anything of a poet, but there are some reflections seemingly better put into some kind of blank verse. Hence some apparent deviations herein from a theme.....

The Lea

I know an empyrean Lea
Crossed by a winding trod,
Leading the eye and the spirit far,
Far into its beckoning beauties
Along a cool, musical stream
Bordered by grasses and oziers;
The haunt of waterfowl, whose voices
Fluidly merged with the droning of bees,
Contribute a rich obbligato
To the prevailing quiet.
There the leaves, high aloft,
Whisper their soft rejoinders
To the gentle breezes of summer.
Or, in the leaden days of winter,
The pliable, anchoring branches
Wail their rising notes
Called forth by the roaring wind.

Beyond this Lea, and surrounding it
Rise lofty, majestic mountains,
Green-clad at their bases, but topped
By white, sharp, cloud-piercing pinnacles,
Their shadows soft, and their faces
Reflecting the pinks of sunrise.
Willows and oaks offer shade
For the resting cattle at noonday.
Boulders, the playground of squirrels
And lizards, delight the scene.
Ethereal breath of fresh blooms,
And the earthy odor of sod
Give the viewer an intimate sense
Of his chemical one-ness with Nature.

This Lea is a home for my spirit,
A realm of friends unseen,
Who know, and would whisper, of peace;
A treasury, ever new,
A harbor for troubled mind,
A retreat from angry distractions,
A life-long gift, from my birth.
When, on one day, I shall see
This Lea in its intimate wholeness,
Perhaps I shall paint it for ever,
Rather than writing poor phrases.
When that hour comes, I shall know,
By the picture's perfection, that then,
I shall not have really restored it
On paper or canvas, in oil,
But that, at long last, I have entered
Into its glorious wholeness.
Then shall I look for those others
Whom I love, at the end of the trod;
For I shall be Home.

D. L. Fox
1957 and 1961

LXXVI Anno A. Baird Hastingsi

(With apologies again to Lewis Carroll)

I'll tell thee everything I can;
  There's too much to relate,
However, in this short hour's span.
  Yes, I begin too late.
In autumn once, along the shore,
  I came upon a man
Who held a fishing pole and wore
  A garb of grey and tan.

A tall, distinguished don he looked,
  With bright blue sparkling eyes.
And what a catching smile, withal
  Upon his visage wise.
"For what d'you fish, senor?" I asked,
  And saw his humor rise.
"For quigs, " he answered readily,
  "But I can compromise. "

"Quigs, what are they?" I took the bait.
  "I'll tell you that, " said he,
"When first I catch one; Stay around.
  You'd like to talk I see. "
And talk we did, that day indeed,
  And many, many more.
And I was not surprised to find
  How many friends had he.

The countless students he had taught
  In bio-chemis-tree,
Preparing them for medicine,
  Or for a pee-aitch-dee,
Recall Baird Hastings through the years,
  As well they might, forsooth!
For where to've found a better man
  As leader, seeking truth?

And now, if e'er perchance I dip
  My feet into the sea,
Or else depict a double bond
  Which really should be three,
Or if I sink down on the floor
  Upon a bended knee,
Recovering dropped specimen, or searching for a key;
  Or if a measured volume seems
Too short by 10 c. c.,
  I stop, and swear, reminded, see
Of that great fellow, Hastings, B.,
  With hair all white, eyes sharp with glee
On most occasions seem to be;
  Who many times an honoree
(Did I say "ornery"? Nay, not me!)
  From many a universi-tee
Has been--his record's there to see!
  Yes, memories come back to me
Of that fall day it was, when he
  And I went walking by the sea.

D. L. Fox, La Jolla. 11/17/71

Letter to my father, from Cambridge, England, 7/15/39

25 Owlstone Road
Cambridge, England
July 15, 1939

Dear Father:

With the aid of a few scribbled notes, done on our recent journey, and a fair map of England, I'll try to recount at least the highlights of an automobile tour of some 580 miles, covered by ourselves with our good friends Dr. and Mrs. Newton of London, during July 11-14.

July 10-Monday

Having got the boys off to their school at 9:00 A. M. having made all necessary arrangements for one of the teachers to stay with them, we took the 10:20 train to London. All England was in bloom, and the day was beautiful. Particularly striking was the vigorous and complete invasion of acres of oat fields by a bright scarlet poppy which grows nearly everywhere here. The poppies grew among the oats and competed freely with them; but a neighboring field of wheat, even adjacent to oats, had none of the poppies at all, or only a few stragglers at the borders. It seemed a curious case of specific compatibility, for which I haven't been able to learn the cause.

As the train passed, one could get a curious optical chromatic effect by throwing one's eyes into a focus such that they followed the rapidly "passing territory" without flickering, one saw, instead of detailed colors of scarlet from individual poppies and green from oat-stalks, a curious complimentary blur of brown which followed one along.

Reaching Kings' Cross at 11:44 we took a taxi to the Tower via Billingsgate (affording varied and striking odours). We saw the Tower Bridge and London Bridge in the distance. Unfortunately, time did not permit our going through the tower, but we walked through the grounds and crossed the moat. We had a luncheon engagement at 1:00 at the Athanaeum in Carleton Gardens, so out time was cut short. Added to this, a kind of minor catastrophe overtook me as I was leaving the Great Tower. It concerned nobody else, but being related to a sudden and quite unforeseen (and irreparable) parting of a piece of my apparel, caused me great embarrassment. My macintosh and a few safety pins served to carry me through, but it is an incident about which Miriam and my friends laugh often, and I try in vain to consign to the limbo of the forgotten.

So on to lunch and at a very grand place, overlooking Waterloo Place and its statues of various men. Dr. Andrew Little, an old Oxford man, was host to us both,

as well as to Ethel Fox and Zoe Brewer. Dr. Little taught formerly at Manchester, and is an authority on ancient writings.

Following lunch, we walked about a little, seeing the War Office (a gigantic set of buildings) the Foreign Office (virtually the home of the Russian Ambassador recently) opposite Prime Minister N. Chamberlain's house at No. 10 Downing Street (where "conversations continue" according to radio).

We passed through the Horse Guards, standing their stationary 4-hour watches, dressed in brilliant red and white, and mounted on their black steeds. I photographed one of them. From here we crossed to Scotland Yard, an impressive, very official looking place; we got safely through it without seeing any of our novelists' "C. I. D. men, off to apprehend the man at Paddington" or "sucking cracked briars", "rapping out orders" etc. We were not taken for spies, anyway. We were however, watched constantly by an observer, partly but insufficiently hidden, in Chamberlain's house on Downing Street.

From the Thames Embankment at Westminster Bridge we had our best view of Big Ben, hearing him strike 4:00 P. M.

We spent the better part of an hour in Westminster Abbey, visiting various places of historical interest, the tomb of Charles Darwin, that of Oliver Cromwell, among many others (incidentally including distant relatives pointed out by Ethel).

Parting with Ethel after tea, we found our way to Regents' Park while she went on to Victoria Station. We visited a Dr. and Mrs. Ivanoff (Mrs. Eric Ogden's parents) and found them a fine, hospitable couple of high class Russian people. He is an engineer, with degrees from both Petrograd and Freiburg. They seemed very glad to meet friends of their daughter and son-in-law.

We spent the night with our friends, Dr. and Mrs. Newton, who live in Iver, Bucks, some 15-20 miles west of London, going by a fast train from Paddington.

July 11-Tuesday

We had a bright cloudless morning, packed, and got off by about 8:00 A. M. worming our way out of London's environs into the open country. Very unfortunately, time did not allow of a stop at Kew to see the world-famed botanical gardens. We did, however, gain the full joy of seeing the so-called and well-called garden-land of England in the southern county of Kent. Passing through Purley and Limpsfield in Surrey, we came to Penshurst, Tunbridge Wells, Lamberhurst and down to Bodiam, just across into Sussex. Here we spent some time going thoroughly through beautiful old Bodiam Castle. It is surrounded by a great moat, full of clear water, grown thickly with yellow-flowering pond-lillies. We crossed the causeway, formerly the drawbridge, inspected the keep which bore two separate portcullises for

added protection, and roamed about through the former halls, chapel, and other rooms, including the kitchen with its vast fireplaces. We climbed the ancient staircases to the very top, overlooking the moat and surrounding country, including the castle's tiltyard where former years saw many a tournament. The spiral staircases wind counter-clockwise (looking upward) to allow a retreating swordsman to employ his right arm, while a following enemy would be at an obvious disadvantage, even if left-handed.

Leaving this so-called "fairy-castle" somewhat wistfully, we took to the road once more and rolled steadily through Northiam and Peasmarsh into the ancient Cinque Port of Rye, situated on a hill, and looking out onto marsh-land and the ocean beyond. The ocean formerly covered all this marsh land, Rye and its near neighbor Winchelsea, seen nestling among trees on a hill across the marsh, then being directly on the open coast. Rye is a very old town with its narrow steep and cobbled streets which you know so well. We went, conducted by your old friend Mr. Leopold Vidler, into the ancient church whose clock is said to be the oldest one actually running in England; we were struck by the giant pendulum which swings ceaselessly above the heads of those in the church, plainly visible to all.

From the attic of the city hall opposite, we looked out upon the face of the old church clock, seeing the two gilded oaken "quarter-boys" each striking his bell at the quarter hour. Within the attic we saw an old pillory, its neck-slot and wrist-slots worn smooth and shiny. I put my neck and wrists into the slots and was closed in – a most uncomfortable position. We saw also another grim sight; a cage-like structure fashioned out of stout steel bands to hold a man by head, torso, arms and legs, hung by its ring in a corner with a yellowed skull still resting in the head-space. It seems that very long ago a butcher named Bread (pronounced "Breed") undertook to murder the then Mayor of Rye, a man named Lamb. However, on the particular evening when the murder was planned, Lamb, who felt ill, could not attend the meeting of the town council, so sent his brother-in-law, who was a kind of second-in-command, in his place. The brother-in-law, wearing the mayor's cloak and hat, was overtaken in a narrow street leading to his home, and stabbed to death by the assassin, who, believing the mayor to be his actual victim, called out something with reference to it taking "A butcher to slaughter a lamb", and fled. Apprehended, he was hanged, his body incorporated into the iron frame and in it hung out in the marsh for fifty years. Later it was taken down and put out of sight where it remains. The

skull nearly clattered through the neck-opening of the frame when I touched it. Mr. Vidler very carefully replaced it while I felt like a violater!

We had tea in Mr. Vidler's home, now "The Old Stone House", formerly a Friary dating back to about 1263, housing the "Friars of the Sack", although it has been privately owned since 1307. Through some ancient law, fourpence annually were collected as rent, but nothing has been said or done about this for many years, according to Mr. Vidler, who, I gather, pays nothing.

Going on through quiet little Udimore a couple of miles or so from Rye, we turned off there and visited my birthplace at your old Billingham Farm. It was really beautiful and green, the house and garden well kept, and the various out-houses in good condition. I remembered nothing, I'm afraid, being too young at leaving it. But I recognized the front of the house and something of its setting from pictures. Miriam took a few snapshots.

Supper in Uckfield, hence on to Haywards Heath, Cuckfield, Bolney, Cowfold, Billingshurst, Wisborough Green, and to the Swan Hotel in Petworth for the night. (There are many Swans, White Horses, Angels, Crowns, Georges and Lions, of various kinds as hotel names in England).

July 12-Wednesday

The quaint little villages, with their narrow roads, green fields and hedge-rows, thatched roofs and often vestiges of ancient walls or other ruins, often seen pictured, are certainly exact replicas of the kind of scene which often greets the eye of the by-way traveller, although the railroad traveller often misses the rich intimacy of the country. Midhurst, the first village of any size beyond Petworth was an interesting place and seemed very old, and has Coudray Castle as one of its cited attractions.

In Winchester we saw the statue of King Alfred, (labelled Aelfred), who ruled in this one of England's former capitals, in the 9th century, still some 200 years after the beginning of Winchester's Christian History. We went through the cathedral, a huge, massive one, much like the one at Ely, with its once-popular and useful flying buttresses mounted on columns outside, each with an ornate gable leading upward where the lower end of the buttress joins the column. Among the tombs of many notables within, we did see that of an ancestor of the family, one Bishop Richard Fox (during 1500-1528) who served Henry VII and Henry VIII (baptizing the latter) and founded Corpus Christi College at Oxford.

At St. Cross Hospital, one may and many do still, receive the Wayfarer's dole of "a measure of mead" (now a glass of ale, I think) and bread. A residue of an ancient law.

The cathedral at Salisbury seemed even more beautiful than that at Winchester, both being more striking and inspiring than the one farther on in Wells.

Two miles out of Salisbury proper, on the road to Stonehenge, we saw the amazing, huge, man-made earth-terraced hill of Old Sarum, which probably served early Britons as an observatory over surrounding terrain, and a fortress, some 2000 years ago, or more. Nobody, it seems, has succeeded in establishing its age with any satisfaction. Further north lies Stonehenge, an even more challenging mystery, since nobody knows who were its builders, or why it was built. Much seems to have been written regarding theories of its construction, but any facts are extremely sparse. Going through and around this amazing enigma, some 40 centuries old, was surely one of the richest experiences of the journey, for me at least. The ancient barrows in the near and far distance around Stonehenge were reminiscent of such ancient burial grounds in East Anglia.

Via Frome and Shepton Mallet, we reached Wells and, after a short visit to the town proper, we drove on over hills and into the little basin of Wookey Hole, where we spent about an hour going through the deep caverns, under guide, whence the River Axe rises. The stalactites and stalagmite formations assume great and bizarre forms and beautiful colors. Over the rising hills and into the heart of the Mendips we passed through the very old village of Priddy, just at the top of the Cheddar Gorge. Priddy was the site of an ancient lead mine, whence the Romans obtained their supplies of this metal for the manufacture of their water pipes at what is now the city of Bath, where they found a great body of natural hot springs in the first century, and built the great baths which still stand. The lead pipe, triangular in cross section is well turned and nicely welded.

Down the Cheddar Gorge we rolled at a moderate enough speed to see well the terrific, perpendicular walls, especially on the Eastern side; grey rock, interspersed with shrubs and other adventitious greenery. Near the bottom we went through the Gough Caves, just in Cheddar (the cheese center). These caves were very different from those at Wookey Hole, and in some ways more interesting. Stalactites were generally of two forms--the long fang or spiked type, and the curtain type, the first arising from a water-drip from a single outlet, the second from a running crack. The basic stalagmitic structures are of course much larger. Again the infiltration of traces of other salts into the lime resulted in a display of beautiful and varied color. Some of the delicate pinks I suspected to be due to manganese, while the browns and oranges of iron were not easily mistaken. Even green algae and mosses grew where electric light shone constantly, or very

frequently. I noticed, however, that any ferns growing in such places showed an interesting varigation in their leaves.

Staying the night in Clevedon, we found a hotel high on the cliffs. Across the Bristol Channel, narrowing into the mouth of the Severn, we could see Cardiff and Chepstow on the coast of Wales, twinkling by night, and reflecting the sunlight of the morning.

Leaving Bristol out this time, we proceded to Bath via Kenn, Yatton, Congresbury, Blagdon, and through the heart of the beautiful Blagdon Forest on rising ground and past the large Yeo Reservoir, and finally up through Bishop Sutton and Marksbury.

After a brief sojourn in Bath, where we had tea with my cousin "Peter" and his family, while Bill and Stella Newton saw the Roman Baths (I had been through them last November), we went over to Chippenham, whence, after a short stop, we headed north. In Malmesbury we saw the old Norman Abbey with the most beautiful Norman porch and portal beneath, which we had yet seen. It is really noted, I gather, for being outstanding among England's Norman structures. Within, we came across the tomb of Athelstane, the Saxon King who defeated the Danes and Strathclyde Welsh in Cumberland in 939 A. D.

Hence into Cirencester, Stow-on-the-Wold, Moreton-in-the-Marsh we were travelling through the delightful Cotswold Hills of Gloucester County. They're more gently rolling, and with farther views, than are the more austere, wild Mendips farther south, in Somerset. In both ranges, however, hedge fences tend to be replaced largely by rock fences; those in the Mendips being rugged and of large irregular stones, while in the Cotswolds neat flattened pieces are the rule.

In Stratford-on-Avon we saw the birth place of Wm. Shakespeare, the cottage of Ann Hathaway, Harvard House (now the property of Harvard University), and, in Trinity Church on the beautiful silent Avon, the tombs of Shakespeare and his wife, side by side. The monks, who had to stand for hours during services in long ago times, had each a very narrow ledge on which they might lean for awhile, the broad plank bearing this ledge lowered on hinges providing, when turned down, an actual seat. On the under side of these seats, the monks used to carve all manner of things, from conventional designs of flowers to scenes of the chase, gargoyle-like creatures, or humorous and even risqué studies. We examined a considerable number of them.

From Avon we proceeded to Oxford via Chipping Norton and Woodstock. The weather was fine, such that even on this, our last day, we could eat a picnic lunch on the grass by the roadside, as we had done daily.

We spent an hour or more in Oxford, visiting a few colleges and gardens. The Bodlean Library had a number of ancient papyri which fascinated us. We returned via Bicester, Buckingham, Bedford and St. Neots to Cambridge. At Bedford we saw the statue of John Bunyan, whom they kept in jail while he wrote the Pilgrim's Progress, and after his death, erected said statue in his honor.

We both prefer the quiet, old-country atmosphere of Cambridge to the modern commercialized and less dignified city of Oxford. Such a preference however, is entirely personal, and would be hotly argued by a loyal Oxonian. Actually, Oxford's population exceeds that of Cambridge by only some 12%-(i.e. ca 80,000 vs ca 70,000 respectively).

I am quite aware that I've repeated historical facts (and I hope most of them are straight) and described places with which you are thoroughly familiar, but I had to set it all down, much as my diary had it.

So now I really feel that we know a little, at least, of what is to be found in East Anglia, southeast, southwest, middle-south, western, and a bit of central England. We've been through about 16 counties in all: Cambridgeshire, (including Isle of Ely) Suffolk, Norfolk, Hertfordshire, Bucks, Surrey, Kent, Sussex (East and West) Hampshire, Wiltshire, Somerset, Devon, Gloucester, Warwickshire, Oxfordshire and Berkshire.

It takes much study and thought, doesn't it, to know any country? After nearly a year here, and with the bit of travelling described in letters home, I really am only beginning to sense the pulse, as it were, of England proper, even tho' my life began here.

One finds conventionality, reserve, hospitality, thriftiness, honesty, and good neighborliness in England's people. It is the first, second and fourth-mentioned qualities which serve to differentiate English chiefly, I should say, from Americans. In good neighborliness, Americans stand out more than English, not in intrinsic goodness, wherein they're equal, but in readiness. The English say "Kyawp." (thank you) on every occasion.

I've not written much home, of my work, but hope that papers resulting from it may speak for it later on. Before taking the vacation which I've tried to describe, I was really very tired, and seemed to need respite from laboratory surroundings more than at any time in the past. Another six weeks will see us departing. I'm only hoping that I can have my work wound up by then.

No more news here, then, just at present. The more personal items are, of course, in the other part of the letter.

Your affectionate son,

(Denis)

P. S. Let friends at Scripps see, if you think they'd be interested. Send first to Dr. Coe, as I owe him a letter, and have sent him only a card. D.

September 18th. 1939.

Dr. T. Wayland Vaughan
3333 P. Street
Washington, D. C.

Dear Dr. Vaughan:

Claude ZoBell will probably have told you before now that my family and I arrived home safely, after a certain degree of excitement which I should have gladly done without. Poland was invaded 36 hours after the "Queen Mary" sailed from Southampton. She took some 2400 passengers instead of the usual capacity of about 1800. She was blacked out completely, save for necessary guidance lights, every night, and took a new course north of the Gulf Stream to N. Y., all by Admiralty orders. England and France declared war while we were still only about two-thirds of the way across. However, the passengers were quiet, and were concerned more with the broader aspect of the whole tragedy than with anxiety about our own ship.

I was very sorry that time and a number of other factors did not allow me to run down to Washington for at least a brief visit with you after my profitable and enjoyable year abroad. I am sorry also to hear that you haven't enjoyed the best of health recently, and that this precluded your intended journey to the West. I hope that we may all have the pleasure of seeing you next year.

Among other investigations I did a long and interesting piece of work with Carl Pantin at Cambridge, and had several collecting trips with him. I was also his guest at the Feast at Christ's College on May 10. He is a delightful and stimulating chap. He has expressed his hope and intention to spend some time in my lab here at Scripps when his next sabbatical leave comes. Meanwhile, what effect this wretched war may have cannot be foreseen.

I must say I found the Rockerfeller Foundation generous and thoughtful in all their dealings with their Fellows. I may have written you that they enabled me to take a short trip in April, over to Paris to visit some of the men and laboratories there. Miriam went with me, while we left the boys with people in Cambridge.

Our train was long delayed in the Southwestern desert, due to great washouts caused by recent floods in the region of the Colorado River.

But we're home at long last, and happy to be here among old friends and colleagues. And we feel permanently richer for the experience and for the delightful friends whom we made abroad, a number of whom are also friends of yours.

You will receive reprints of my work when it is printed, although the Proceedings of the Royal Society may well encounter delays now.

With best wishes and affectionate regards to you both,

As ever,

DLF:m.

November 3, 1939

Dr. Frank Blair Hanson
The Rockefeller Foundation
49 West 49th Street
New York, N. Y.

Dear Dr. Hanson:

It is a pleasure to submit to you and the other Officers of the Rockefeller Foundation the accompanying report of my chief activities abroad as a Research Fellow during the year from September 1938 to September 1939.

In the interests of giving rather comprehensive information, I may have prepared a more extensive report than is necessary, and I have doubtless included information of a general kind with which you are already familiar. I hope, however, that the report may not be too lenghthy to serve its purposes. Needless to add, I shall be glad to supply any other possible information of a specific nature for which you may care to ask.

Again, I wish to express my appreciation of the way in which the Foundation made possible the valuable and pleasurable year that I spent in England with my family. The generosity and numerous thoughtful considerations extended to me as a Fellow, especially under the conditions of European tension, will have provided an experience of lasting benefit.

The Foundation will receive my future publications and any biographical notes of interest, in accordance with your request. I shall be glad, at any time, to be of any kind of assistance which the Foundation may care to ask of me, and I shall be glad if our laboratories may be considered as a potential locus for suitable kinds of research by prospective Fellows who may wish to visit here.

With cordial regards,

Yours faithfully,

Report to the Rockefeller Foundation

Activities as a Rockefeller Foundation Research Fellow at
Cambridge University, England
from September 19, 1938 to August 29, 1939

by

Denis L. Fox

It was my good fortune to find opportunities at Cambridge to conduct research, in collaboration with others, on two of the lines of special interest to me, as suggested in my earlier communications with the Rockefeller Foundation, namely,

(1) a many-sided problem, as yet far from solved, dealing with comparative biochemical aspects of carotenoid pigments, not even in different lower marine phyla, but within a single species of anemone, Metridium senile,

(2) a fairly compact investigation on the carotenoid metabolism of a fungus, correlated with the reproductive cycle and sharply differentiated as to sex.

An outline of three problems investigated is given below, followed by a discussion of each.

Research work pursued.

1. The colours of the plumose anemone, Metridium senile.
   D. L. Fox and C. F. Pantin.

2. α-Carotene in the sexual phase of the aquatic fungus Allomyces.
   D. L. Fox and Ralph Emerson.

3. Concerning the physical and chemical properties and surface-behavior of astacene and other carotenoids.
   J. F. Danielli and D. L. Fox

1. Dr. Pantin, who has long been interested in the striking variation of the commonly occurring plumose anemone, Metridium senile, first suggested my investigating the nature of the various pigments involved. Some preliminary studies soon resulted in a joint investigation of the problem. Dr. Pantin, thoroughly acquainted with the biology and natural history of this species, is responsible for the corresponding part of our writings. To him also belong the morphological and histological parts of our studies, as well as the classification of the different natural variants in approximate conformance with color standards. My own contribution was concerned with the chemical nature of the pigments.

Reflecting some profound differences in biochemical habit, members of this species vary in pigmentation from dead white, through yellow, pale pink, orange, to deep orange red forms (due, we found, to increasingly high concentrations of carotenoid pigments), or through pale brown, buffs, or grays to deep

brown, or, in parts, even black from compounds of the melanin series. The simultaneous presence of considerable quantities of carotenoids and of much melanin results in a ruddy-brown colored body with red stomodaeum and basal disk; in a similar way, other intermediate variants show differentiation of pigmentation, due to a relative or complete preponderance in the concentration of one of these two classes of compounds in specific tissues, such as mouth, oral disk, tentacles, capitulum, body-column, or basal disk. There are some noticeable mutual exclusions regarding the presence of either carotenoids or melanins in certain specific organs or tissues; the deposition of carotenoids and melanin aggregates were seldom if ever observed side by side in a single tissue stratum.

Pure white or red animals showing no melanin in their intact bodies, nevertheless exhibit evidence for the presence of copious quantities of both precursors of melanin, i.e., the chromogen and the oxidase, since the sliced or ground tissues of such variants, exposed to atmospheric oxygen, soon turn brown and finally blacken irreversibly. The chemical behavior of the anemone melanin is identical, so far as we could observe, with that of the better known melanin systems from plant sources such as potatoes and mushrooms.

White, crystalline aggregates observed in the endoderm of tentacles and mesenteries were purine bodies. In contradiction to the claims of Mouchet, who declared such crystals, observed in many species of anemone including Metridium marginatum, to be xanthine, no xanthine, but considerable quantities of uric acid, could be demonstrated in our animals. Uric acid was found in quantity, furthermore, in the yellowish sheets of mucous material which were consistently excreted from the mesenterial endoderm and cast out of the mouth, even during starvation.

Perhaps even more striking than the observed differences of melanin development between individuals or clones was the unexpected variation in chemical types, combinations, and relative quantities of carotenoids stored. Histological sections showed that carotenoids were contained in the lipid depots. Chemical and spectroscopic tests revealed that the pink variety tended to store in preponderant amounts considerable quantities of an esterified acidic carotenoid, resembling astacene but not identical with it; white animals had in their gonads small amounts of an esterified carotenoid acid very similar to astacene and perhaps identical with it; intermediate yellow or orange variants possessed not only a certain amount of esterified astacene-like carotenoid, but in addition, and unlike the white and most of the red variants, some quantities of carotenes and xanthophylls as well, whose chemical behavior and spectra agreed with corresponding characteristics of known carotenoids; in the numerous brown variants we encountered the greatest variation:

the ruddy brown strain yielded, besides the astacene-like ester, a xanthophyll believed to be zeaxanthin; most of the other brown variants were very poor in carotenoid material and comparable to the whites, but unlike the latter, showed considerable inconsistency regarding the kind of carotenoid stored, i.e., traces of the familiar astacene-like ester, small amounts of carotenes, or of xanthophylls (sometimes in esterified form and often-times not) or any of several combinations of such pigments, with the absence of any one of the general types.

We have ample reason for believing that any pair of similar variants will reproduce true to color type, but that many crosses can and do occur in Nature. We know nothing yet about genetic dominance of pigment habits. Nor do effective environmental factors for differential pigmentation suggest themselves, since all types may be taken side by side from regions wherein they must have been exposed to the same temperature, light, kind of water, and supply of acceptable food. No differences could be detected in the water content of whole animals of various colors; nor could any significant differences be detected in the total lipid, sterol, or organic acid contents of the several variants, figures for all of which were surprisingly uniform. In connection with the joint work of Dr. Pantin and myself, acknowledgement should be made to some of the graduate students and others who rendered very useful help of various kinds. Mr. M. G. M. Pryor, in the Zoological Department conducted some histochemical tests for melanin in prepared sections; Mr. J. D. Robertson, in the same department, prepared a number of sections, and applied the technique for staining lipid deposits; Mr. R. Markham, of the Biochemical Laboratory kindly carried out some of the chemical tests for melanin, and conducted the qualitative tests and quantitative estimations of uric acid. Dr. R. P. Cook, of the Biochemical Laboratory assisted in routine lipid analyses.

2. In the life-cycle of certain species of the aquatic phycomycete Allomyces, an asexual or sporophytic generation regularly alternates with a sexual or gametophytic one. Asexual plants bear thin-walled, colourless zoosporangia and thick-walled, brown, resistant sporangia; sexual plants bear colourless, female gametangia and orange, male gametangia.

The pigment in the resistant sporangia is confined to the heavy, pitted, outer wall, the inner membrane, the cytoplasm, and the spores which are formed are all colourless. The orange pigment, found exclusively in the male cells of the sexual phase, is present in oil-droplets within the cytoplasm and is still apparent in the male gametes after their emergence from the gametangia.

There is not any trace of pigment in the female gametes, which, although more than twice the size of the males, are similar to the latter in structure and motility.

Results of the present chemical investigation of the pigments in Allomyces may be summarized as follows: The brown pigment of the resistant sporangia belongs to the melanin group, and careful examination and tests have failed to reveal any detectable traces of carotenoids in the solvent-free material extracted from sporophytic plants. The brilliant orange colour of the male cells in the sexual generation, on the other hand, is clearly due almost entirely in the majority of cases examined, to the presence of carotenoid pigments. Melanins are rare or lacking in this sexual phase. No traces of oxygen-containing carotenoids, i.e., xanthophylls, xanthophyll-esters, or carotenoid acids have been detected.

α-carotene was found in remarkably high concentrations, accompanied in certain strains by small amounts of other isomers such as β-carotene. The pronounced and nearly exclusive synthesis of the relatively rare α-isomer of carotene is of particular interest.

The findings concerning the pigmentation of Allomyces are in close accord with existing information: the synthesis and selective storage of carotenoids or their derivatives in structures associated with reproduction is well known in many other cryptogams as well as in countless higher plants. Notable also is the corresponding concentration of carotenoid pigments in the reproductive structures and secretions of many animals. The foregoing study lends emphasis to the possibility that such compounds play important biochemical roles in sexuality and the processes involved in the metabolism of reproduction.

3. Carotenoid acids from our anemones, as well as pure astacene isolated from lobster's eggs, were found to exhibit spectacular transient color changes when petroleum ether solutions of such pigments were shaken with aqueous solutions. The chromatic effect manifested itself as a marked red "blush" during the brief existence of the water-petroleum emulsion; as the emulsion rapidly broke, the pigment, freed from an adsorbed position at the interfacial surfaces, migrated back visibly into the petroleum ether which resumed its original yellow color. A number of non-surface-active, water-soluble compounds failed to alter the color change, while numerous fat soluble, surface-active compounds completely inhibited it, until removed. Carotenes and xanthophylls failed to exhibit the chromatic change; while such compounds are certainly surface-active, they are not capable of existing in alternate tautomeric forms as is astacene. A considerable shift in the absorption maximum, still in the blue violet but toward the red end of the spectrum, was determined for the astacene in the condition of sorption at a petroleum-water

interface (stabilized by the addition of a little sodium cleate), as compared to pure petroleum ether solution.

The absorption maxima of astacene in a number of different pure solvents were compared. Dr. Danielli has undertaken to continue his measurements of compressibilities of molecular layers of astacene and other carotenoids in the Langmuir trough.

We feel that physico-chemical studies such as the foregoing may eventually provide clues as to the possible biochemical role of such carotenoids as astacene in membranes, e. g., the hypodermis of many crustaceans, where its concentration may be relatively high.

The Sir William Dunn Institute of Biochemistry

This is a very well equipped laboratory, with facilities for a great variety of biochemical work. A good biochemical library is included. Of particular attractive benefit is the large and assorted group of workers met with in this laboratory. By far the most out-standing man is Professor Sir Frederick Gowland Hopkins, who exercises a stimulating influence upon all resident officers and visitors, and who effects a high degree of unification over all the workers. He has the admiration, loyalty, and affection of all who know him, and through his reputation, the highest respect of countless people who have not met him. Of the men in the Biochemical Laboratory, it was chiefly Professor Hopkins to whom I turned for occasional advice and conference, regarding certain broader aspects of my work. A friendship evolved between us which has afforded me a lasting inspiration.

Others in the department whom I should like to mention are Dr. Joseph Needham, Dr. Malcolm Dixon, Dr. N. W. Pirie, Dr. David E. Green, Mr. Robin Hill, and Dr. D. J. Bell. While my research work and primary interests did not coincide in an exact way with the major fields of activity of these investigators, nevertheless I found among them sources of valuable information in other aspects of biochemistry, and a manifestation of much interest in the pigment chapter of this science. One admires the broad, scholarly mind and voluminous writings of Dr. Needham, his development of interest and training of younger workers in his special field of biochemical embryology. From reports of the work of himself and his associates, I conceived some ideas regarding the possible position of certain carotenoids in processes of embryonic development. One of Needhams' characteristics, upon which all are agreed, is his generous helpfulness manifested toward younger investigators.

Dr. Dixon (chemistry of enzymes and biocatalytic reactions) is an excellent lecturer, a rich and willing source of information, and a quiet, sound, patient investigator.

Mr. Hill (hematins, plant pigments, enzymes) has the admiration of all his colleagues for his wealth of knowledge in numerous other fields besides his own specialty. He is one of the most modest and retiring persons whom I have ever met, but is a careful, brilliant thinker and worker, combining these qualifications with resourcefulness and inventiveness.

Dr. Pirie (chemistry of plant viruses) whom some of the officers of the Foundation already know, is another brilliant man whom the departmental staff will be very sorry to lose, as I understand that he is going to the Rothamstead Agricultural Station. He is a man of stimulating ideas.

It is the laboratory's good fortune to have another thorough-going, dynamic worker in Dr. Green (biological oxidations, with special reference to flavoproteins and coenzymes). All who work under Dr. Green receive careful, sound training, both in the laboratory and in the mental approach to their problems. He has achieved an enviable simplicity in his spoken or written language. Dr. Green is a pleasant companion, willing to hear opposition to and modifications of his opinions, and possessed of a delightful and contagious strain of humor.

Dr. Bell is an accomplished organic chemist, whose special field is that of carbohydrates.

I was greatly impressed with the conscientiousness and careful cooperative efforts which the staff incorporated into their wide teaching program. The subject matter of lectures and practical work was very well and painstakingly planned in both elementary and advanced courses. I had opportunities to see a number of sets of examination questions, which themselves reflected the breadth of the field covered, and the high standard of work expected of students.

In this connection I should mention Dr. Ernest Baldwin. I had originally expected to work somewhat in association with him, but did not do so since biochemical studies of pigments do not constitute a specialty of his. For this reason, then, and because his time was considerably occupied in assuming with creditable conscientiousness and skill the teaching duties which he carried, we did no cooperative work save a few preliminary experiments in the fortnight before the opening of Michaelmas term in the autumn of my arrival. His leaning is perhaps more toward the teaching of biochemistry than toward the research end. However, he has a number of good research publications to his credit, and is contributing to the advancement of comparative biochemistry.

It is a pleasure to add some passing remarks concerning the laboratory assistants. I found the men and women in this department of service uniformly cheerful, willing and thorough.

The University made no charges to me for bench-space, apparatus, or reagents. They accorded all facilities to me gratis, as a member of the teaching faculty of another university. While I was aware that fellowship allowances would have defrayed any such fees, I regarded the courtesy on the part of the Cambridge laboratory as a generous gesture and a compliment.

If I were asked whether there were any exceptions to my high opinion of the Cambridge laboratory, I should reply that I felt only at occasional times during the colder months, that we might have been provided with a little more heat in the building. This, however, does not stand out in my mind as a very serious matter, and might perhaps be expected as a typical observation on the part of a Southern Californian. I felt also that a substitute might have been trained to attend to such matters as the hot water supply and the central furnace during the occasional absence of the man regularly in charge of these things. As matter stood, the necessity arose, on a few occasions, for make-shift arrangements by investigators themselves.

Two other matters stand out in strong contrast to conditions in American universities. One is the lack of any secretarial or typing assistance, notwithstanding the number of assistants and many kinds of help rendered for research or teaching work in the laboratory. Even staff members, with the exception of the professor of a department and possibly certain others whose administrative and committee-work demanded it, must hire the services of public stenographers outside for the transcription of manuscripts or letters. This situation was amazing to me, and is criticized even by the English scientists themselves.

Another curious antiquation, which could be readily and inexpensively remedied, is the keeping in departmental libraries of a paged ledger in which those who withdrew books register the name, date and borrower, instead of using a modern alphabetized card-index file usually provided for this purpose. Up-to-date card-index files for the shelf-location of books and periodicals are indeed present in all the libraries, which fact perhaps throws the other lack into stronger relief; if one wants a book which is missing from its shelf, one must wade through pages of handwritten entries in the ledger, instead of turning cards readily to the proper typed entry as we do at home.

The English are, on the average, far more patient and less hurried than we.

I encountered some interesting pieces of apparatus and methods of applying them. One or more experts were always ready and willing on request to give instructions as to the use of equipment. Two special pieces of apparatus of which I made very extensive use, and which I propose recommending for purchase from the manufacturers for my own laboratory here, are the Hartridge Reversion Spectroscope with necessary light-filters, and an automatic, electrically-driven mortar-and-pestle for the fine grinding of tough or slimy materials. Another excellent instrument of which several of us made good use was a photoelectric colorimeter, manufactured in Cambridge.

Scientific meetings and lecture courses

During my residence at Cambridge, I attended a number of meetings of scientific bodies, such as the Cambridge Natural History Society, the Physiological Society, the Biochemical Society, and the Society for Experimental Biology. Such sessions were stimulating, profitable, and afforded opportunities to meet many well known investigators and writers. I presented a brief paper on the pigments of halophilic algae before the Biochemical Society, at a meeting at University College, London, and a longer one on carotenoids in lower organisms, during the meetings of the Society for Experimental Biology at Cambridge. Other talks which I gave by invitation were: one before the weekly departmental seminar in the Biochemical Laboratory, in which I spoke of the subject of my research work; and another informal evening lecture before the Geography Club, in which I discussed, with the aid of colored photographic slides, the history, organization and research work of the Scripps Institution of Oceanography.

During the year I attended certain University lectures of general interest, the weekly biochemical seminar, and a number of the regular seminars in the Zoology Department, and a few courses of lectures, i.e., vitamins, (once weekly in Michaelmas term) by Dr. L. J. Harris of the Dunn Nutritional Laboratory; comparative biochemistry (once weekly during Michaelmas and Lent terms) by Dr. E. Baldwin of the Biochemical Laboratory, and advanced lectures on invertebrate zoology (thrice weekly during Michaelmas and Lent terms and part of the Easter term) by Dr. C. F. A. Pantin, Dr. H. C. Gilson, and Dr. J. E. Smith. These lectures consumed only a small fraction (i.e., a total of only some 80 hours) of my entire time at Cambridge, and were, I consider, very profitable to me, presented as they were by able men.

Other laboratories at Cambridge

1. Molteno Institute

Through the kindness and courtesy of Professor Keilin, I was given an opportunity to use certain facilities which this excellent laboratory had to offer.

I had some interesting and instructive talks with Professor Keilin and with Dr. Emil Smith (Guggenheim Fellow from Columbia University) who is engaged in studies of chlorophyll and other plant pigments. I was also very favorably impressed with the personal and scientific qualifications of Dr. Straub, one of the Foundation's fellows from Hungary, who was investigating flavoproteins.

2. School of Botany

Dr. Ralph Emerson, a National Research Fellow, who received his doctorate from Harvard, is working on the morphology and genetics of fungi of the genus Allomyces, under the general supervision of Professor F. T. Brooks. Emerson and I did a piece of work together on the pigments of several species of this genus, an abstract of which is appended to this report. Emerson did the morphological part and life cycle aspects of the investigation, and prepared the drawings. He also photographed the crystals of γ-carotene which I prepared. The biochemical studies are my contribution. The paper was read by Professor Brooks and Professor Hopkins. At Professor Hopkins' suggestion, he transmitted the paper to the Royal Society. It has been accepted for publication following the incorporation of some minor space-conserving alterations.

Dr. Emerson is a very pleasant man personally, and a highly capable, careful and resourceful investigator. He is engaged in the preparation of a monograph on the Allomyces group.

3. Department of Zoology

This is another department which I found to be excellently equipped for purposes of both teaching and research. The newer portion of the block of buildings is very well laid out for space, lighting, aquaria, laboratories, lectures and special rooms for photography and other special technical work. The Balfour and Newton Libraries are well stocked, adequately lighted, and provided with a full-time attendant. The museums are of high grade and well planned to meet the informative needs of the passing observer as well as the requirements of special investigators. They are undergoing expansion and revision under the supervision of members of the faculty.

Since I spent a part of my time in this department, chiefly in connection with my joint investigations with Dr. Pantin, I had ample opportunity to sense a

cordial reception on the part of numerous members of the scientific staff, and the consistently cheerful cooperation of the various assistants in many kinds of service rendered. There were a number of men whom I came to know rather well. With some of them I had occasion to do or plan cooperative work of one kind or another. I found all with whom I came into more than passing contact to be as anxious as I am for the development of an increasingly greater association between investigators in the physiological or biochemical fields and those whose training lies in the more strictly biological domains of morphology, genetics and ecology.

With Professor James Gray, although he is a very busy man, I had opportunities of discussing need for increased articulation between the fields just mentioned. Our conferences had particular bearing upon the chapter on structural colours and pigments which I have undertaken to prepare at the request of the editors (H. Winterstein, J. Gray, and H. Munro Fox) of the forthcoming series of volumes under the title "Text book of Comparative Physiology" to be published by the Cambridge University Press.

Two of the chief friendships which I made at Cambridge were with Dr. Carl F. A. Pantin, Reader in Invertebrate Zoology, and Dr. J. Eric Smith, Lecturer in Zoology. Quite apart from my friendship with these men, I have admiration for their work. My increasing acquaintance with Dr. Pantin grew out of our cooperative investigations of the biology, histology and various pigments in the color variants of the sea anemone, Metridium senile. Dr. Pantin is not only a thoroughgoing zoologist, but a physiologist as well, having held such a post at Plymouth before returning to Cambridge some years ago. He is an excellent lecturer and a brilliant investigator in the realm of experimental biology with special reference to coelenterates. He inspires confidence and initiative in his students. One cannot come to know him without being impressed with his delightful personality, his sense of humor, and his wealth of information on subjects beyond his own specialty. I accompanied him on three collecting trips to various parts of the coast of East Anglia, learning on such occasions a fair bit about certain geological features, and some of the archaeology and historical background of the country.

Dr. Smith is a careful, methodical worker and a deliberate lucid lecturer. Like Dr. Pantin, he was stationed at Plymouth for some time, and still specializes in marine invertebrates. His work is concerned with morphology, the nervous system, and reproduction in numerous members of the invertebrate phyla. In addition to his position as Lecturer, he has charge of the Invertebrate Museum and its reorganization.

I may add that in response to my invitation, both Dr. Pantin and Dr. Smith have expressed a strong wish to do some work at La Jolla at some time in the future, as time, leave, and other considerations may permit. Pantin and I feel that we have opened up an investigation which calls for continuation in the same or a closely allied line whenever another opportunity may present itself. These men are about the age and, I need not add, certainly the calibre, of those whom the Foundation elects as Fellows.

Another of the men of the same age-group and academic status as Dr. Smith is Dr. Hugh B. Cott, Lecturer in Zoology and in charge of a part of the Vertebrate Museum. Dr. Cott has done a great amount of work on chromatic adaptation of various animals to their surroundings, and is bringing out a voluminous book on the subject. He showed me his many photographs, drawings and pattern-analyses in manuscript form, and I admire the tremendous amount of work which has been put into the preparation of the book. Incidentally, Dr. Cott is to prepare one of the three chapters of the same serial volume of the "Text book of Comparative Physiology" in which Dr. G. H. Parker's and my own respective chapters are to appear. Recently, Dr. Cott has donated much of his time to the Royal Air Force, acting in an advisory capacity with reference to the camouflage of air-dromes, factories and other ground structures.

Before I left, Dr. Cott and I had drawn up tentative suggestions for what we consider a very desirable symposium, many-sided in character, on the various colors and pigments in the animal kingdom. This kind of symposium, we feel, could be dealt with to the greatest profit in connection with a future International Physiological Congress.

4. Dunn Nutrition Laboratory

I did not visit this laboratory as often as I should have liked to do, for it is situated a couple of miles or more away from the Biochemical Laboratory. However, I had an opportunity to see it a number of times, and to see the recent work that Dr. Thomas Moore is doing with Vitamin E, as well as some of the modern techniques employed by Dr. L. J. Harris, in his investigations of vitamins in children's diets. Both Dr. Harris and Dr. Moore were friendly and helpful.

Other Institutions in England

At Bristol I had the pleasure of visiting the home and the laboratories of Professor C. M. Yonge, who is an authority on the physiology of invertebrates, his researches being concerned especially with the feeding and metabolism of mollusks and crustaceans. He and I had been in correspondence for several years

and it added to our mutual pleasure to meet in person and to discuss a number of matters relative to our researches.

During the Christmas season my family and I spent a few days with relatives in South Devon. Even there we did not escape all of the cold and the rain of a very stern winter. During our sojourn there, we visited Plymouth for one day as guests of Dr. and Mrs. E. H. Myers. Myers, formerly at the Scripps Institution where he took his Ph.D. degree, was extending his work, as a Guggenheim Fellow, on life cycles in the Foraminifera, and had added much to his findings. He took me through the Marine Biological Laboratory, where I met some of the scientific staff, including Harvey (marine plant nutrients), Wilson (marine animals) and Ford (fisheries). These men were uniformly cordial in inviting me to return and spend some time working at the Plymouth Laboratory. This, of course, I could not do, since my work was well laid out at Cambridge. En route home on the "Queen Mary" I met Dr. L. H. N. Cooper, also of the Staff at Plymouth. He is a productive worker in chemical oceanography. Of special interest to me is his initiation of a program for an extensive study of iron in the sea, with reference to both the inorganic and metabolic phases of its cycle.

We met, on the "American Trader" on our way to England, Dr. William H. Newton, known personally to several of the officers of the Foundation as a recent Fellow. In the Newtons we found congenial and delightful friends with whom we saw numerous of the more important parts of London and its environs. With them also, we went on a four-day trip by car through much of the southeastern, southern, central and western part of England. This short hiatus in my Cambridge activities, taken with the approval of the Paris office, provided a much needed period of rest and offered an intimate glimpse of other parts of English country, people, and history.

With Dr. Newton's writings and reputation the Foundation is already familiar. I admire his open mind and sound judgement, and enjoy him as a gracious host and a good companion. Others at the University of London whom I met are Professors Lovatt Evans, J. B. S. Haldane, and J. C. Drummond. I was glad of a chance to talk briefly with Drummond, since he knows much about lipids, including sterols and carotenoids.

At the Imperial College of Science and Technology in South Kensington, London, I visited Professor I. M. Heilbron, saw his new laboratories and some of the work which he and his associates are doing with carotenoids of marine algae. I was impressed with the spaciousness, lighting and modern equipment of

his laboratory, and with the number of research workers and advanced students engaged in work there. He has also a well equipped room for microanalytical work. Professor Heilbron and Dr. E. R. H. Jones, gave me a friendly reception and devoted a considerable portion of one afternoon to taking me around, and discussing problems of mutual interest. They were engaged in an investigation of sexual differences in kinds and quantities of carotenoids and chlorophylls stored in the gametes of certain species of marine kelps. Their work presented an interesting analogy to the researches of Emerson and myself in the fungus Allomyces.

Other places of interest visited were: Darwin's home, now a museum faithfully reproduced to represent its original appearance, in Downe, Kent; the fine extensive zoos, at Regents Park and notably at Whipsnade, and the governmental fisheries laboratory at Lowestoft.

Paris

I appreciated the support of the Foundation which made possible a visit of several days' duration to Paris during the past April, primarily for the purpose of meeting and talking with a number of men there.

Dr. Edgar Lederer, a member of the zoological faculty of L'Ecole Normale Superieure of the University of Paris was one of the men whom I saw. He and I, engaged in similar studies of the pigments of lower organisms, had been in correspondence for a few years. I enjoyed his company, and proftied by the discussions which we had. His laboratory is modern, although not large, and is in a large building of recent construction, housing a number of related departments. He took me through several laboratories and introduced me to a number of the staff. I enjoyed talking with Dr. Maurice Fontaine whose work on the flavine pigments impresses me as an important realm of research. Another man with whom I spent some profitable time is Dr. Jean Verne, Professor in the faculty of Medicine. His laboratories are in the Institute of Cancer, in Ville Juif. This institute was completed within about the last decade, and comprises a large group of laboratories with a cancer clinic attached. The size, extensive staff, modern equipment and construction of the institute are impressive. Dr. Verne is actively engaged in and in charge of cytological and tissue-culture researches, and in investigations of animal pigments. He has been working for many years on the biochemistry of different pigments, chiefly melanin and carotenoids, more recently with reference to medical aspects of melanism and with regard to the metabolism of carotenoids. One of his younger associates is Dr. V. Vilter, who is working principally with the histology and experimental melanization of amphibian skin.

At L'Institute Pasteur, I was conducted through various laboratories, the library, and other parts by Dr. Andre Lwoff, who showed me some of the work which he and his associates are doing. I was especially interested in some of his earlier work relative to the synthesis of carotenoids by certain lower organisms. Of great importance also is the current work of his colleagues and himself on specific organic compounds in the nutrition of various single-celled forms.

Some free time during the week-end portion of our Paris sojourn allowed us to visit various points of beauty, places of historical importance, and interesting parts in the immediate vicinity.

* *

Finally, returning to a few brief remarks about Cambridge, I was honored by invitations to participate in a number of affairs both informal and formal, in different colleges, to say nothing of our happy experiences as guests in the homes of various friends. Most delightful of such memories are the annual Commemorative Feast at Trinity College, as guest of a past Fellow, the Rt. Hon. Frederick Pethick-Lawrence, M. P., an annual Feast at Christ's College as guest of Dr. Pantin; dinner in hall with Dr. Baldwin at St. John's College; a Thanksgiving Dinner for Americans and their wives at St. John's ; luncheon at Gonville and Caius with different friends, and a Christmas party in Dr. Eric Holmes' rooms at Downing College.

The Cambridge people are in every way friendly, gracious hosts to their visitors from American universities.

August 28, 1941

President Ray Lyman Wilbur
Stanford University, California

Dear President Wilbur:

During my years at Stanford University, I discovered there an unparalleled spirit of friendship and loyalty combined with the highest standards of research, education and ethics.

This year, the fiftieth of Stanford's chartered history, brought a signal honor, two-fold in character, from the University which awarded me the doctor's degree ten years ago. I accepted with pride the invitation to represent last June the alumni of Stanford's School of Biological Sciences at the Formal Academic Convocation, and to serve as an assisting host at the President's Luncheon which followed that momentous ceremony.

The depth of my gratitude for what Stanford has given me, and the measure of my pride in being identified with Stanford may not easily be put into words.

Stanford's individuality and spirit reflect the evolution of qualities in human greatness which long antedated her specific history, but which have been given expression in the unfolding witnessed in her first fifty years.

We who know and love Stanford recognize with abundant satisfaction that promise which is an integral part of her being — the promise of ever-increasing growth, achievement and service to Humanity.

Yours faithfully,

DLF/LMD

Dr. Warren Weaver
Director, Division of Natural Science
The Rockefeller Foundation
49 West 49th Street
New York 20, New York

September 12, 1949

Dear Dr. Weaver:

While in New York in mid-July I had the pleasure of meeting with Mr. Lyle, and of a visit with Dr. Pomerat. I was sorry that you had to be away at the time. I had hoped to meet you, and planned to have another try on my return from England. It happened, however, that a sleeper reservation to the Coast was available on the day of the "Queen Elizabeth's" docking September 1. I therefore took that opportunity of reaching my home and family twenty-four hours earlier, and of effecting some saving in the matter of hotel and meals.

I wish to assure you and my other friends on your staff that this recent mission to England, with the help of the Foundation, was highly profitable to my book project and to myself professionally and personally. My arrival on the evening of July 28, and my remaining around Cambridge until August 26 afforded just the opportunities for which I had hoped and planned. I found it possible to discuss phases of my manuscript with numerous colleagues in chemical, physical and biological fields. Had I shortened my time at either end, some of these men would have been unavailable since they would have been away on holiday, or would have had insufficient time to spare. As it was, much encouragement and many useful suggestions resulted, enabling me to do considerable additional writing, collecting of new references, and modifying of the text while at Cambridge.

A private room was provided for me in the Department of Zoology for the whole time of my stay and I had the use of excellent rooms in Trinity College for a week.

Mr. Kingsford, Secretary of the Cambridge University Press and his colleague, Mr. Dreyfus in the Printing Department, were most encouraging, cooperative and complimentary. Before the book takes a definite position on the docket, it will require formal action by the Syndics of the Press, who are scheduled to meet this month. I shall subsequently receive definite suggestions through Mr. Kingsford.

Work on my manuscript was continued at intervals during the period of the First Insternatinnal Congress of Biochemistry August 19-25. At the Congress I presented a paper on "Carotenoid Metabolism in the Sea." The material was well received and brought out numerous discussions both at the session itself and at private gatherings in the Congress Headquarters and in my rooms.

All together my mission was most profitable from every standpoint, and I trust that the eventual character of the work which has been done may provide ample proof of this. Meanwhile, I wish to thank again the Officers of the Foundation for their sanction of this trip. Incidentally, by no means all of the potential allotment of $1500 was used, but only slightly more than two-thirds of this amount. Furthermore, the Research Committee of the University of California has granted remuneration of the round-trip rail traveling expenses between San Diego and New York.

While I was in New York, Dr. Pomerat urged me to look up Professor A. R. Todd, of the Chemistry Department, in Cambridge. I did so, and learned of the excellent work which he and his group are doing with the anomalous pigments of aphids. I also loaned him my manuscript for a brief perusal.

Dr. Pomerat expressed the continued interest of the Foundation in learning of men who could profit and advance their scientific fields by support of their researches. As a past Fellow, I had always been aware of the Foundation's policies, and assure you that I have at no time forgotten to keep the matter in mind.

Two worthy men whose names I wish to place with you are both men about whom I had written during the war years. Both are experimental zoologists at Cambridge and equally deserving.

The first is Dr. Carl F. A. Pantin, F. R. S., Reader in Experimental Zoology, who I believe has already written you. He will have leave for about two school terms beginning with the summer of 1950. He plans to accept an invitation as visiting Professor of Zoology at Rio de Janeiro from summer until perhaps mid-October, 1950 and then if possible to work in my laboratory for some four or five months and make visits to several others in the vicinity, finally spending about a month at Woods Hole prior to his return to Cambridge in time for the Easter Term.

As you perhaps know, Dr. Pantin is assuredly one of the most outstanding, original and resourceful investigators and thinkers in the field of evolutionary and other fundamental biological problems today. His chief work has been with comparative physiological problems in coelenterates, worms and other marine invertebrates. He has at present a number of problems which he desires to complete especially on the physiology of the nervous system in coelenterates. He has been assured that there is biological material here at La Jolla and that I shall gladly place laboratory space and facilities at his disposal. While Dr. Pantin is just past fifty, he is a vigorous investigator who could utilize with great scientific profit one of the Special Research Fellowships which are occasionally granted by the Foundation (e. g. in the recent instance of my colleague

Professor C. E. ZoBell, whom I sponsored in 1947). I should like to heartily recommend Dr. Pantin for a Special Fellowship during part of the academic year 1950-51 and to learn of your ideas concerning such a possibility.

The other man at Cambridge is Dr. James Eric Smith, Lecturer in Zoology, who has done much excellent and careful work notably on the nervous system, responses and behavior of echinoderms. He and I have discussed possible experimental work together at some considerable length, and agree that some fundamental research into the histological, physiological and biochemical aspects of marine invertebrate integument, where pigments are often generously deposited, is urgently called for and is worth a joint attack from the standpoint of experimental ecology, here at La Jolla. Dr. Smith will not ask for leave until Dr. Pantin's return, perhaps for 1952. He is also beyond forty, but is a man who would richly merit the consideration of the Foundation for a Special Fellowship.

These British scientists, as you know, are naturally bound to home shores unless or until the present financial stringency applying to their travels is relaxed. Meanwhile, the resulting situation relative to British science is a rather serious one. I have known Dr. Pantin and Smith well for more than ten years and have published jointly with the former. Both of them are regarded highly as men and as scientists, by all who know them and their work.

I sincerely hope that you will feel able to give earnest consideration to each of these men. I should not like to have to choose between them, but can readily assure you that each stands at the top of any list of contemporary candidates which I can call to mind.

With cordial greetings to you, also please to Dr. Pomerat and Mr. Lyle. And again with my cordial thanks, I am, as ever,

Yours faithfully,

Denis L. Fox
Professor of Marine Biochemistry

CLF/ch

March 21, 1951

My dear Wayland:

This message, posted to reach you by March 26, when we shall be dedicating the beautiful new building in your honor, brings hearty greetings and warmest regards from Miriam, the children and myself.

The Thomas Wayland Vaughan Museum-Aquarium is a model of sound construction, beauty and dignity, worthy of bearing your name and of comprising a permanent, unique and important part of our University. We all wish you might see it just now; it has doubtless been described to you. Its light green color blends well with the surroundings of your former house, and its front faces the East. Its upper floor affords space for the administrative offices for the time being.

Lacking but a few months, two decades have passed since, following your invitation, I arrived at La Jolla as a very green instructor to join your faculty. Yet it seems, in many ways, like merely yesteryear, while Roger and Dick were graduate students, along with such lesser lights as Thorpe, Cupp, Wells, Myers and others. To you belongs a large share of the credit for inspiring the coordination of biochemistry with the other marine sciences which, in their integration, implement the steady growth of oceanography.

I have experienced, during my years here, an increasing sense of satisfaction with the expanding realm of research and instruction which lie open before us. And I feel deep gratification for the opportunities and the early guidance which I received from you. Your influence is today reflected in our researches on marine colloids and their role in biochemical cycles in the sea. The relationships which these colloids bear to the nutrition of innumerable animals and bacteria, and to the chemical constitution of waters and sediments of the ocean, and the modification of optical properties and capillary waves by marine slicks, all bring members of our laboratory into cooperation with those of numerous other divisions. Continuous integration of the various phases of oceanographic science is sought as the indispensable means of advancing our frontiers of inquiry, and is practised in our graduate instruction. You would assuredly be rewarded by an opportunity to witness personally the general progress which I am trying to outline. A large share of it represents the culmination of your own early concepts and delineations.

Our two older boys, Ronny and Steve, who were but 2 1/2 and 1 year when you left La Jolla, are tall young men, about to surpass their dad in height. They are in their latter years in high school, both of them greatly interested in science and in their instrumental music (oboe and bassoon respectively). Kathleen, at 10, is a lively, charming and intelligent little girl whom I heartily wish you might know,

for her sake as well as for your own. Alan, approaching 3, is a genuine buster, with a strong sense of humor and a love of mechanical devices; he requires considerable vigilant attention. The youthful spirits of Miriam and our children help me to retain my own.

I hope that you will realize that we are very much with you in spirit at this time. And I ask you to remain always mindful that I am, with affectionate regards to you and to our long-time good mutual friends, Dick and Alice Fleming and their charming family,

Ever your admiring colleague and devoted friend,

March 26, 1951

My address at the dedication of the
Thomas Wayland Vaughan Museum-Aquarium Building

Dr. Wayland Vaughan: As one of those whose privilege it was to know you so well during your years as our Director, I cherish this opportunity to be one of those participating in the dedication of the Thomas Wayland Vaughan Aquarium-Museum in your honor, as a perpetual monument to learning and to public education.

Prominent among those qualities which impressed themselves upon me, and which inspired in me a spirit of emulation, were your breadth of scholarly interests and achievement, your loyalty to all of your friends and colleagues, and beyond this, your deep human qualities and liking for people.

Throughout your career, your adherence to, and insistence upon, precise methods of exploration and exactness of clear, unequivocal written and oral communication have been brought consistently to bear upon your objective approach to scientific problems and the many contributions which you have made to our understanding of living and fossil organisms, their environments and their adaptations to the ever changing features thereof. To your scientific productivity, you added an active appreciation of the cultural world, notably in languages and esthetic arts.

In affording me the early opportunities of my academic career you emphasized in an effective and lasting manner the prime importance of closely integrating the disciplines of mathematics, the physical and the biological sciences which, in only such relationship, constitute the science of oceanography.

Although you are unable to be present among us today, as we all heartily wish you might be, I am nevertheless able to visualize you clearly, seated before us as we talk to you. The sound of your voice is readily appreciated through the ear of memory, while your keen and perceptive glance, ever ready to give way to a merry twinkle, returns to the mind's eye with the pristine richness of spring.

Whatever the degree of physical separation, whether measured in years, in leagues or in both, it is a man's virtues which bind him forever to the minds and hearts of his fellows. His virtues will long survive any monument or edifice which man can build. Such are my reflections as I stand before the portals of this building to which we are giving your name.

7 February 1952

Mr. Mayer Monasch
Telegraph Avenue near Sather Gate
Berkeley, California

Dear Mayer:

As one of thousands who must have been reading the January 1952 issue of the California Monthly, I was really delighted to see your picture in this issue, and still more so to read of your benefactions to students. And rather than just think about it, I propose to write you a line at once.

All of us who have known you remember your kindliness and consideration for the boys who came into your shop through the years which have passed. And, while I had not previously learned of the great extent of your generous activities, I felt no great surprise as I read about it. It makes your many friends the more proud to know you.

I well remember my college years in Berkeley, during which you were friend and informal counselor as well as tailor. A tailor, furthermore who often waited patiently for payment by many of his college customers.

Last time I visited Berkeley you may remember my bringing my eldest son, Ronald, in to meet you. He is now 18 and will enter the University this fall. I feel sorry to think that he may not have the opportunity to know and see you often, as I did, but you have well earned a rest from your many years of faithful service to a full generation of college men.

Keep as active as desirable, and happy.

Cordially yours,

Denis L. Fox
Professor of Marine Biochemistry

DLF:ch

16 February 1953

Provost Gordon S. Watkins
Riverside Campus
University of California
Riverside, Calif.

Dear Gordon:

Your recommendation to Stan McCaffrey that I be invited to the Lair of the Golden Bear as a faculty guest during a week of the coming summer is a most heart-warming overture on the part of one whom I count as an outstanding friend and colleague. Your kindness is deeply appreciated.

You were, moreover, most generous in sending me a copy of your letter in which you wrote of me in such cordial terms. It is, I am sure, the most complimentary letter that I have ever received from a colleague. Whatever may be the outcome of your recommendation (for Stan may have this full complement of speakers already filled, or he may have alternative faculty men in mind toward that end) your letter itself will have constituted the chief pleasure and source of gratification in my own mind.

I am currently doing some occasional consulting with the Hunter-Douglas people in Riverside, and they want me to visit their plant. If, or when, I should find the opportunity to do so, my primary objective will be to visit with you and to see more of your plans for the growing campus. Of any plans for such a day's trip, I shall write you well in advance in order to avoid any embarrassment within the time schedule of a friend and a very busy man. People are still talking about the delightful and stimulating lecture which the Fellows of the San Diego Society of Natural History heard from you at the Scripps Institution on December 8. As a matter of fact, I think that we on the faculty and staff of the Scripps Institution ought to have you to ourselves for a sequel on the subject one day, on this campus.

With cordial regards, and again, my hearty thanks.

Faithfully,

Denis L. Fox
Professor of Marine Biochemistry

cc: Director's Office
DLF:dak

Dr. Ernest Wilcox
Department of Music
La Jolla High School
La Jolla, California

16 June 1953

Dear Dr. Wilcox:

I feel that I should fall short of being sufficiently candid to deserve a reputation as an honest friend were I to refrain from expressing an opinion merely because it happens to center around Steve. For, as a long-time member and past officer of the B. P. A., I should be concerned about the matter even were a chance acquaintance or a stranger the young musician actually involved.

When, one evening in April, I happened to be invited, as a past President, to sit with a small group who were planning the B. P. A. scholarship, I did so with some protest, naturally, for reasons which I think you would understand. At any rate, I left with the definite impression that the scholarship committee would carry out their expressed intention of presenting the candidates to a jury of three musicians whose judgement, after hearing the young contestants, would be final. What was my amazement, therefore, to find that a group of businessmen had voted on candidates known only by number!

I am sure that, knowing me as you do, you will understand that I have no grudge, no prejudice against the recipient whose number was chosen. But there are certainly, to my mind, some comparisons which strongly favored his chief competitor. Everyone who speaks of it (and these have been numerous) looked on the bassoon player, who also played most creditable piano accompaniments, as the best of this year's crop of young musicians. This I could not conscientiously deny in my own mind. Both have played solos, it is true; Steve, however, was the sole representative of his school band at the All High School Music Festival in Santa Barbara where he won the position as solo bassoonist. He had played faithfully in the concert band for five and a half years, during the last several of which he had receive A grades, and is graduating with a grade point average of 2.44, while the other lad's average is under 2.

I have not found it easy to find replies to those who feel as we do, and who ask how the decision was made when they understood that musicians were to constitute a panel of judges. Similarly, the real answer to questions relating to his tertiary, rather than principal position in the instrumental music honors list at the Honor Assembly is equally difficult to find.

It seems that some days before the B. P. A. Award Assembly, the ultimate recipient of the prize had been assuring Steve that while he considered Steve a better musician, he felt sure of the B. P. A. scholarship himself, in view of our

having provided the information about the Stanford scholarship. I practically assured Steve that, on the basis of what the officers had given me to understand, such a contingency should hardly be entertained seriously since musicians were to be the judges of the candidates' instrumental development and ability, and that this, plus academic scholarship, would constitute the chief deciding factors, as is usual in such matters.

The foregoing coverage of qualifications are naturally points which must have been considered when the relative qualifications were set forth. I have been told, however, that the decision was made largely on the basis of the fact that one of the candidates had received a scholarship from outside the school. If professional and scholarly qualifications had been involved, reather than supposed financial need, surely the outside recognition would have emphasized merit rather than barring an already recognized player from receiving a school award. At the very least, a pair of truly closely matched candidates are often given equally divided honors and this usually pleases them both.

Steve was deeply puzzled as to why he had not received even his final bar award for service. He explained to me that he had, indeed, unavoidably missed one rehearsal since he had promised to play in a concert and this happened to fall on a Thursday night. But he said that two other performances in which he did not participate, and for which he therefore received no credits, were such that he was actually advised that he wasn't needed.

Well, this is all water under the bridge, of course, and I feel sure that there were reasons for not advancing him to the minimal threshold of the necessary qualification. It will ever remain my opinion, however, that Steve deserved more credit than he actually received at the end of his senior year. He had amply and proudly represented his school at as many functions as possible, sometimes at considerable inconvenience at home. He had brought honor to his school from the All High School performance, and had accompanied a competing musician fellow-student's solo. But, the important matter to us is that, while puzzled, Steve is of course not bitter.

As a member of the Association I hope that any future B. P. A. awards may be (1) more than one (2) each somewhat more moderate in amount, and (3) wisely directed, certainly without withholding the candidates' names from the voting body unless this be composed of musician judges.

I am sure that you will know that it has not been at all easy to decide to write this letter, or to actually execute it. For we are ever mindful of the devotion with which you have served the young musicians of La Jolla for more than a score

of years, bringing out bands of true distinction and developing musical talents to their maximum within many individuals.

You have been extremely thoughtful and painstaking with our own youngsters, supporting in countless ways their advancement and recognition which you felt that they deserved.

It is, therefore, not my anticipation, and it is far indeed from my hope, that a frank statement from me shall impair the cordial friendship which we have always enjoyed.

As ever with sincerest regards,

Yours faithfully,

Denis L. Fox

DLF:dak

Sent 9/24/53, one copy "to my son at U. C., Berkeley", the other "to my son at Stanford". D. L. F.

A university is a community of scholars devoting their days to giving and attaining the best of which they are capable, toward the highest ends they know, without counting the cost. In that community, there is not, and cannot be, any real separation between faculty and students. They are all striving to learn, to teach, and to share; they are inextricably bound together in a journey toward a common goal. And, as the students become alumni, whether with baccalaureate or higher degrees, or with any formal degree at all, their dedicated task does not cease when they leave the university. Their history binds them to the university of whose community they were once actual campus members. Their sons and daughters, their students, the children of friends and colleagues all deserve to enter the university which has undergone improvements through what has been contributed by past and/or continuing members of it.

I am proud beyond my power to convey it in words, that you are a student in the university where I have studied and taught. I am proud of the fact that your coat displays the colors which identify you as a living, contributing part of that university. You have chosen it, not merely to be dressed like your friends, but to identify yourself with something even greater than the simple sum of your fellows at the university. I hope that you will always wear your university's colors with pride, and that you will try at all times to typify, as a scholar and citizen, the dignified and honorable goals to which your university is dedicated. All of this with reference to your teachers, to your fellow students, and to strangers, who will judge the university by its members. And correctly so, for you <u>are</u> the university.

For my own part, I have not invented a machine, or a product, or a process to improve the economic or physical needs of my fellow-men, although I take a measure of satisfaction over contributions which I have been able to make to industry. My life has been largely devoted to the teaching and guidance of students, to research and writing, toward contributing to the sum of our knowledge along certain scientific lines. One's consistent effort in such activities is to convey the truth in as simple and unequivocal terms as possible. Time will reveal whether one's efforts in this have been successful. Effective writing possesses a degree of immortality, transcending the mere life span of its author.

In any case, I take additional pride in the fact that the several of us are

engaged in our respective jobs of doing and learning in university work. Let nobody entertain the illusion that any one line of scholarly endeavor is, per se, greater than another. Success rewards the voyager who knows, in general, the direction he wants to go, and whose hand is firmly on the tiller despite temporary cross-currents or rough waters.

4 March 1955

Professor George Wald
Department of Biology
Harvard University
Cambridge 38, Mass.

Dear George:

Seldom have I so enjoyed reading a scientific review article as I have yours on the origin of life in last August's Scientific American. Perhaps this is not only because the paper is excellently and clearly written, but because I feel in close agreement with what you have to say on what is perhaps my favorite biochemical subject.

When you have reprints available, I should appreciate a copy, with an extra one, if you can spare it, to send on to my son, a chemistry major in his third year at Berkeley.

A few ideas came to me as I read your paper, ideas which perhaps lay in the back of your own mind as well, but which, in the interest of brevity, were not given emphasis. In the first place, if we care to set some reasonable limits on the space within which life may have had its inceptions, this should greatly favor the ultimate success of the time factor which you rightly stress as providing for the unique beginnings of replicating entities. Your point is very well taken concerning the rate of hydrolytic cleavage, exceeding that of condensation, with elimination of water, especially when the whole system is in a dilute sea of broth. And you have developed some logical ideas to explain why equilibria need not perpetually implement the breaking down process.

But supposing we should go a step further, and discuss the possible application of the mass law? Thus, rather than the great dilute mass of sea itself serving as the cradle of the first living systems, a more likely locus might have been realized in fairly restricted, rather shallow, land-locked bodies of initially dilute saline water. In some regions, the effects of slow evaporation would have exceeded dilution from rainfall or run-off. Accordingly, the organic molecules of potential reactants, gradually attaining higher concentrations, would thus promote increases in total stock piles on the synthetic or condensate side of the equilibrium. Such relatively quiet environments might also favor the greater stability of such systems as thixotropic coacervates, and thus perhaps enhance the rate of increasing complexity.

Moreover the areas of air-liquid and solid-liquid interfaces, which often serve to concentrate reactants and hasten their interaction, would be greatly increased, relative to total mass, in smaller volumes. Prevailing temperatures

would be somewhat higher which might accelerate progress toward a state of equilibrium (never of course actually achieved); vigorous motion, e. g. by wind and waves would be less, and perhaps thus less apt to bring about "denaturation" at surfaces. However, whether or not some degree of "denaturation" might have been favorable to life's beginnings, is perhaps an open question) but I think we may entertain, with some advantages, the general idea of adsorbed slimes and floating scums to complement the notion of a thin, diffuse broth.

I looked for some mention of the importance of water of hydration and the role of the hydrogen bond; although you discuss molecular competition for water, the matter of bound water, which characterizes colloidal organic systems, notably proteins, is surely also of great importance. Not only does bound water rigidify and to some extent protect colloids against certain mechanical and chemical influences, but in the bound condition its role as a common solvent and as a hydrolytic agent is greatly modified. It is of course an indispensable condition for the integrity and repair of bounding surfaces, and for stabilization of bio-colloidal systems.

It would be fun indeed to get you out here on a visit sometime, and to talk a lot more together. I wonder whether I shall have the pleasure of seeing you at the Brussels Congress?

Cordially, as ever,

Denis L. Fox
Professor of Marine Biochemistry

DLF:dk

MY VISIT TO WALES--August, 1958

(By Denis L. Fox)

Wales is enchanting, wild and bleak in spots, amazing and a land of great contrasts, of geological and historical antiquity. The people are industrious, very friendly and cordial. This I found not only in my several hosts there, but in shops, restaurants and even on the streets and buses. People speak and smile at the outsider. I spent a couple of days in Swansea with Professor Knight-Jones and his family. He is chairman of the Department of Zoology at the University College of South Wales, where they have some fine new buildings growing up. They took me not only all around the charming Gower peninsula and to the East of Swansea as well, but insisted on driving me clear up to Aberystwyth en route to Bangor. We saw some ancient structures on our way, also some contrasts as we got from South into Mid-Wales. The 13th century ruins of the monastery at Florida Strata was one memorable stop; the Devil's Bridge another.

En route from Aberyswyth to Caernarvon, a 4-hour bus trip, we saw some high, sharp mountain structures with bizarre shapes among them. One of these was pointed out to me as the Devil's Pulpit, by a woman sitting behind me and, knowing me to be a foreigner, apologetically wakened me from a momentary doze by repeatedly slapping my shoulder. Another time she similarly assured me that I should not miss a small, colorful village pageant as we passed a tiny settlement. How I loved all that, and the kind but vociferous raillery, in Welsh, that soon broke out among these people, all of whom had begun the journey as single or at most, paired strangers to the rest. Soon, as was of course inevitable, I was asked a question. It was during a temporary stop, so everyone could hear the words that passed. A kindly, rollicking old lady, sitting across the aisle, asked whether I could read or pronounce all words I was poring over on my map. I replied that I was having a good try, or something to that effect. When, an instant later, it was revealed that I was from California, everyone, it seemed became interested; anyway, the dear old gal sat next to me for a little bit, pronouncing each Welsh name on my route and insisting on my repeating, clearly and <u>accurately</u>, after her. When my duplication of some of those tongue-twisters seemed particularly good, there was a kind of ripple of appreciative laughter; I suppose my rendition was just enough off the conventional pronunciation to be refreshingly amusing. A couple of times, I remember, a number of them applauded; whereupon, in keeping with the growing spirit of informality and merriment, I rose and did a brief bow.

At Caernarvon I was met by Professor and Mrs. Brambell. He occupies the Chair of Zoology in the College of North Wales, in neighboring Bangor. We drove

around the magnificent castle, then over to Bangor, where they live in a lovely old house on the shores of the Menai Strait, just next to the world-famed Menai Bridge, which I could see in full from my bedroom window. Directly across from us was the Marine Station of the College. My host was a Fellow of the Royal Society and a most warm, hospitable, and intellectually-stimulating companion. He speaks beautiful English, and is in fact, lay reader in the Episcopal Church. His wife is a Churchwarden. They took me on drives about the ancient Isle of Anglesey. It was the last strong-hold of the Druids in Britain, where their numbers were destroyed by the Romans in about the first century. There are many ancient monuments on Anglesey, dating back even to the late Stone Age.

Excerpt from a letter sent to Lonnie's sister, Mrs. E. R. Brown, 58 Eglantine Road, Rochester, New York.

3 November 1958

Mr. Alonzo D. Webster's twelve years of friendly, cheerful, loyal and devoted service in the laboratories of the University of California at La Jolla have been appreciated far more by his many friends here than he ever realized.

Because of this, I am moved to write these few inadequate words concerning Lonnie, who kept our scientific glassware clean and properly stored away, much of the laboratory ironware freed from rust, freshly painted and properly operating, and his own working area immaculately clean and neat.

Faculty, staff, students, and other members of this University community held Lonnie in their esteem and their affections not only because of his thoroughly dedicated attitude toward, and work for, his fellow men in the organization, but equally for his human characteristics. Modesty, even to the point of shyness, was conjoined with ever-ready humor and daily cheerfulness; his kindness, compassion and consideration for others, and his great pleasure over even minor gestures or signs of friendliness and appreciation shown him--these were all parts of the man we now miss so keenly. I well remember the pride he took in wearing his 10-year service pin, and his earlier anxiety lest he might be asked to stand or walk forward to receive the award.

The center of Lonnie's life seemed to be here at Scripps. At work and in his small cottage-apartment he was a methodical perfectionist in maintaining cleanliness and order, all in accordance with an adopted time schedule, insofar as possible.

For recreation, he enjoyed reading, especially about the history of the Western States, the cinema or television (again notably "Western"), fishing, horseback-riding (when he customarily used to don a cowboy's hat), and during the last year or two, his own car, which he kept immaculate in appearance.

We are saddened by the sudden extinction of his life, but glad that his passing was quick and without suffering. We shall not likely find his kind again, nor will it be easy to replace him in the important position into which he brought his own spirit and loyalty, steadiness, cheerful cooperation and thoroughness, all combined with a deep and abiding admiration of scientific lore, a great respect for scholars and a lively, pristine curiosity about all things in the world about him.

There are those among us who will miss Lonnie's annual Christmas card, always selected for great beauty of subject, color and sentiment. The good parts of a good man never die.

Denis L. Fox
Professor of Marine Biochemistry

IN MEMORIAM

Alonzo D. Webster
1902-1958
Laboratory Helper

Known to nearly every one at the Scripps Institution of Oceanography as "Lonnie", Mr. Alonzo D. Webster has left lasting impressions on the place and on many people. By action and attitude he placed a literal interpretation on his title, being dedicated to his work and always anxious to please his associates.

Lonnie Webster reported here for duty 13 January 1947. Except for short earned vacations, he was indeed on duty every minute of every day until taken by a cerebral hemorrhage 1 November 1958. He came to us with excellent character references from Rochester where he had worked for many years. He liked his work and was well liked as a maintenance man in the equipment department of Eastman Kodak Company, but he didn't like the long winters in Rochester. Previously he had served as maintenance man at Colgate College until called for service in the U. S. Army during World War II. From 1924-39 Lonnie was a private chauffeur for Mr. Frank Taylor in Rochester.

After a short probationery period as Laboratory Helper at the Scripps Institution, a supervisor recorded the following in an inter-office memorandum: "This is to recommend a merit increase for Mr. Alonzo D. Webster, who has proved to be a very conscientious worker. He is always punctual and a perfectionist in the performance of his duties. He has a strong sense of responsibility and exhibits both interest and pride in his work. He does all that is expected of him and tries to do more. He is cooperative, cheerful, and loyal." Extracted from a more recent memorandum: "I recommend a merit increase for Mr. Webster, as one of the most deserving in the Division. He has continued to render exceptionally fine service. He is industrious and busy every minute, always trying to be as helpful as possible. He takes a proprietary interest in the equipment and facilities and personal pride in the achievements of people working in the Division."

Lonnie had an almost reverent respect for his associates at the Institution and a worshipful admiration for those having more technical training. High on his list of heroes were Dr. Roger Revelle, Mr. John Kirby, Professor Fox, Professor Rakestraw, O. B. Maler, Fred Sisler, Carl Oppenheimer, Dick Morita, and I hope he held me in as high respect as I did him. Lonnie never spoke unkindly of anyone, but he had words of praise for those who worked hard, were honest, and kind. He placed a high premium upon any word of encouragement or word of recognition received from his superiors. Among his most prized possessions was a blue letter from Director Revelle acknowledging ten years of faithful service to the

University. Lonnie kept this letter, protected in a transparent envelope, tacked up back of a cupboard door in the laboratory, being too modest to display it, but mighty proud to have it seen. Lonnie also kept and cherished the cards which various thoughtful people mailed to him throughout the years.

His contribution to our research and teaching program cannot be measured in terms of titles of papers, inventions, inspired students, or fundamental concepts in science or technology. Instead he leaves only intangible evidence in the minds of men who have known him that Lonnie helped to make these things possible. Though not the "big wheel", he was an important cog and part of the motor that kept it moving forward. He found and filled his niche adequately and admirably. In a thousand and one ways he left his impression as a most unforgettable character.

Claude E. ZoBell, Chairman
Division of Marine Biology

21 December 1959

James Worley, Esq.
Department of English
Fox Lane High School
Mount Kisco, New York

Dear Mr. Worley:

Congratulations on your stand, and on your statement of it as published in TIME (Dec. 7). With more such expressions from persons who thus dignify the teaching profession, we shall see an emancipation of countless worthy educators from The Procrustean rack erected of the deadwood salvaged from (and by) the "Back Eddies" of our public educational systems.

I'll wager that a lot of people in this currently expanding University center would appreciate more men with your professional ability, convictions and courage out here in Southern California, where I understand teachers' salaries compare favorably with those in your own fine state.

Should this idea perchance ignite a spark of interest after some reflection, you could learn more from my friend Dr. Ralph Dailard, Superintendent of Education in the San Diego Board of Education.

We belonged continuously to the PTA groups in our community for some 16 years. I served as an officer (i. e. Pres. V. P., Parlimentarian, etc.) during many terms, and was awarded an Honorary Life Membership in the California P. T. A. But there were some battles here and there over some policies, I assure you. Our three elder children went through our public schools, where there are surely many fine teachers, but, alas, some weak specimens, too. Our youngest now goes to an independent Country Day School. It's expensive, but a fine educational experience.

But this last was just to assure you that this greeting comes not from a crank, but from someone with at least a modicum of experience and a profound concern for the evolution of our schools.

With best wishes to your good fortune and to your rise in your chosen profession with the coming of the New Year.

Yours faithfully,

Denis L. Fox
Professor of Marine Biochemistry

DLF:dk

29 February 1960

Voice of the People
San Diego Union-Tribune
940 Third Street
San Diego, California

Dear Sir:

I was profoundly schocked, as were others, to see on February 20, in the center of the Tribune's front page, the grinning face of a felon whom Governor Brown had decided to reprieve after other wise, God-fearing judges had pronounced the man unfit to live in human society because of his detestable, inhuman deeds.

Perhaps one object of the press was thus to stir up the spirit of the people against the shameful laxity of our penal system. It may be feared, however, that too many emotional, non-thinking readers might be swayed by an impression that our press had thus signified its approval and support of the Governor's act.

I should like to feel sure that one of journalism's aims is to avoid any ambiguity or avenues for misinterpretation insofar as possible.

D. L. Fox

Box 109, La Jolla

1 May 1961

Mr. James Worley
Croton Falls
New York, N. Y.

Dear Mr. Worley:

Your messages have just reached my desk, and I've lost no time in reading them. While I regret deeply the circumstances which have driven you to prepare the address, I agree wholeheartedly with what you say in it, and shall sustain the hope that the whole experience, in the long last, shall have been worthwhile.

In the meantime, I hope that you have been, and are now continuing in your chosen profession of teaching. How heartily my son-in-law, a teacher like yourself, will agree with your words when I share the article with him. I am lending it today to a professional colleague and member of the La Jolla Torch Club, who is to talk to us this week on education of the specially qualified students.

It may become necessary to demonstrate to our nation's public school administrators what can be done in our independent schools by competent professional teachers allowed to decide and to implement their own methods. The proof of the pudding.

Finally, may I be permitted to quote from a couple of men who had thoughts that I like.

> "True education makes for inequality; the inequality of individuality, the inequality of success, the glorious inequality of talent, of genius; for inequality, not mediocrity, individual superiority, not standardization, is the measure of the progress of the world."
>
> Felix E. Schnelling: "Pedagogically Speaking"

> "There is a tendency everywhere..... to equate what is new with what is good, and to confuse the means with the end, especially where the means are striking and dramatic. The present trend is to concentrate on the teaching and neglect the teacher, on the assumption that if only the right <u>methods</u> can be found, all will be well. This seems to me to put the cart squarely in front of the horse. Given good teachers and good students, it does not matter much what passes between them, the product will also be good. Teaching is a thing done by individuals to individuals, and the method must always be secondary. 'Sir,' said our old friend Dr. Johnson many years ago, 'it is no matter what you teach

them first, any more than what leg you shall put into your breeches first,' "

D. C. Sinclair, "Basic Science. Some observations in the United States," Lancet, II: 463-478 1953)

I think that a copy of your article would be appreciated by Mr. Donald L. Leavenworth, Headmaster, La Jolla Country Day School, 7758 Fay Avenue, La Jolla. He is a scholar, does teaching himself, and would view your ideas objectively.

With my thanks, my compliments on your courage, and my best wishes for a wholesome outcome of your efforts. "There is nothing more powerful than an idea whose time has come".

Cordially yours,

Denis L. Fox
Professor of Marine Biochemistry

DLF:dk

11 December 1961

Mr. Don B. Wentworth
P. O. Box 637
Saratoga, California

Dear Don:

How good it is to hear from you after all the intervening years. I had forgotten until Crowell reminded me in his reply that you were cousins, but now I remember quite distinctly that you used to visit them across the street from your home there on Seminary St. Indeed, I do well remember our days together as boys, when we were in the Boy Scouts; I remember our picking prunes on the ranch of my father's old friend Rege Pearse, but had forgotten that it was 1916, as you reminded me. I remember that there was a great contrast in our industriousness, for you were energetic and concentrated on the work, whereas I was inclined to be indolent, at least in that particular kind of work. I remember also our going on camping trips together, sleeping out for several nights in succession at different times. Those were great days.

I had remembered that you married one of the Wassum girls, and have a memory of Genevieve as a very pretty, dark-haired girl. I had long lost track of you, I'm afraid, and am hence therefore very glad to be brought up to date.

Arthur is a corrosion engineer living in Berkeley. They have eight grandchildren and one to come about Christmastime. The boy you knew as Pat has long called himself Jack, and lives in Pasadena, where he is engaged in practical horticulture and landscape gardening, and where he also serves as a minister. He is married and has one girl about 15.

For myself, I went to the University of California, graduating in 1925, then worked four years for the Standard Oil Co. at Richmond, then returned to Stanford for my Doctoral degree, which I obtained in 1931, since which time I have been attached to the faculty on this campus of the University of California. We spent the year 1938-39 at the University of Cambridge in England where I held a Rockefeller Fellowship, and I have been back to Europe on several occasions since for scientific meetings and for other reasons.

Of our children, the eldest, Ron, now nearly 28, is married and has two little girls. He graduated from the University of California in Chemistry in 1957, and is a research chemist with General Atomic. Kathleen is married to a young teacher in Riverside and is completing her course in nursing curriculum next summer, and Alan is going on 14, and lives at home with us, going to an independent school here. Our second boy, Steve, lost his life in 1954 at the age of 19, to a

reckless driver. He was a very promising young student at Stanford University and was working in the San Diego Zoo during the summers. All four of our children are quite musical, and all of them are interested in one kind of science or another.

I am remembering your lovely mother very well, especially since she was a very close friend of my mother, and they saw each other often. I remember also your grandfather, who lived at the house with you. I also remember your dog Cubby, who was a good friend of mine also.

Do I understand correctly that your brother Bill went into medicine?

It is interesting to know of your engagement in the life insurance business for the past three decades, and it is not surprising either that you have made such a success for I remember you always had a good head for business. Do you remember when you and I used to walk out into the country on those rainy spring days and collect mushrooms, weigh them, and bring them back and sell them and divide the spoils? It is all a little like reading chapters out of someone else's life, perhaps someone you knew pretty well, but a very, very long time ago.

Please excuse the scrappiness of this letter. I just dictated it ad lib, and thus the continuity must have suffered. But I do wish to extend on the part of my family, to you and your wife and family, best wishes for a very joyous Christmas, and a successful and happy New Year.

With best wishes and warm memories of other days,

Cordially, your old friend,

Denis L. Fox
Professor of Marine Biochemistry

DLF/dk

18 July 1963

The Superintendent of Schools
Napa, California

Dear Sir:

Recently my brother, Arthur R. Fox, a corrosion engineer now living in Walnut Creek, passed over to me the centennial issue of the Napa Register, whose pages contained many pictures and names known well to me about a half-century ago, for I spent the years from late 1912 to 1916 in the old Central Grammar School, and the spring of 1917 at the original Napa High School, after which we moved to Berkeley.

My father, the late John J. Fox, was Horticultural Commissioner of Napa County, and we moved to Berkeley in July of 1917 where he took up another horticultural position.

At the risk of perhaps tiring you with further details, I might set down a few names that I can remember over the years, in case the letter might be of interest to any others that you know.

First and foremost there comes to my mind's eye, even with memories of his voice, the arresting and noble figure of John L. Shearer, then principal of Central Grammar School. All respected and admired him, and I still feel thankful for his example of personal integrity. If I remember correctly, I had these teachers in old Central: Miss Ackerman and Miss Kraus in 5th grade, Miss Winsor in 6th, Miss Julia F. Begley, a bonny, red-haired lady in part of the 6th and 7th; Miss Loretta Christie in part of 7th and 8th, and Miss Cora Wright in the final half of 8th grade, from which I graduated in the upstairs room of old Central School bordering on School and 2nd Streets. I had a Mr. Searcy for woodshop (then called manual training), and later as home-room teacher at Napa High, where I studied art under Louise Tessin, English with Miss O. E. McCloskie (sp?), ancient history and Latin both under Miss Hill, and Algebra under the Principal, Mr. J. S. Denton.

We knew a grown Indian, John Smith, who attended classes in 4th grade under Miss Dollarhide, with little youngsters. A model pupil, quite unashamed to enter, marching in with the little kids to the beat of a drum by Glenn Chapman or Ray Tompkins.

I was in Troop 5 with a lot of fellows, including my chief friend Earle M. Swift, whose brother Ted was also a good companion and an accomplished artist. Another good friend was Harvey Weybrew, whose father worked with Winship Beard. Harvey used to take me on his Saturday morning deliveries in a horse-drawn

cart, for the Beehive Grocery.

Don Wentworth, grandson of Mr. Beard, was a good friend and a fellow Scout. We used to comb the spring fields for mushrooms to sell in the town.

We knew the Mantaphunis brothers, Agememnon and Aristotle. Also the Chan boys, Chan Chew Tong, and Chan Chew Moo, as well as their pretty sister Chan Suey Ping, a classmate of mine.

Rev. Irving E. Baxter was minister of the Episcopal Church where I attended, and Rev. Wiley was at the Presbyterian Church. Charlie Harron of the Register, and Harry Bush (sp?) were friends of mine, and Lyman (Bill) King as well. He was a classmate, and I believe, later worked for one of the Napa papers.

George and Bill Vienop, school boys of those days, lived out beyond the town. George and "Indian" Smith were close friends.

I well remember stopping in Kelly's soda fountain and confectionary shop, also at Haas's stationery and general store, and visiting Bing Kee's Chinese store out on Main Street, near Marcus Klein's pawnshop. I recall also some of the less felicitous parts of the town, referred to by the Register's centennial edition as Clinton Street.

I could recall many other names of people, some of whose families still live there, but will not try your endurance further by random reminiscences.

It has been pleasant to read the Register's centennial, and I hope that you may be willing to forward to the editors my felicitations on an attractive journalistic job. The late Judge Mervin Lernhart, famed for his decision about the bovine miscegenation, was a schoolmate of mine, and his elder brother Al knew my brother Arthur. Other names that come to mind are those of Judge Gesford, Chief of Police Boyd (with whom I once had an interview), Fire Chief Otterson (sp?) and Police Officer Secord.

The teacher I liked best was Julia Begley, for her humor and humane interests, while Miss Kraus was a close second (although she once spanked my upended surface with a grammar text as I lay across her knees). But John L. Shearer topped all of them.

Your educational facilities in Napa are very impressive. One day, should I get to Napa, perhaps I can have a better look around, and meet some people, although I hardly can expect to be remembered.

Yours sincerely,

Denis L. Fox
Professor of Marine Biochemistry

DLF:dk

Editor
Voice of the People
San Diego Union-Tribune
San Diego, California

5 December 1963

At commencement and kindred ceremonies in our State Universities, colleges and public schools, an invocational prayer is pronounced at the opening, and a benediction at the closing moments of the exercises. Similar practices prevail at certain government ceremonies. The officials and members of the audience merely stand bareheaded while prayer is offered. The individual attitudes and private interpretations or other reflections of those present are their own, and all of this is entirely fitting and consistent with our adopted principles of freedom.

Any attempt to require vocal participation in prayer by pupils in a public school is unthinkable, from both practical and moral standpoints. But an alternative condition is at least conceivable, and likewise should be defended. Should it become established, say by a voluntary poll of pupils that the majority would welcome oral participationg by pupils in the joint pronouncement of a non-sectarian prayer at an occasional and appropriate public school assembly, this option should not be forbidden to those electing it as a feature of their personal freedom.

Non-participating students merely would be expected to stand quietly, thus expressing their respect and tolerance for the majority.

Alien visitors here so express themselves among us when we rise to pay sung or spoken tribute to our nation or to our faith, just as, under similar circumstances, we reciprocate when visiting in their countries.

As simple examples, men visiting from other lands stand and uncover their heads when we do so. And, in certain Eastern countries, we pay like respect by removing our shoes, as they do, when entering one of their shrines.

There are not, nor should there be, any commitments involved for minorities, or any infringement on personal freedom of the majority, in these simple observances, wherever they may be elected as being appropriate.

Denis L. Fox
La Jolla, Calif.

5 December 1963

Voice of the People
San Diego Union-Tribune
940 Third Street
San Diego, California

Attn: Editor

Is some lesser degree of dedication to, and expression of, loyalty to be expected of our citizens, who hold the right to vote, than is required of them when, after election to high public office, they pronounce and adhere to their vows?

True, man-made laws and their manner of enforcement must be studied critically and continuously; they occasionally must be changed in the course of human progress. But meanwhile, steadfast integrity and loyalty toward one's compatriots must be assured if our civilization is to endure. While our form of democratic government is not perfect in actual practice, Americans are alike in their determination to improve it continuously toward that end, to support the option of the majority in this sustained effort, and to remain dedicated to these tasks. Moreover, national patriotism should not be devisive from humanitarianism, but, rather, an integrated part of it.

Virtues being not genetically inherited characteristics, but taught to and learned by us all, beginning in childhood, how else is the quality of human loyalty to be instilled in our youth if not by practice in our homes and schools? The apparent necessity to re-emphasize for a few people the importance of the national pledge seems not only surprising but regrettable. No sensible person believes that the pledge is addressed to a measure of cloth supported from a staff, but rather that this, our nation's adopted flag, serves as a perpetual reminder of that nation's ideals, symbolically represented in color and pattern. Does not the word "flag" in the pledge of allegiance constitute a kind of abbreviated term, signifying the people, their nation and their laws?

The recitation of words, or the tacit execution of certain gestures, such as the hand-salute or the bowed head, signify respect and dedication, and are directed not to any object such as a flag, icon, shrine or altar, but to the basic principles and ideals symbolized.

The national pledge should be continued in our schools, on all appropriate occasions. Needless to add, alien students need only to stand quietly with the rest, and no monitoring should be practiced save for the preservation of order and respect.

The meaning of all this is borne forcibly in upon many Americans visiting in foreign countries. When such a country's national anthem is played, or its

national symbol is paid respect, a visitor feels privileged in merely standing, out of respect to his host-country's citizens. But when people of that same country, or any other host-country honor us by including in a program the playing of our own national anthem, or by the appropriate display of our national emblem, e. g. in a parade, it is then that Americans, even the most matter-of-fact, ordinarily unsentimental, will experience a profound and stirring sense of belonging and of warm gratification.

Moreover, they will, at such moments, adopt through habit, the appropriate attitudes learned in their early years.

Denis L. Fox
La Jolla, Calif.

7 April 1965

Dr. John R. Upton
384 Post Street
San Francisco 8, Calif.

My dear old Jack:

What a nice reply to my short, informal postcard. And I appreciated especially your readiness to share with an old and understanding friend a copy of your vita, bringing me up to date on countless things.

Again, my heartiest felicitations on what you have done for people in both of our native and adopted countries, and for people in general, naturally, through your medical investigations and allied services. The honors coming to you in recognition of all this were of the most natural sequence, and richly merited.

Although if I ever knew it, I had forgotten that you were my senior by nearly three years, I shall continue to count you as one of my former students in a way. For I recall being the senior teaching assistant (with John Thomas and Melville Sahyun) for the medical students taking biochemistry at Stanford in the quarter following the summer term, where you and I worked near each other as fellow students.

In my mind's eye, I still see you as a young man with dark, wavy hair, and much humor and enthusiasm, not majoring in mathematics.

A few other names from those days 35 years agone return to me. Al Carey (a real pukka sahib), Ferrebee, a smart chap; Evelyn Chapman (poor girl), Harry Tamada (whom I jocularly called the urologist from a laboratory mishap he had), Lung Fung; a man called Flyer (whom I'd put in parentheses), C. C. Cutting, Smith (hardly an intellectual tower), Bob Thomas (of somewhat promotional ways), Iriki (poor in English, but smart), Sid Madden (a current colleague at UCLA, whom I never see), and a couple of fellows with Spanish names and appearances. I suppose that more would come back after some days of my trying to remember further.

My wife, you may remember, was Miriam Perdew, a student nurse at the old Stanford Hospital, whom I met in the early thirties there. She recalls you as one of the medical students in 1930-32. Two of our children are grown and married. Ron (UCB 1952)is a research chemist at General Atomic here. Kathy (UCR then to nursing school) is a wife, mother and R. N. who nurses at Palomar Hospital on week-ends. Steve, who went to Stanford for his Freshman year, lost his life in an accident the following summer (1954). Alan is nearly 17, in high school, moving into astronomy.

I should enjoy seeing you again, old man. Also, meeting your family. Say you will look us up when down here, and I promise to reciprocate the next time I am in San Francisco, other than merely at the air port between Los Angeles and Berkeley, where I go occasionally on University business.

Cordially, as ever,

Denis L. Fox
Professor of Marine Biochemistry

DLF:dk

December 27, 1967

Dr. David B. Tyler, Head
Physiological Processes Section
National Science Foundation
Washington, D.C. 20550

My dear David:

Your call today (Dec. 26) at about breakfast time (about 11 o'clock coffee-break, perhaps, for you there in Washington) was really very deeply appreciated.

So much so, in fact, that my further thinking was that your call should not be allowed to rest merely on the oral responses that I gave at the time.

Your having asked me to explore with you the idea of my willingness to serve for a year as a program director for the Foundation in Washington deserves a longer response than I felt able to give you by transcontinental telephone conversation.

As I did say, however, I regard the work of the Foundation very highly, and the responsibilities for helping to make decisions as of great national importance. Moreover, as I also said, I should be glad to continue making occasional assessments of such research proposals as may fit sufficiently well into my general professional area as to render them understandable to me. This whether it may be a matter of reading a proposal or, on occasion, visiting a site where the research is planned.

As to any participation by myself in the more extended capacity that we discussed, however, there are certain contraindications which I will try to list briefly.

My students and I are engaged in a multi-branched research program, which is, indeed, currently supported by the National Science Foundation, and for the continued support of which my application is already on file. I have to see several of these young men through their doctoral research program within the next three or four years.

Although I do not welcome the new vista, I have to accept the fact that I am no longer penetrating more deeply into the forest of academe; on the contrary I am passing outward through it, so that the paces of but another couple of years will have carried me all the journey through it as I contemplate retirement. And whether or not I might be invited to serve an extra year, it still hardly would be feasible for one to take a sabbatical, or any other kind of leave, from the University during one's final year.

And finally, there is yet another spectre in the background. My book is out of print and I've been asked by both the Cambridge University Press and the University

of California Press to entertain the idea of doing another one on the same subject. I have even gone so far as to invite a junior colleague, one of my recent doctorals, to join me, should I do the new book. In any event, book-writing comes hard to me, and is a time-demanding occupation, so that, if it is to be done within the next very few years, a beginning ought to be made.

These factors, plus the correct way in which you characterized me, i.e., as a "Lab Rat", more identified with research and student guidance than with administration and budgets, combine to bring me to the decision that I had to make. I feel less of a sting in my conscience, however, in the full knowledge that there are numbers of younger, able men for that particular kind of effort.

I remain most appreciative of the Foundation's aims and work, and deeply gratified over the substantial aid that has come to our laboratories over the past several years. I am sure that you know that, if there should be other ways in which I might be of help in the great work of the Foundation, I should be glad to do whatever I could.

With best wishes for the New Year I am as ever

Yours faithfully,

Denis L. Fox
Professor of Marine Biochemistry

bc: John S. Galbraith
Wm. Nierenberg via Andy Benson

Brief Journal of a Trip into British Columbia, Canada
9/25/68 - 10/2/68

To Bella Coola, Namu, Vancouver etc. 9/25 - 9/26/68.

We took off in beautiful weather for the North country, leaving San Diego by a 6:20 a. m. flight to Los Angeles, thence to Vancouver, where fog delayed our landing — so into Seattle for about 1 1/2 hours. Finally back to Vancouver and a smooth landing, in clearer weather. Transferred from a luxury-plane to a little island-hopper, crowded in like peas in a tight pod, and out of Vancouver over fabulous country-high, snow-capped mountains, deep crevasses, glaciers, high, blue tarns and blue-green lakes as well, with coniferous forests on high ground and autumn-colored yellows, oranges and reds over deciduous stands in valleys and along streams and rivers.

I met a grad student of U. B. C. on the little plane. He was en route to Bella Coola to join the project. With his help, and Andy Benson's help, since each had a window seat, I got a few snapshots of the view from the air.

At Bella Coola, a rather frontier-like village of about 600 people, we came to earth, went over to the village in an ancient Chev, and thence to a wee little hydroplane, which jammed us 3 plus an ubiquitous, voluble Frenchman, into the inside, and took us in about a half hour down to Namu, where Alpha Helix and her friendly ship's company awaited us. We stayed anchored overnight, but got under-way early (ca. 7:00 a. m.) the next day, up river to Bella Coola. (9/26).

The scientific work on the biochemistry and metabolism of spawning salmon is most fascinating. George Crozier I am very proud of. He did his doctoral under me in late 1966, went to University of Southern Mississippi as Assistant Professor, and is going now to the University of Alabama as an Associate Professor, directing the Marine Station.

He finds the salmon genera losing their muscle-carotenoids as they migrate upstream to spawn, during which trip they eat nothing. They seem to burn much of their stored fat, along with much carotenoid, during this strenuous passage. There must be a lipoxidase enzyme at work during this phase of the fishes' metabolic life.

The weather has become overcast, quite cool, and showery. We shall not visit the streams where the salmon are running so thickly, until the weather improves, possibly tomorrow. Meanwhile, we've had some vigorous downpours, and, about the ship, some moaning wind at night.

Andy Benson and I by jeep over to the village this morning, bought a few items for refreshments, also picture-post cards and air-mail stamps. Sent one to

Alan and one to Mim. Both pretty aerial shots over Bella Coola. Southerly winds gently wafting dark clouds northward over us, but we hope for a fine day tomorrow as it's the last chance to visit the spawning salmon.

9/27. The day dawned with signs of opening sky to the northward, while low clouds slowly drifting off. A large lumber barge, towed by a tug, lay or our port.

Off to the lake and its rapidly flowing tributaries at noon for about half an hour's flight over mountain passes and low streams. We saw, far aloft, over the hugh peaks, a couple of pairs of golden eagles and a lone bald eagle even higher in the sky.

And in the lake, countless adult salmon (and many dead ones, spawned out), the living awaiting their turns to dash upstream for the all-important and final event of their lives.

At Wakwash. Into the streams I waded (in George Crozier's high boots) to stand in the icy waters among the busy salmon. The females prepare the redd near the sides of the stream, while the males stay in mid-stream much of the time, dashing over to fertilize the bright red 1/3 pea-sized eggs as they are deposited.

The odor along the banks was foul from the many rotting corpses of spawned-out fish. But what a great experience. I took some pictures, and hope for good results.

A tightly wedged group of passengers in a small Beaver plane we were. But we saw country of matchless beauty, with glaciers, coniferous forests and thin, silvery water falls.

I go now with Pete Scholander to see his base camp and lab at Tweedsmuir, where I shall stay overnight at the lodge there. It's about 40 miles distant, ca. 1 1/2 hours over mountain roads to a place called Stuie.

We arrived close to 6:00 p. m. and saw Ted Hammel and Walter Garey busy measuring physiological functions of spawning and post-spawning humpback salmon, at Stuie, B. C., where we enjoyed the supper, fireside and overnight hospitality of Tweedsmuir Lodge, owned by Mr. &Mrs. Gordon Corbould. Fresh brown eggs for breakfast.

We are in a river-valley where ash, dogwood and conifers abound. We saw low-flying golden eagles and sitting bald eagles on the river's borders on the way here. They catch the spawning salmon, as do the bears. The snowy, sharp mountain tops, with their skirts of haze far below, were beautiful this morning. I must try to get a picture when it is a bit lighter than now, at 9:10 a. m. I go back to the Alpha Helix at Bella Coola this morning, and we are scheduled to sail tomorrow, after all

gear and people are aboard. Dr. Eb Trams fetched me and we had a beautiful ride back to Bella Coola, on a lovely morning, with hardly any clouds and a nearly clear road. I bought some more film in the village, and we reached the Alpha Helix ca. 12:30 p. m. Crew and staff very busy today, packing equipment aboard for sailing, tonight if possible, to Namu.

This afternoon we had quite a chat, as a group of 4 or 5 people, re the death of sockeye salmon, following spawning by a few days to a week or so. I suggested that, with the vast overturn of protein in gametogenesis, and consumption of it during the fasting run upstream from the sea to spawn, the sockeye (and indeed other salmon) may perhaps generate certain amines, e. g. tryptamine, tyramine, histamine, etc., from decarboxylation of the respective amino acids, and that, should such toxic end-products happen to accumulate faster than they could be excreted or detoxicated by oxidation, they might constitute a significant factor in hastening death, i. e. by "autogenous intoxicants". Such an idea is given some support by observation of the degeneration of the liver and kidneys in spawned, moribund salmon (Trams), and by the strong fecal odor of its rotting flesh, i. e. not a truly fishy odor. Trams says livers of post-spawned salmon are poor.

Indeed, that quiet valley, with scores of corpses of salmon lying on or near the river's shores, had smelled like a pestilence, reminiscent of Lake Avernus at the mouth of Hades, as Dante found it.

Sunday, 9/29/68. We got slowly underway at ca. 7:30 last evening, and this morn awoke coming in to Namu where we are docked as of about 7:30 a. m. Cool, overcast and a steady drizzle. Little to be seen ashore at the village of Namu, save for the large cannery which employs large numbers of workers during the season, but the town population shrinks to about 100 people in town in off-season. I'm told that there aren't even church services save in summer time. This is hard to believe, since we saw a school and playground of sorts. I mailed a card to our office MBRD staff, but doubt it will reach them ere I return in person later this week. A dead "town" this is indeed, and no mistake. We get underway tonight en route to Vancouver, hoping to reach there by 8:00 Tuesday morning. Meanwhile, I could do with a little less idleness, although Alpha Helix is a beautiful and luxurious ship, and the crowd most convivial.

It is surprising to encounter numbers of black crows, which come right down to the docks, along with the ubiquitous gulls, which they sometimes rob of food, I'm told.

Now, in mid-afternoon, the drizzle has ceased, and there are signs of clearer skies southward. We are to be underway for Vancouver this eve at 7:00.

Later: Photographed a beautiful red sunset, behind dark mountains, and a pink-dappled ocean as we steamed slowly southward about 7:30 p. m. Captain Haines wants to negotiate the various narrow passages during daylight, and with the tide flowing out along with the ship. Hence our deliberate rate of progress this evening. There is some motion, but not distressing. There should be a lot more tomorrow, when we traverse a length of open coast.

9/30/68. About 10:00 p. m. last night, the captain told us over the intercom that we'd be entering open waters in half an hour or so, and that we were likely to do a bit of rolling. So I took that as a signal to retire, so as to confront the motion in a horizontal posture rather than stumbling about on foot. And none too soon did I stretch out either, for we hit some pretty rough sea. A good lurch spilled cameras, shavers, books, papers, medicines and sundry other things with a clattering noise onto our state-room floor. I'd a job retrieving the stuff, and placing it more safely, as I could not maintain my balance very well. But I finally stretched out as Andy came in and, with similar amusing difficulties, picked up the rest. Then I had to repair to the men's room quickly, where I forfeited my dinner and snack to the ship's motion. Slept better after this, and when motion became calmer.

Today is overcast, but no rain yet at 9:45 a. m. and we are proceeding steadily through the straits and to Vancouver. I hope for more photos later in the day.

As we proceed steadily southward and as the day wears on toward noon, the weather is becoming brighter, but the terrain offers little of interest for recording purposes, save for conifer-covered heights, with wisps of fog or mist atop of them, and a grey expanse of water between.

Message from Howard Davis confirms return flight for Andy and myself, Western No. 700, leaving Vancouver at 7:40 a. m., Wednesday, October 2, arriving San Diego 11:52 a. m. same day.

We spend Tuesday, October 1 in Vancouver, as Andy gives a seminar to Botany Department. I want to look up a few friends. We expect to be put up at Faculty Club for Tuesday night.

Tuesday, a. m. Oct. 1. We had to proceed rather slowly toward Vancouver, so rolled from side to side most of the night. I called it "Operation Spread-Eagle". The early morning lights of Vancouver were beautiful, and at about 7:00 a. m. we docked.

We were met at the boat by Dr. Thana Bilsaputra (Botany Department of University of British Columbia), picked up a rental car and proceeded to the beautiful University. Dined in the beautifully appointed Faculty Club, after watching the distant Alpha Helix depart from the docks. (Mixed feelings, but I could not envy them the voyage to San Diego through the rolling waters of the open coast.) Following luncheon the others cruised about town while I visited with Professor William S. Hoar, Chairman of the Zoology Department, and with Dr. Paul Dehnel, an old friend (dating back to his junior high school days, who claims that I deserve credit for steering him into Zoology). We had a relaxed, enjoyable visit. Later he dropped me at the restaurant on the ocean-front, where I was meeting Andy Benson, Stu Patton, Eb Trams and Thana B. for a marine-food dinner. Afterward to the Skyline Motel, close to Vancouver Airport, overnight.

Vancouver is a beautiful, large, spreading city of some 1.5 million (including the neighboring areas). Very clean and heavily wooded, with park areas and forests. Distant view of the mountains across the sound.

I've had a tremendously worthwhile week, and owe this to Andy's persuasion, the PRL support (air fare and food and lodging on Alpha Helix) and Pete Scholander, who insisted on my accompanying him up to the shore camp at Stuie.

We flew home, arriving at about 2:00 p. m. instead of 12:00 noon, due to logistic vicissitudes, such as delays for fog-dispersal, waiting for transferance to other flights, etc. But what an exciting week. And what a contrasting environment is that of the salmon, when compared with the steaming, sultry swamps and bayous of the Mississippi Delta, teeming with prawns and abode also of oysters, menhaden and mullet, as I had seen in latter August, about a month earlier.

October 27, 1968

Typed copy of some thoughts I wrote in my room at the Roosevelt Hotel New Orleans, on October 14, 1968.

For my first four years following my bachelor's degree in chemistry at the University of California in Berkeley, I was a chemist for Standard Oil Company of California. I knew, after two years there, that I wanted to return to academic work as my life's vocation, and in due course my plans were realized. After some 2 1/2 years at Stanford University I received my doctorate and have since served in the academic profession, over a span of 37 (plus) years.

For some 27 years I have served, off and on, as a consulting marine biologist for various industrial companies or city- or state-departments in California. Now, over the past year and a half, I have been handsomely paid and treated, as a consulting marine biologist for Aquaculture Corporation.

And but for certain basic reasons, I should feel like a dual person, a Jekyll-and-Hyde personality, split into two men. I do not enjoy much the recreational choices of some people. Too much food, the frequent serving of liquers, and the words that greatly amuse others in this fragment of society do not capture me. Somehow, I've a vague feeling of disquietude, a sense of departure from my true identity at times.

Yet, this is not really so; for, in the first place, these are superficial with all of us, and we can retire into our own reflections at will. Moreover, I knew why I am consulting with this rich company (which is about to be wed to an even bigger organization). It is not for either the kudos, the enjoyment of superficial things, or for the money involved.

It is because, if we contribute to the understanding of how to culture safely more oysters, shrimp, mussels, etc., we shall employ thousands of persons and millions of dollars to effect the better nutrition of millions of children who will follow today's adults in poorly-fed parts of the world.

As I pondered these last thoughts, I turned to a little paper-backed book "Words to Change Lives", that Miriam had bought, and that I, at the last minute, put in my valise to read at odd moments on this consulting trip. And the fresh chapter that met my eye reminded me of Alan. It was "A Christian and his Job", by Robert A. Edgar".

November 19, 1968

Mr. Robert Vosper
University Research Library
University of California
College Library Building
405 Hilgard
Los Angeles, California 90024

Dear Mr. Vosper:

Your request for recollections and letters or documents relating to the Oath Controversy, back in the early fifties, interest me very much. You were right in assuming that I was one of those here, and involved to some degree in the matter.

I remember writing several letters to President Sproul about the oath, and receiving answers. And I feel sure that my original letters must rest in his files, as the carbons must reside in mine down here.

I was a slightly reticent and therefore delayed, but relatively early signer of the oath, to which I inserted a word or two, and concerning which I wrote a short letter accompanying the signed contract.

Being a signer I then felt far better prepared to criticize openly any apparent efforts on the part of the administration to press any of my colleagues for their unwilling signatures. My own signing had been willing, inasmuch as there was nought in the printed statement which was untrue to me. But I resented any attempts to compel a conscientious objector to sign the oath.

I should be glad to meet, talk with and have copies of certain letters made available to Mr. Mink should he write or phone me in advance. I am glad that this oath matter is going into recorded history. To our present-day rather blurry rebels, I would say "There we had a real cause".

Cordially,

Denis L. Fox, Chairman
Marine Biology Research Division
and Professor of Marine Biochemistry

May 5, 1970

Voice of the People
San Diego Evening Tribune
940 Third Avenue
San Diego, California 92100

Concerning Jellyfish Stings

The common purple-striped jellyfish is beautiful but venomous. Not long ago I was interviewed on TV concerning the appropriate treatment of the skin following contact with jellyfish and the resulting stinging and itching sensation. I said, in that interview, that the use of ammonia was ineffective, but that weak acid, such as vinegar, should serve with success. This was based upon an experience some years ago, wherein a student of mine came into the lab from a collecting trip, his body marked extensively with long red weals from the stings of our large purple-striped species of jellyfish, Pelagia colorata (formerly P. noctiluca). Ammonia only irritated the lesions further, while the alternative application of dilute hydrochloric acid was reported to afford rather prompt relief.

These recent days provided an opportunity to repeat the test directly, since large numbers of Pelagia had been carried to shore by the prevailing winds and tides. One of my students brought a couple of surviving specimens in a bucket into our wet-laboratory aquarium for testing. We drew the long, pendulous lips and streaming tentacles of the animal across the inner surfaces of our bare left forearms; this readily evoked the stinging response. But washing the lesions then with dilute ammonia, dilute acetic or hydrochloric acid did not discharge the sensation, It was, however, quenched rather promptly on rubbing the arm under a stream of water as hot as is readily tolerated, or at about 50 to 55° C (122 to 130°F).

After the red lesions had disappeared, and all unpleasant sensation had vanished, I found another co-experimenter with whom I might repeat the experiment. The basic idea seemed generally unpopular, but one of our marine engineers volunteered. And again, in this second try, I re-experienced the sting and itching of the flesh of my forearm, while my companion reported the same results. And again, rubbing the affected parts in a stream of hot water discharged the discomfort rather promptly.

Another of my students reports similar relief, through immersion of his hand in hot water following multiple stings from the spine-venom of a so-called sculpin or scorpion-fish. Hot water also has been recommended at the Scripps Institution for relieving the pain of a sting-ray wound.

Hot water, thus, appears to be more readily effective than other ordinary

means for relieving these types of lesions. The account is submitted for the possible information and relief of swimmers and of wading children, notably in spring and summer jelly-fish seasons at our beaches.

Denis L. Fox
Professor of Marine Biochemistry, Emeritus
and Research Biochemist

I never have been one given to habits of excessive introspection, nor, I think, to idle vagaries, but have lived in a reasonably motivated way, or have tried to. I've rather short patience, I'm afraid, with certain people of today who talk dreamily about "wondering who they are", "finding their thing" that will "turn them on", while remaining relatively idle among groups made up of similar persons of rather raucous mien.

I can appreciate even the so-called "Jesus people" much more, inasmuch as they've an ideal toward the realization of which they are striving; rather than remaining completely turned in, so to say, they strive to reach out, helping others, at least during a part of their waking hours. And they seem not to indulge in drugs, alcohol or other excesses. But their way of life assuredly involves an element of economic insecurity, auguring the liklihood of their becoming dependents upon their community. It is to be hoped that such people may come to appreciate increasingly the imperativeness of directing their orisons through good, solid labors as well as through their lips..... But of this enough for now. I am not electing to sit in judgment or to pose as a soothsayer.

What I do have deeply in mind to express concerns something else, quite different, but in its own way insistent within my current, passing life. From time to time within the past few years, and very notably within the currently passing year, I have been experiencing something which I think may likely apply to many other persons at about my time of life. It relates to the inexorable day of one's Great Promotion, as I like to call death, and not in jest. Very well, the life of each one must one day end. Some people thrust this reflection into the dimmer recesses of the mind insofar as possible, and during times of reasonably good health. And so have I, I suppose, up to more-or-less recently. My health in general is very good for my age, for all that I no longer inhabit the vital machine of a young man; some parts are bit stiff and slow, but the heart, breathing equipment and circulation were reported to be in good order at last inspection, some seven months ago. And my mental life, my pursuit of research, life-long love of natural history, general abilities at writing and lecturing all seem to remain in acceptable condition, for all of which I feel most grateful.

Yet withal I've had this rather frequent visitation (probably the best word for it) of an incisive thought, almost as though hearing quiet words from a presence standing at my shoulder, advising that I had best prepare generally for the Promotion, since the calendar of my own life is of a fewer number of days than I might suspect...

Allright. So I have the "message" if that it may be, rather than mere reflection. But one feels a bit puzzled at its recurrence, when unaccompanied by any fear of dying, nor any worry. It is as though I were being instructed to finish up some necessary and long-deferred chores lest other persons ultimately be charged with them. And I have, in fact, been doing some of them, including the ennui of going through my vast mass of old letters, and even the recording of these diarial pages from time to time.

Miriam, on surviving me, would have a home, savings, insurance due her, and a sufficient monthly income from my University annuity for the duration of her life. Our wills are filed in Karl ZoBell's office, and copies in our own safe. The combination for opening the safe, currently situated out in my office, is known to family members. Complications for resolving the intent of the wills are minimized. So far, so good.

Admittedly, each of us, as a human, is indebted, in one way or another; for we have left things undone. In my own instance there doubtless are all too many uncompleted, unresolved duties for me to implement their completion, even could I document them, in whatever time may remain to me at age 70. And it is difficult for me to believe that I am that age.

For one thing, however, I have gone through my many years' accumulation of old correspondence out at the office, discarding many pounds and basketfuls of old letters received and carbon copies of old letters sent. Moreover, it seemed necessary to re-read a good many of these before deciding what to do about them. Most decisions took but fleeting time.

In any event, someone else thus shall be spared that particular nuisance on one day, when my Promotion shall have left a fine office, with its inspiring marine view, available for another's occupancy. It has been mine for more than 40 years to date... Now I'm ready to continue going through further collections of filed papers, surely including much that will be found to have degenerated into mere junk... For that is exactly what happens.

Then there remains this current autobiographical memoir, "Again the Scene", that I've been doing from time to time over the last year or two, largely at the suggestions of family members and close friends whose affection I enjoy with lasting gratitude, and who appreciate the importance of writing history in good time.

Apologizing for what may appear like further introspection, I admit that I feel, somehow, as though I've been, in a sense, writing off the numbered days of my remaining biographic calendar, in readiness for whatever lasting value it

may have for those who read when the pen of my life shall have been stilled at last.

All of that looks perhaps too sentimental. For who should write at all, if not interestingly, constructively and for others' profit? And who, thus writing, is not, in fact, penning a part of his life's diary? Verba scripta manent.

Not by any means that I might be hastening the day of departure; it merely seems that one rather may be acting in response to an inner, informative clock, which never may be turned back nor re-set. There does seem to be an element of imperativeness in the overall task. Why? One engaged in writing such a document comes soon to realize that this is one that he never can finish. He may only abandon it, as one does, for that matter, any book or any research activity. Best therefore make it as good a job as possible, so far as it is to go.

One remembers odd chapters of the past, even including occasional dreams. Reciting one's dreams is nearly sure to bore most captive listeners. But at this risk, I shall chronicle one that I had many years ago, wherein concern for loved ones came prominently to the fore. It seemed that, for some obscure reason, I had been condemned to die, in an environment very like a Roman court, perhaps by the guillotine (an anachronism, but it was a dream). My prevailing reaction at the time, when my sentence had been passed, was not one of fear, but of intense desire to first make contact with those whom I loved, for a last visit, and to put my final affairs hurriedly into some kind of order. So I solemnly petitioned the court to allow me honorable leave from my cell before the date of execution, that I might fulfill these urgent wishes, promising to return by the appointed time, or even perhaps suggesting that my leave should be monitored by a guard. For some reason, my leave was granted. I recall an armed and armored group of solemn men, standing at attention and chanting, low and in clear unison the words once spoken by gladiators in the arenae of Rome: "Nos Morituri Te Salutamus". This dream, of course, had no rational ending.

An incident, which afforded me a deep sense of shock after it had happened, was coming within a fractional second of being struck (and nearly certainly killed immediately) by a speeding car which rushed across a pedestrian crossing one evening in Berkeley. A couple of fellow-professors, walking with me, warned me just in time, to stop very quickly as the out-of-state car sped past. I had been in a dark suit of clothes, unseen, in all likelihood, by the driver until she nearly struck me. My outrage at this carelessness was later displaced by a feeling of potential grief that night, as I slept poorly in my room at the Faculty Club, reflecting on the consequences to my family, had my life been lost that moment on Oxford Street, just as Steve's was forfeit many years before to a reckless driver.

I felt not terror of my own life's nearly having been lost, but shared grief and worry over the effect on those between whom and myself there were these bonds of mutual love and dependency.

Perhaps this document may be without a sharply defined ending, for whereas I still may borrow time beyond these threescore-and-ten years, and may remain able to write effectively, I suppose that I should add to the screed from time to time. As my mother's sister Ethel quoted to me in her last letter, in 1945, just three years after Mother's death, and knowing that her own demise was not far off, "Fare thee well, and if forever, still forever fare thee well."

Further to the matter of friends sharing one another's lives, influencing one another, hopefully ever for the better: all know that men are not of equal abilities, talents or aptitudes, any more than they may be temperamentally alike, nor than they may endorse identical views in areas of religion, philosophy, politics, or even within areas of their common specialties. Still, infinitely better to have a friend between whom and oneself there may be pronounced differences in viewpoint, than to find oneself associated with one who refrains from forming or uttering an opinion on any important issue. For in any respect wherein opinions on important, complex issues may at variance between friends, there is no such thing as complete rectitude on one side, complete error on the other. Each person, being partly right and partly wrong, stands to profit, both by teaching something and through learning something through the relationships. Better live under a bad government than under anarchy. And far better and more profitable to engage in vigorous argument than to suffer boredom, nearly equatable with solitude.