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Scripps Stories:

DAYS TO REMEMBER

In celebration of 90 years

Edited by

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The cover photo is Scripps circa 1940.

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Stories were solicited from Scripps alumni and past and present Scripps employees to honor the 90th anniversary of Scripps.

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INTRODUCTION

It is not easy to define Scripps Institution of Oceanography, but it has seemed through the years that its staff and students have always been like a family. To acknowledge the institution's 90th year we asked for reminiscences and, to our gratification, a great many were sent to us. They recall people and moments as far back as the 1930s and as recent as the 1980s. There is strong support given by the Scripps community to individuals during times of adversity. When good news arrives, joy spreads, and a celebration is in order. We see from these stories that this is a long held tradition. This community feeling is what makes Scripps special. Not only is it a great center of research and learning, Scripps Institution is a family. Some start their careers here and some end them here, but it is the love and caring that make Scripps unique.

As editors we have chosen to arrange this collection as close to chronology as is convenient. We have done minor editing and made selective omissions. These stories will surely remind others of untold tales — so perhaps this is volume one of a series.

These stories are presented to the future generations of the family of Scripps Institution of Oceanography in the hope that the tradition will continue. We hope you will enjoy these tales as much as we have.

Kittie Kuhns

Betty Shor

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Lloyd J. Anderson

Some Lessons Learned

I came to Scripps in August 1939. I had just been graduated from UCLA and Roger Revelle had hired me to manage his Sediments Lab at Scripps, which I did for the next three years until I received an M.A. in June 1942. They were wonderful years during which I learned about scientific research from Roger and about social graces from his wife Ellen.

When I first checked in at Scripps I met Tillie Genter, who was Dr. Sverdrup's secretary. She assigned me a room in the Bachelors' Quarters, which was a large house located on the hillside north of the pier and about 100 feet above the beach. The first few nights the sound of the surf kept me awake, but I soon got used to it and found it very soothing. My salary was a princely $100/month — $25 more than graduate students got, because I was expected to work full time, rather than doing academic and thesis work part time.

One of the duties for all of us able-bodied males at Scripps was to go along on cruises and help collect samples and data at sea. My only cruise was on *E. W. Scripps*, a 100-foot sailing schooner converted to oceanographic work by the addition of deck winches, lab work spaces below decks, and a large deck house.

We left San Diego harbor at dusk and headed west. After an hour or so it was my turn to steer — my first experience at such a task. We were headed into a swell, which caused the boat to pitch significantly. After about fifteen minutes at the wheel, I felt a weird sensation of nausea. I remember yelling at someone to take the wheel and I headed for the rail. That's when I learned the paramount rule of sailors — never heave upwind!

I spent that night and the next day in my bunk, except for trips to the head for more heaving. Finally the captain decided to spend the next night anchored at China Point, at the south end of San Clemente Island, because several others in the crew were also seasick. In those days we didn't have Dramamine or other medications to alleviate motion sickness. By the next morning we had all recovered remarkably and carried on for the next several days, helping with Nansen casts, doing Winkler oxygen titrations below decks, as well as steering and doing various deck jobs. The captain however was not very impressed with my knowledge of seamanship! We then put into Long Beach for supplies and I was given a twenty-four-hour shore leave.

E.W. Scripps left port the next afternoon, rounded Point Fermin and headed northwest across Santa Monica Bay. I again took my turn at the wheel at about dusk, confident that I had overcome my sea sickness. However, after a few minutes I learned otherwise — only this time I remembered to use the downwind rail. Believe me, sea sickness is the worst experience you can have — you wish the boat would just sink. Anything to stop the incessant rocking and pitching.

A Surfing Lesson

A few months after I came to work at Scripps in August 1939, I had a visit from one of my UCLA dormitory roommates. It was on a Saturday, and after showing him around the campus we went out on the pier. At the far end of the pier we found a skiff suspended by two blocks-and-tackle. We thought it would be exciting to ride it in through the surf — which it was. However, when we tried to go back out through the surf we found that we did not have enough boat-handling experience to do so. We were therefore forced to resort to the ignominy of tying the skiff to one of the above-water pier pilings and confessing our transgression to Carl Johnson, the superintendent of grounds and buildings, who later returned the skiff to its proper location at the end of the pier.

On the following Monday morning I was summoned to the director's office and told never to play with the skiff again — it was there for serious marine biology research, not for foolish amateurs. Needless to say, I never made that mistake again!

Academic Commuter

The main work for technicians in Roger Revelle's Sediments Laboratory was to measure the particle size distribution of sea-bottom core samples. By the time I arrived on the scene the analysis procedures had been thoroughly worked out, and the routine operations were competently carried out by a crew of three WPA workers specially trained for the purpose. My main functions were to oversee their work, reduce their data to histogram plots, and order lab supplies.

Starting in the fall of 1940, Roger was assigned to teach a course in marine geology as part of the geology curriculum at UCLA. His academic rank at that time was instructor in geology. The class met once a week at UCLA, which required that he commute from La Jolla. He asked me to drive him so he could prepare his lectures in the back seat while en route. Sometimes Ellen came with us, which made the trip very pleasant. Roger and I would get out at the chemistry building (where geology was housed) and Ellen would use the car to visit friends or go shopping until Roger was ready to be picked up.

In those days there were no freeways, so we drove along Highway 101, which ran through all of the coastal towns. The 120-mile trip took about three hours. We would usually be coming home late in the afternoon, and when Ellen was along she would often arrange to meet friends who lived in Newport Beach, and we would stop for dinner at one of their favorite restaurants along the way — a very nice fringe benefit for me!

Charles C. Bates

The War Effort

As of May 1943 the SIO campus was largely abandoned because of the war effort. As I recall, the entire paid staff was about thirteen including the gardener, maintenance people, and two librarians. To keep teaching going Dr. Sverdrup accepted the first-ever class of military oceanographers — from the Army Air Corps of all things! We totaled eight. It was not a bad group, however. Out of it came the following:

a. National Academy of Sciences member (Dr. John C. Crowell, geology)

b. U.S. Naval Oceanographic Office's Scientific and Technical Directors (Dr. Charles C. Bates, 1964-68 and Dr. Boyd Olson, 1968-78)

c. Chairman, Dept. of Oceanography, Texas A&M University (Dr. Dale F. Leipper, Initial chair, 1950-65?)

d. Chairman, Dept. of Oceanography and Meteorology, U.S. Naval Post-graduate School (Dr. Dale F. Leipper, 1965?-1982?)

However our teacher, Dr. Sverdrup, was the one who impressed me. While we youngsters would knock off each afternoon at 4 p.m. to sun on the beach with our wives, Dr. Sverdrup would be trudging up the hill to his home with a couple of technical books under his arm to engage in his own private pre-dinner study. Another event that was above and beyond the call of duty for Dr. Sverdrup was hosting an "at-home" for military officers on campus (about ten) every other Friday night during the summer of 1943 despite all the food and drink rationing. However, the best part of such get-togethers was Dr. Sverdrup's storytelling about his earlier days in the Arctic.

Dale F. Leipper

The Old Days

Housing in 1946: After serving as an Air Force meteorologist during the war, I came back to Scripps. When I saw Dr. Sverdrup he asked if we had found a place to live. I told him that Virginia and I had rented a place up at Camp Callan at the top of

the hill. He was surprised. Since housing was very scarce, he asked how I did it. He then appointed me to be the Scripps housing representative.

Soon after that, Carl Oppenheimer came to enroll. He then came to see about housing. I showed him a place he could get for thirty-five dollars per month but he said he would prefer to find a place in town. He looked around. After several days of hunting he came back and wanted to know if the place on the hill was still available. It was, and it looked much better to him after he had seen the prices and places in La Jolla. He took it. Housing in La Jolla was hard to find.

Land availability, 1947: At this time, I was a graduate student and a $3,000 half-time employee at SIO. My duties were running the BT section (where Wayne Burt, Margaret Robinson, and Townsend Cromwell among others got their first Scripps jobs) and also an ONR fog forecasting project. (The method developed is still in use at North Island and it was work on this project that led to my meeting John Knauss and bringing him into oceanography.)

Anyhow, near our apartment (where the lane turned away from the top of the cliff), I saw a plot of about seven acres of unused land, which I thought would make a good investment. I was pretty serious about it. Isn't that something on a $3000 income? Things are different now.

George F. Weisel

After the War

Some incidents that occurred at Scripps during my stay had better not be recalled. The Second World War had just ended and practically all of the students were veterans not quite adjusted to civilian life.

There are some anecdotes, however, which I find different. One involved the prestigious professor of chemistry [obviously Denis L. Fox], who was a world authority on animal pigments. Although an ichthyologist rather than a chemist, I was selected to

skin out the colorful behind of a male baboon that had recently died at the San Diego Zoo. The faculty probably believed that a kid from Montana had skinned out multiple bison and elk. Anyway, I accomplished the mission and delivered to the professor a patch of skin loaded with pigments. He was a friend ever after.

A further incident involving the same chemist may aid future graduates. My final oral exams were imminent and my committee included the chemist along with some illustrious characters from UCLA. I was forewarned by other students that all professors ask questions based on their own areas of expertise. Sure enough, Dr. Hubbs, who was then saving the gray whale, asked me what I knew about whale livers. All I could answer was that it was a whale of a liver. I did better with the chemist. He had just written a section on biopigments for the *Encyclopædia Britannica*, which I had acquired and memorized. As if on cue, he asked questions based on the article and I was able to scrawl out wonderfully complicated formulae on the blackboard. This false show of erudition impressed my committee so I passed the exam in spite of the miserable response to my major professor concerning the whale liver.

Warren S. Wooster

The Late 1940s

I came to Scripps in the fall of 1947. The year before, I had been at Caltech in a chemistry graduate program. After several years in the Navy, I was restless and looking for something more exciting than a chemistry lab. Harald Sverdrup gave a guest lecture and convinced me that oceanography could provide an interesting career. Then I learned that Norris Rakestraw, my freshman chemistry professor at Brown, was at Scripps. I went down on the Greyhound to see him and was offered an assistantship. So I finished off at Caltech with a master's degree and headed for La Jolla.

In 1947, activities were centered in the Scripps Building, connected by a bridge to the library, and in Ritter Hall. There was also a small aquarium on the lawn just north of Scripps, and a variety of wooden cottages where faculty and lucky students lived. Harald Sverdrup was director, lived in the Director's House north of Ritter Hall (now home of Sea Grant), and had his office on the second floor of Scripps, east of the only classroom on campus. He was very accessible, with only a secretary between him and the world.

My class represented a large increment to the student body, with five members: Palmer Osborne, Townsend Cromwell, Bill Van Dorn, and Fred Taylor in addition to me. The bible was *The Oceans,* and we were taught by some of the authors — Sverdrup for physical oceanography and Martin Johnson for biological oceanography. Fran Shepard taught marine geology, mostly from his then unpublished book, and Norris Rakestraw was the chemist. The division of oceanography into these four basic areas, and the requirement that all students take them, established a precedent that was followed for many years in most U.S. oceanographic departments.

(At the time there were no other such departments in the country. One could study oceanography at the University of Washington only in one of the appropriate departments, such as physics, chemistry, or zoology. There were programs at Rhode Island and Miami, but I don't believe they were then formal degree-granting departments. Programs at Texas A&M and Oregon State came later.)

All classes were held in the Scripps classroom. I remember particularly those of Harald Sverdrup who made one feel a part of his work at sea, especially on *Maud* drifting in the ice-bound Arctic. In the first semester we learned about the physical characteristics of seawater, geostrophy, the characteristics of water masses, and the general circulation — especially of the named currents. These were what one might have called the physical geography of the sea, if the word geography had been more

respectable at the time. I think that Chapter 13 of *The Oceans* was largely the creation of Sverdrup, and it was a treat to learn it from the master himself.

Demonstrations at sea were on *E. W. Scripps*; Herb Mann was the principal (I think, the only) marine technician. SIO's entire collection of reversing thermometers (all from Richter and Wiese, as I remember) was kept and transported to the ship in a large wastebasket. Herb indoctrinated us in the mysteries of the reversing (Nansen) water bottle and thermometers.

By the spring of 1948, Sverdrup had returned to Norway (not, as far as I know, out of frustration with his latest batch of students), to be replaced by Carl Eckart as director, and Ray Montgomery as the teacher of physical oceanography (who taught me more than I wanted to know at the time about vorticity). Other instructors included Marston Sargent, Denis Fox, Claude ZoBell, and Carl Hubbs.

I was Norris Rakestraw's assistant, so while taking his course in chemical oceanography, I also set up the lab for the demonstrations. At the time, I was the only student specializing in chemistry; the rest of the department consisted of Dave Carritt, an instructor, and Yvonne Homsey, Rakestraw's secretary. Starting at Brown, Norris had been editor of the *Journal of Chemical Education*, and while there had a succession of beautiful secretaries who were married off in succession to enterprising graduate students. The editorial work continued at Scripps. Norris was an energetic man, always running up the stairs in Ritter. Every month or so, he would suddenly decide to do some research. This meant an explosion of activity for Dave and me until the mood passed.

Unmarried students found rooms in La Jolla. (I had a place on Hypatia Way for a while.) There was a boarding house in one of the red cottages near the Cove where some of us ate — John Knauss was working at Navy Electronics Laboratory at the time and we first met over a meal (I don't remember the meal). Soon after my marriage (in 1948), I was able to move to one of the cottages (T-22) overlooking the Community

House (where IGPP is now located). As I recall, the rent was $70 per month and well worth it. The only drawback was that the barking of sea lions sometimes kept one awake at night.

Employment of indigent students was not a problem, especially after the Marine Life Research program started in late 1948. This had been elaborated by Sverdrup and Elton Sette, an enlightened fishery scientist who believed that the ocean environment had some influence on the sardines and other creatures that lived therein. In its first years, the Scripps component of the program was run by a few graduate students, initially including Laurie McHugh, Bob Reid, and me. Monthly cruises began in early 1949. I went on the first, aboard *Crest*, a converted mine sweeper similar to that which became Cousteau's *Calypso*, although a much less elegant conversion.

There were lots of cruises during the few years that I stayed with MLR. One was to an anchor station to see if the changes observed in a few days were comparable to those observed from month to month. (They were.) Professor Albert Defant was visiting at the time and participated in the cruise. Later he worked up the data to test his belief that MLR data were aliased by tides. When I watched him pass a sine curve through a wild scatter of data points, I asked how that was possible. "Das is kosmischer schwung" was his reply. On another cruise, aboard *Black Douglas* north of San Francisco, we rescued the crew of a lumber schooner that sank in the same storm that had prevented us from making stations for several days.

As is well known, there is no end to sea stories, but this seems as good a place to end as any.

Robert M. Norris

Teaching

During the time I was at Scripps, there were only about forty or fifty students enrolled, so it was a pretty small place. Incoming graduate students were all expected to take four basic courses, one in physical oceanography taught by Roger Revelle and

Bob Arthur, marine biology taught by Martin Johnson, marine chemistry taught by Norris Rakestraw, and marine geology, or I should say, *sub*marine geology taught by Fran Shepard. In my view, Roger Revelle, despite his many quite notable talents, was a terrible classroom teacher. He would often leave us so confused we had to go see Bob Arthur, who was a superb classroom teacher. Norris Rakestraw was also an excellent teacher and, I think, was more concerned than anyone else about student welfare and student problems. Martin Johnson I liked, but always felt did not require enough of his classes. Fran Shepard, my supervisor, although better than Roger, was not my idea of a great classroom teacher. He constantly paced back and forth while lecturing and had a habit of sort of looking over your shoulder distantly and humming softly when you were trying to talk with him. Although I found him distracting in class and difficult to work for, I developed a considerable fondness for him and empathy for his work.

Because space was limited on the La Jolla campus, some graduate students were assigned office space in Building 365 atop Point Loma on the Naval Reservation, above USNEL. Building 365 had a marvelous view of San Diego Bay and we had lots of space to spread out our papers and books and also had a big lab where sediment work could be carried out.

The Navy Electronics Laboratory (NEL) retained one room in this building for storing some of their sea-going equipment. One day when I was not being very serious about my work, I got the idea (from the comic strip Li'l Abner) to make a sign for NEL's storeroom. I carefully lettered my handiwork with a LeRoy lettering set so that it looked reasonably official. It read: FEDERAL OWL SANCTUARY, By Appointment Only. I put it neatly on the storeroom door. A few weeks later a visitor came into the building looking for somebody. He stopped and read the owl sanctuary sign, and I remember hearing him muttering "My God! What in hell will the government do next?. . ." In due course some NEL people came to use the stuff in the storeroom and also read the sign and went off chuckling. Over the following few months a lot of people started

calling NEL the "Federal Owl Sanctuary" and the people who worked there, the Federal Owls. I have no idea how long this went on, but a few years after I left Scripps Bob Dietz and Al Carsola, at least, were talking about the Owl Sanctuary.

Roger Revelle

Roger Revelle could be both physically and intellectually intimidating and there were a few tense moments for me during my Ph.D. orals when he came into the room about fifteen minutes late, smoking a big cigar. I can't recall exactly what he said, but it was more or less an inquiry about what importance my dissertation had. I had determined not to be intimidated by Roger and gave some sort of reply that seemed to satisfy him. I suspected it was less what I answered than my success in remaining reasonably unrattled. Looking back on it now, I would have to conclude that the main importance of my dissertation was that it allowed me to complete a Ph.D. on schedule.

When I was getting the final signatures on my dissertation, I was told by Fran Shepard that the other members of the committee, apart from Fred Phleger, wouldn't want to take time to read the whole thing. Roger made it very clear that Fran was wrong, so I had to beat a hasty retreat and give Roger time to go over the final draft. I don't know whether he actually read it or not, but I do know I was afraid to go back for a few weeks to get my signature.

Roger had a wonderful sign in his office that I always thought was quite fitting for him. It read FAN THE FLAMES OF CONTROVERSY on a background of flames.

Although Roger certainly had the ability to dominate and intimidate, he also had qualities of kindness and generosity. I remember that in the 50s it was his custom to host a party for the new Ph.D.'s, including dinner at a nice restaurant. There were two of us when I got my degree and it was a very nice party.

Roger also was famed for his weird working hours and might sometimes be found in his office at two or three in the morning. On one occasion, I was helping Paul Horrer with a consulting job and Paul was the sort of guy who finished every project by working night and day at the end. We were frantically working on one of these studies one morning about 1:30 a.m. when in walked Roger with a tray of sweet rolls and hot chocolate to pep us up a bit. I'm sure he did this for others now and then, but I've never forgotten it.

Fran Shepard

Fran Shepard was nothing if not enthusiastic about his work and that certainly was an inspiration to his graduate students, but on one occasion his enthusiasm got the better of him. At the time he was studying California's submarine canyons, La Jolla Canyon in particular. Fran had hired a hard-hat diver named Frank Haymaker to descend into the upper part of the canyon to make observations (this was in pre-SCUBA days). Frank was a commercial diver and no scientist. At a beer party one night, at which Frank was present but Fran was not, Frank told us about working with Shepard, whom he called "The Old Man." Frank had descended into the upper part of the canyon to make observations. Fran was in a small boat above and in telephonic conversation with Frank. Fran was so excited about getting an eye-witness description of the canyon, that he was rapidly firing off questions to Frank in the form of "Don't you see. . . .?", and "Doesn't it look
like. . . .?" Haymaker at first tried to be as objective as possible, but soon wearied of the questions and enthusiasm so that to obtain a little peace for himself, would just agree with whatever Fran said. We grad students were a bit horrified at this news, fearing that Fran would publish stuff about the canyon, presumably based on eye-witness accounts, that was just not true. We let Frank know that this sort of thing could create problems, but we were afraid to tell Fran about it.

Fran was not very apt mechanically and employed people to take care of those aspects of his life that required mechanical skills. On one occasion, he hired Jeff Frautschy to help him install a television antenna. Jeff had wired up the antenna and was fixing the lead-in wire when he encountered some problem with a big bougainvillea. Fran grabbed hedge shears to help Jeff. Jeff said he knew what would happen but wasn't able to head Fran off quickly enough. Sure enough, on the first clip, Fran chopped the lead-in wire in half.

Fran was an enthusiastic long-distance swimmer and after (or before) one of these swims, he was walking on the beach in front of the La Jolla Beach and Tennis Club. He looked up at the dining room windows to see, much to his surprise, a sea lion in the restaurant, looking out the window of the otherwise unoccupied restaurant.

As a result of his long-term studies of La Jolla [submarine] Canyon, Fran had found that periodically, but for unexplained reasons, sediment in the canyon head suddenly slid down the canyon into deep water. The notion that these canyons were cut by submarine erosional processes was just gaining foothold and Fran was still very much an adherent of the idea that canyons were drowned river channels, but he did want to learn as much as possible about what was happening in the canyon. He organized a great flotilla of miscellaneous Scripps and private boats to assemble along the axis of the canyon. As I recall, each of the participating vessels lowered some sort of photo-sensitive device into the canyon. At a given signal, a black powder charge was exploded in the sediment fill in the canyon head. It was hoped to generate a sediment flow that would travel well down the canyon, but owing to the perversity of nature, all that happened was the development of a big evil-smelling boil of blackish, muddy water above the explosion. The flow moved down the canyon a few hundred feet at most. A few months later, a natural flow removed most of the accumulated sediment with no help from Fran.

Fran told us about his experiences with the April 1, 1946 tsunami that did so much damage in Hawaii. He and his wife Elizabeth were staying in a little holiday cottage on the north shore of Oahu. They were at breakfast that morning when Fran suddenly noticed that the surf sound had died away; he looked out and saw that the sea had withdrawn an unusual distance. He told Elizabeth to make for high ground while he grabbed his camera and climbed a coconut palm. In his excitement, he lost his glasses while climbing the tree, and as a result his photos were a bit blurry. When the incoming wave came in a few minutes later, it lifted the cottage off its foundation and moved it fifty feet or so. When the water withdrew, he came down from his perch, was amazed to find his glasses sticking out of the sand at the base of the tree, and rushed off to join Elizabeth up the hill. He also told us that some people in the neighboring cottage had rushed off leaving breakfast cooking on a kerosene stove. When they returned, their cottage too had been floated off its foundations and was 100 feet away or so, and the stove was still going and burning their breakfast.

Andreas B. Rechnitzer

SCUBA at SIO

I was not present for the beginning of diving for science at SIO, although some claim I am old enough to have been there. Frank Haymaker was hard-hat diving for Dr. Francis Shepard when I arrived at SIO, January 1947. His classic U.S. Navy equipment was lost to the bottom of the sea when the SIO war-surplus U.S. Navy utility boat turned, broke loose from its anchor in a stormy sea, and sank off La Jolla. I was to have taken my first hard-hat diving lesson from Haymaker on that fateful day! In the fall of 1947 I transferred to UCLA for course work necessary for a Ph.D. candidate.

In the spring of 1950 Conrad (Connie) Limbaugh and I transferred, as graduate students, to SIO from UCLA with two Aqualung regulators, one triple-tank unit, and

one single tank. They were the third and fourth regulators sold in the U.S. and were purchased from Rene Bussoz's Westwood sporting-goods store by UCLA Zoology Department Professor Boyd Walker.

The real start of using SCUBA for science began at SIO in the summer of 1950 when Connie Limbaugh and I began investigations of the kelp beds. I was married and had to find a place to live for [my wife] Martha and [son] David. Connie was a bachelor, without much money, and used his car for sleeping and housing for the first six weeks in La Jolla. Part of the time he slept on the open beach just north of the Beach and Tennis Club. After that, he shared accommodations at Windansea with a couple of technicians aboard the SIO research ships.

The term scientific diver had not been coined yet, neither had the acronym SCUBA — not in English at least.

Diving out of Connie's Kaiser was a common event. We traveled together throughout southern California in the green clunker. Most often, the gasoline gauge registered slightly above empty.

<u>Diving protocol or diving operations infrastructure:</u>

- The original SCUBA diver list included only Connie and me.
- No air compressor or local supply: six 160 cubic foot storage tanks.

- No dedicated dive boat.
- No regulator maintenance and repair manuals: Jim Snodgrass, Frank Hetzel, and Roy Pruitt, Special Developments department, dismantled our cherished regulator, developed a repair manual and gave us hand-made tools for assembling and disassembling.

- No diving instructions manual or diving protocol.
- To this equipment list we added bastardized regulators, surplus tanks, surplus life vests for retrieving fish (not divers), weight belts, and long johns.

- No wet suits until Drs. Hugh Bradner and Stuart Mackay.

- Vaseline as a cold protection layer; we tried a spectrum of unsuccessful techniques to stay warm.

- No dive shops or campus dive locker — Connie's cubicle was in Scripps Building.

- No Diving Officer.

- No SIO Dive Committee.

- No dive log. Hubbs's scientific record log served as the format for the diving log.

- No certification standards or restrictions existed against SCUBA at SIO until the loss of a Berkeley student brought changes by the University officialdom.

- There were no restrictions, either on the use of SCUBA to spearfish or harvest abalone and lobster until a local, not to be named, purist skin-diving club aided in getting state restrictions on the use of SCUBA for taking lobsters and abalone. Logic prevailed and it was rescinded later.

- There were no science procedures or scientific tools — only screw driver, five-tine frog spear, bottles and handnets, and net bags.

- No equipment or guidelines existed for underwater photography. We had camera housings built for 16-mm motion picture and still cameras.

- *Skin Diver* magazine was not in existence.

- There was little faculty support. Carl Hubbs, at the advanced age of 55, made but a single dive with us. He was an avid swimmer, but did not take to SCUBA diving like his proteges. $500 to outfit a student diver put a strain on department budgets.

- There was no U.S. Navy experience with SCUBA or sub tender decompression chamber.

- There were no dive tables for SCUBA. Repetitive dive tables were generated.

- No training course.

Connie and I drafted the first unofficial SIO training procedures, operation, and safety rules. We negotiated with the La Jolla Beach and Tennis Club to use the swimming pool early in the morning before the members. Some of those we certified: Bev Morgan, Al Tillman, Mel Fisher, Bob Dill, Ed Hamilton, Bob Dietz, and others at the Naval Electronics Laboratory. Many SIO faculty, staff, and students were trained without the use of our original syllabus. The development of a comprehensive syllabus and rules for diving progressively got better as Connie and I found time to jot down what worked well and what didn't.

Not all of our subjects passed even under such loose formal training. One student was turned down for "psychological" reasons. We were not sure just what was wrong with the student or exactly what we meant by psychologically unstable. He did not exhibit good SCUBA skills and exhibited characteristics that prompted both of us to declare that we would not wish to dive with him as a buddy. Connie took on the responsibility of informing the student that he would not be certified. His reaction was a threat to kill Connie. That clinched for us that he should not be certified.

<u>Rapid strides in science made through direct visual observations and new collecting techniques</u>:

- We took advantage of every opportunity to visit a new site — shallow, deep, mid-water, bay, shore, island, and inland. Many species considered to be rare were found by us to be common, albeit located in areas where classical collecting techniques rendered them safe from collectors. Learning to recognize living fishes was a new experience for all of us.

- A new species of butterfly fish, *Chaetodon falcifer*, was speared by me at a depth of 100 feet at Guadalupe Island, Mexico during a collecting trip. Jim Stewart was a part of the dive team. This species was named the scythe butterfly fish and was adopted as the SIO Aquarium logo.

- We collected at Dike Rock for larval forms of lobsters, etc. Kelp beds were a key scientific study area for the first five years.

- Recovery of Indian artifacts, primarily from the surf zone in front of the Beach and Tennis Club, began a coast-wide underwater search for stone metates, mortars, net weights, and a few manos. One metate was recovered from 80 feet on a canyon ledge and one granite bowl was recovered from 100 feet off Point La Jolla.

- Submarine canyon processes were studied by [Conrad] Limbaugh, [Robert] Dill, [Earl] Murray, [Andreas] Rechnitzer, [Charles] Fleming, and others to support efforts of [Francis] Shepard and [Douglas] Inman.

- Islands — Coronados, Guadalupe, Catalina, and ones in the Gulf of California — were explored and new ranges were established for a number of vertebrate and invertebrate species, as well as algae. Extending ranges and discovering new species opened the way for shallow-water ecology. [E. W.] Fager said, "You can't be a marine ecologist unless you can SCUBA dive." Scientifically, things were moving fast and our cup was full exploring, collecting, and enjoying the then-pristine coastal diving. We lectured widely and displayed our underwater slides and movies to groups large and small.

Epilogue:

When I went to Lake Baikal, Siberia in 1989 to conduct a series of scientific SCUBA dives, I was proudly escorted into the Limnological Institute diving locker. After more than forty years of diving I was instantly carried back to those meager beginnings at SIO. The equipment and facilities were reminiscent of what we had first assembled to support us in the early 1950s.

It is gratifying to see how much scientific SCUBA diving has contributed to our knowledge of the sea and that it is a major tool for scientists worldwide.

I take personal pride in that the early training procedures and protocols we implemented for the first time here at SIO have been sustained, with minor changes, to provide millions of certifications to both scientific and recreational divers.

I am thankful too that we were followed by Jim Stewart and a cadre of scientists that have added SCUBA to their capabilities.

Jacquelin N. Miller

Diving Locker

One suggestion I'd like to make is to find the notebook that was kept in the diving locker and in which everyone was supposed to record diving accidents or "situations." There were some classic stories in that book by Connie Limbaugh on experiences he had in the early days of SCUBA. One in particular that I recall him telling about and that I remember seeing written up in that book occurred when he first started SCUBA diving. Apparently he made up tanks from some old CO_2 bottles. The important attribute of the tanks was they were very heavy — too heavy. According to Connie's story, he and another diver had gone out to dive in the Scripps Canyon. Connie jumped into the water and went down the 90-100 feet like a rock. He was so heavy that he couldn't swim. He said he walked over and sat on a rock to think what to do. He didn't want to dump his tanks because they cost a lot and he was a starving graduate student. He had several plastic bags for collecting specimens. While contemplating his situation (on the rock) he got the idea! He took two plastic bags, put them over his regulator, collected the exhaled air, and holding the two inflated bags over his head he "parachuted to the surface."

Harris B. Stewart, Jr.

Holiday

Graduate school classes at Scripps in 1951 were scheduled to start in September, yet I had arrived in La Jolla eager to start at the end of June. *Horizon* was about to sail for a two-month geological expedition to the Gulf of Alaska in the North Pacific, and my summer problem was solved when Warren Wooster asked me if I would like to go. He didn't have to ask twice, for I accepted with alacrity.

The expedition's name, Northern Holiday, confused me. I understood the northern part, but holiday? The cold, often-rough waters of the Gulf of Alaska on a small ship did not fit my concept of a holiday one little bit. In the marine vernacular, I

soon learned, a holiday is an area that has somehow been overlooked. In painting a ship's hull, for example, spots that are inadvertently missed are called holidays. Applied to a survey, a holiday is an area with no survey lines through it. After this was explained to me, I pointed out that running a survey line through a holiday did not remove it, but rather, created two where only one had been before. Not wishing to be classified as a wiseacre so early in my marine geological career, I never mentioned the subject again and prepared to join the ship.

The Big Catch

For the first week after Kodiak, the expedition settled down into a routine of station observations, mid-water trawls, continuous measurements of the various parameters that were recorded in the lab, and an occasional dredge or sediment core. Routine, that is, until the night of 10-11 September.

Somehow the bottle-cast stations for four straight nights had ended up on my watch with Al Smith, Jose [Barandiaran], and Charlie Denkle. That night the other three secured after the deep cast was in, and Bill Riedel came aft to help me take core No. 10. We put the big Phleger corer over in 2750 fm (16,500 feet or just over three miles) of water. The dial in the hydrographic winch reads in meters, so it would take about 5100 meters of wire to reach the bottom if the corer went straight down. That night, however, even with only a light wind, *Horizon* was apparently drifting fast, for we soon had a wire angle of forty-five degrees. The corer certainly was not going straight down, so it would take more wire to get it to the bottom. We felt we would know when it reached the seafloor, for there was a clever device called a ball-breaker on the cable just above the corer. When the corer enters the bottom, tension on the cable is relieved, and a heavy mass of lead with a sharp point slides down within the ball-breaker to puncture a glass sphere that implodes with a pop that we can hear on the hydrophone that dangles over the side and is connected to a loudspeaker on the after edge of the boat deck. We had the winch operator let out 100 m more, then 200, 300 until we had 6300 m

of wire out, and the winch drum was down to the last layer of wire, but still no pop from the ball-breaker. So we had the winch start the long voyage home for the corer.

With about 5900 m still out, the winch ground to a groaning, complaining halt. I climbed up to the boat deck to talk with Don Derringer — now in full beard — who was running the winch. He increased the power, and the drum turned slowly. As the ship rolled to port, the winch stopped. On the starboard roll, there was enough release of tension so a few feet of wire could be recovered. At this slow pace, we figured it would take at least three hours to bring the corer back aboard.

Bill and I did a bit of dip-netting in the light from Mac's floodlight, but dawn was coming, and the squid and sauries were not interested in being caught. Derringer's watch was over, and George Fenton had assumed the winch seat. I was sitting on the hatch cover hypnotized by the regular groans of the winch with each roll and enjoying slightly libidinous thoughts when I was startled by a loud splash sound followed by a heavy dripping sound. I turned and there above where the wire left the water and even with the overside bucket and rising slowly toward the sheave was a great gleaming black mass. It was still dripping as it rose slowly upward. I knew that if it reached the sheave we would be in trouble, so I screamed at George to stop the winch. He did when the "thing" was only inches below the sheave. I jumped into the bucket. At first glance, I thought it was a large turtle. It was round and about the right size. But once in the bucket, I could see that it was an immense rock that somehow had become entangled among the many meters of 5/32nd-inch wire that must have lain on the seafloor. The winch had stopped, and it seemed strangely quiet without the straining whine that changed pitch with every roll. George shouted down, "What is it, Stew?" I was looking at it and still couldn't believe it. Three or four turns of wire in a perfect clove hitch had secured a large manganese concretion. I held my breath for fear it would come loose and drop back into the sea. Who would believe me if I said we had brought up a big rock in the hydrographic wire, but it had dropped off and fallen back

overboard? On the Mid-Pac Expedition [1950] scientists had been excited by fist-sized manganese nodules dredged from Sylvania, Hess and Johnson guyots, and here before me dangling on a wire no thicker than a lead pencil was a piece almost three feet across. I shouted for Bill Riedel and he came up into the bucket with me. We decided to have George lower it enough so it could rest on the rim of the bucket. He did, and as the ship rolled, I hung onto the rock as though my life depended on it. Had it gone back to the bottom, I think I still would have been hanging on when it landed.

Bob Haines brought out a wire come-along, hooked it to the wire and to the bucket rail so that it took up all the weight of the outboard part of the wire. George then reversed the winch, and Bill and I carefully — even lovingly — lowered the specimen onto the floor of the bucket and carefully unwrapped the wire that had held it so securely through its three-mile rise to the surface. We felt that without a doubt, it was the finest geological specimen ever recovered from the deep sea. We carried it into the lab, grinning like Cheshire cats. We knew we had a real trophy.

The *Horizon* nodule, as it is now known, weighed over 100 pounds. It was made up of a manganese oxide crust over a rock called phillipsite and topped with a pile of separate manganese nodules. It is a spectacular specimen and now resides in the museum of the Scripps Institution of Oceanography in La Jolla, California.

Scripps Gets a Seamount

In the Gulf of Alaska, Bill Menard and I surveyed ten seamounts, eight before our brief stopover in Kodiak and two more after we left. Three of the ten were new discoveries. These were surveyed in detail and their locations determined. Later, the results of these surveys and the supporting data were turned over to the U.S. Coast and Geodetic Survey so the seamounts could be shown on the nautical charts for which the USC&GS is responsible. The largest of these new discoveries was found some seven hundred miles northwest of Hawaii, and it was a big one. It was flat-topped and rose 11,400 feet above the seafloor to within 900 fm (5400 ft) of the surface. That's a

mountain over two miles high that rose from a base only eighteen miles across. We thought this one was big enough to justify being named Scripps — a designation being saved for a really big one, and this was it! It is now listed in the Gazetteer of Undersea Features, names approved by the U.S. Board on Geographic Names. It is listed as Scripps Guyot at 23°50'N, 159°23'E.

Saving the Camera

SCUBA diving in Scripps Canyon is an eerie experience. Fran Shepard, his secretary, Ruth Young, Dick Mills, and I went out by boat one sunny afternoon, as Fran wanted some photographs at the bottom of the canyon. He was interested in getting an estimate of the volume of sand that had moved out during a recent slump. Earlier dives had discovered that not only had the accumulated sand in the canyon-head wedge moved out, but also that much of the sand along the canyon floor had gone too. It was easy to tell where the lost sand had been, for the canyon wall was now bare where it had previously been covered. Above that area was an abundant growth of algae, bryozoans, barnacles, and other attached and encrusting organisms that blanketed the wall above the former bottom. The line of demarcation between these two areas near the bottom of the vertical canyon wall was very clearly defined, and Fran wanted photographs on this dive. We could make measurements later.

The camera I was to use was a 35-mm camera in a French-made Tarzan case of aluminum with a glass window and an underwater flash. This was one of the first underwater cameras, and Professor Shepard valued it highly. As I rolled backwards from the boat into the water, one end of the camera strap broke its attachment to the camera. I had to devote one hand to holding the camera, the other to holding my note slate. Dick and I flippered our way down head-first along the canyon wall where the bottom lay just a hundred feet below. Approaching the distinct line between "dirty" and "clean" canyon wall, I stopped my descent and turned upright to jot down a note. I pulled up my knees and let the camera rest on my thigh as I wrote on the slate. Because

I was slightly heavily weighted, I was sinking slowly toward the canyon floor now only a few feet below me. Suddenly I felt a sharp pain in my right thigh. Something had grabbed me. I reached down to move the camera, but it would not budge. It was stuck tight to my wet suit and to me. Dick sensed there was a problem when I gave the let's-go-up sign just as we reached the canyon floor. I pointed to the camera as the source of the problem, and he reached for it thinking I wanted him to take it from me. I moved his hand away and stood up to show him the camera wasn't going anywhere, and we started the long climb back toward the boat high above us.

I knew what had happened. As the water pressure increased with depth, it exceeded the collapse depth of the camera's glass window. The camera imploded, and the pressure difference resulted in its sticking very tightly to my leg. It was so tight that it never occurred to me to hang on to the dangling strap as we swam up. Just a few feet from our breaking the surface, the pressure equalized, the camera let go and started to sink back down. I turned over and started after it. It was — or had been — a good camera, and the idea of having to tell my senior professor that I had lost his camera was not appealing. Although I swam downward as fast as I could, that miserable camera managed to stay just beyond my grasp until it landed on the bottom to throw up a small cloud of fine-grained silt that floated slowly down-canyon with the current.

I reached the boat, said "I got it," and handed up the camera to Ruth Young. She held the camera over the side to empty the water. But it wasn't seawater, it was blood. The suction effect had filled the camera case with my blood. I was afraid when Ruth screamed that she would drop the camera overboard, and I needed another trip to the bottom of Scripps Canyon like a turtle needs airbrakes.

Once aboard the boat, I realized that the broken glass had cut not only my wet suit but also my leg. The pressure differential had pulled a large cauliflower of fat from my thigh and through the gash in my wetsuit. The others were more concerned than I, but I agreed to have the campus cop run me into the emergency room at the hospital.

How do you explain to a doctor that you had been bitten by a camera? Dr. Bob Murphy, a friend, was on duty. He cut off the cauliflower and stitched up the cut in my thigh. He asked about the scar on my other leg. When I told him I had been bitten by a sea lion in Baja California, he rolled his eyes up, said he was not at all sure he was up to treating oceanographers, and sent me home.

Lobster Dinner

In addition to a modest payment from Naval Electronics Laboratory (NEL) for diving surveys to observe Navy-installed mines on the sea floor, there was a fringe benefit. Below the NEL pier from which our dive boat left was a fifty-five-gallon oil drum sitting on the bottom, part of the trash found on the floor of harbors worldwide. It had an eight-inch-diameter hole at one end. Being curious, I banged my geology hammer on the other end, and four fat lobsters shot out of the hole like jet fighters taking off, disappearing in the murky harbor water. This discovery, I decided, deserved the "secret" classification much more than the mine project, and I told no one. However, on my next trip to NEL's mine field, I had a burlap bag that I hid beneath the pier. I was glad to see that my barrel was still there. On our return to the pier after our inspection and description of the disappearing mines, I recovered the burlap bag. While my diving companion, Bob Lankford, held the bag over the hole, I banged on the other end of the oil drum, and it worked! Two lobsters flew into the bag, much to Bob's surprise, for I had not explained to him the "why" of the strange operation. We each had a lobster for dinner that night. On subsequent visits to the mine field, I usually returned with at least one lobster, occasionally two. But never did I get a repeat of those original four jet fighters.

Richard Y. Morita

Three Days' Food for Seven Days

On my arrival at SIO in the fall of 1949, Dr. Marston Sargent asked if I could read and write Japanese. My answer was "no." Because he wanted many papers translated, he told me that I wouldn't be able to do him any good. My mentor was Dr. Claude E. ZoBell and I had the opportunity to participate in three oceanographic expeditions during the period I was at Scripps — the Mid-Pacific Expedition of 1950, the Danish *Galathea* Deep-Sea Expedition, and Expedition Transpac.

On the island of Bikini during the Mid-Pacific Expedition, a party of five was put ashore to collect chemical and geological data while the ships went off to do more oceanographic research. We were left with three days' supply of food and plenty of water. Unfortunately, the ships extended their stay out at sea for seven days. As a result we ate fried, boiled, and fresh coconuts to make up our diets for the remaining days. One of the party was fortunate enough to catch an octopus. Unfortunately, I had never cooked an octopus and did not know it should be cooked slightly. Our teeth did get a good workout. The radio operator, having nothing to do most of the time, went snorkeling in the lagoon. Being hot and humid on the island we did not bother to wear clothes. After two days of snorkeling, he had a bad case of sunburn on his bottom, since it was the portion of his anatomy that stuck out of the water. His nickname became "R.A." I had never heard of sunburned toenails, but our technician had a very bad case, which made his toes swell. Since I was the microbiologist on the expedition, I remember the hours I had to put in after the scientific personnel went to bed — mainly because, to do microbial studies, one cannot have too many people walking around so that contamination results.

When *Galathea* Deep-Sea Expedition pulled into Honolulu on 1 April, we were met by the press, a band, and many hula girls. When docking was secured, everyone was presented with a lei. Upon receiving mine from one of the hula girls, the press photographer took our picture. I requested a copy of the picture as soon as possible. Upon receiving it, I went to the captain. I asked the captain if he would write a note to

Dr. ZoBell telling him that I had gotten married. There was a bet among my colleagues back in the laboratory as to whether it was an April Fool's joke or not. Donald Lear was the only one who bet that I had gotten married.

On Expedition Transpac, I lost most of my glassware when it hit the ceiling of the room in which I performed my research when *Spencer F. Baird* made a snap roll. A funny incident took place at Adak (a naval base) where we put in for fuel and provision. Noriyaki Nasu was bitten by the base commander's dog. When someone asked Nori why he was the only one bitten, he answered that in Japan the dogs bark "won won" whereas the American dogs bark "bow wow." As a result, he did not get out of harm's way.

During the early 50s, I can still remember the once-a-year parties that usually took place at the house that Nat Buckwald and I rented in town.

The number of students was small so that you had the opportunity to know your fellow students in other disciplines. One of my jobs for the students at Scripps during the early days was to keep the yeast culture viable for all those that wanted to brew home-made beer. I frankly do not know who took on this responsibility after I left Scripps in 1955, the year after I completed my degree.

Sayed A. El Wardani

Humorous Memories

In recognition of the 90th year of Scripps Institution of Oceanography I wish to share with you, my colleagues, some humorous memories of my time at Scripps. I arrived in 1950 from Alexandria, Egypt, after a year at Berkeley. I suppose I was somewhat of a novelty, being the first Scripps student from that part of the world.

My fellow students gave me a wonderful welcome in La Jolla. On a beautiful Southern California afternoon at La Jolla Shores a barbecue was thrown for me, with all the American trimmings of hamburgers and hot dogs. I was thrilled, happy to be so

welcomed to La Jolla and Scripps until my fellow students and others watching on the sidelines explained to me that part of the orientation of all new graduate students was that they go skinny dipping. I had no idea what that meant. It was explained to me in no uncertain terms. Anxious to please, I did as I was told and leaped into the Pacific Ocean to be completely oriented "the American way." No sooner had I done this then my fellow students called the police on me. What a prank! I was mortified, but I lived through it.

Walter Munk sat on my committee for my Master's oral examination. The respect I held for him was high and I still remember the dreadful fear I felt as I entered the examination room. I had studied my physical oceanography thoroughly. Then the moment of reckoning came. It was Dr. Munk's turn to question me. He asked me about gradients of the Gulf Stream off Cape Hatteras. I was lucky, I had studied them. After the exam, Walter tapped me on the shoulder and whispered in my ear, "I didn't know you knew so much." It was a great thrill for me.

Now for a little anecdote on Dr. Ed Goldberg. Ed arrived not too long after my arrival to the third floor of Ritter Hall. At the time, Dr. Norris Rakestraw was department head of chemical oceanography and dean of Scripps Institution of Oceanography. My laboratory was across the hall from Ed's. The hallways were long and I'll never forget the humorous sight of Norris Rakestraw chasing Ed Goldberg down the hallway with a flaming wastepaper basket. Ed was a chain-smoker back then.

Shortly after Ed's arrival at Scripps, we were together on the 80-foot *Paolina-T,* a major SIO research ship at the time. Ed was standing on deck enjoying nature's largest ashtray, the open ocean. I believe Ed was terribly disgusted with what he saw and how rudimentary our chemical oceanographic methods were. Personally, I think this was a turning point in Ed's future approach to his research of oceans.

I believe it was at this time that Ed received a message from the east, from Professor Hutchison of Yale, the father of biogeochemistry. The voice told him to use

the powerful tools of biogeochemistry — to apply them to the oceans. Other voices from across the Atlantic, those of Professors Rankhana and Sahama, fathers of nuclear geochemistry, told him to further extend such tools to all the oceans.

I believe that other messages emphasizing the same direction came to Ed. From the University of Chicago School of Geochemistry came the voices of Hans Suess, Harold Urey, and Harmon Craig. Also came the voice of Professor Harrison Brown from Caltech to extend these powerful concepts and methods of geochemistry to study of the oceans. This was the beginning of the great and extensive contributions by Ed Goldberg to the field of oceanography and environmental issues.

My memories of such great men as Dr. Walter Munk and Dr. Ed Goldberg have enriched my life considerably and continue to do so today. It is with great pride that I remember Scripps Institution of Oceanography as my alma mater. My pride extends to my children who also enjoyed the benefits of this great institution, growing up in La Jolla, going to Scripps Aquarium throughout their childhoods, and eventually graduating from UCSD. My daughter, Nile, also has great memories of a wonderful, generous man, Walter Munk, as she had the fortunate experience of working with him at the Institute of Geophysics and Planetary Physics at Scripps, as a scientific illustrator during her undergraduate years at UCSD.

Scripps has indeed enhanced my life as well as that of my family, and for this I can forgive all those, whoever they are, who pulled that lousy prank on me at my first Scripps picnic!

Eugene F. Corcoran

Tacos For Dinner

Back in the 1950s both Jim Kittredge and I were assistants to Professor Denis Fox. One day he asked that the two of us go to the airport to meet Professor Trevor Goodwin, a noted biochemist from England. Since the plane was to arrive during the

dinner hour, Jim called his wife to see what she planned for dinner. She said tacos. He told her to increase the number as my wife and I and Professors Goodwin and Nicol were also coming for dinner.

Jim and I met Professor Goodwin's plane, picked up J. A. C. Colin Nicol and we all went to Jim's house for dinner. However, Jim and I, and our wives had agreed we wouldn't eat our tacos until our guests had tackled theirs. We sat sipping our wine, until finally Professor Goodwin couldn't stand it any longer and he started to attack his taco with a knife and fork. We couldn't contain ourselves any longer so we explained how to eat those nice crisp tacos. We all had a good laugh and enjoyed the fine meal of tacos.

William S. Butcher

Student Cruise with Roger Revelle

Back in the 1950s every graduate student at Scripps had to take some general courses in oceanography no matter what his specialty. One part of that effort was a trip on the old *E. W. Scripps*, a motor/sailing vessel. The day my colleagues of that year and I went out was cold, cloudy, and drizzly. Moreover, there was a large southerly swell running so the ship off Pt. Loma was making a tough passage of it. We students were mostly huddled in the cabin waiting for commands from our highly respected leader, Roger Revelle, known irreverently to us as "blanket foot" for the extraordinary size of his feet. I well remember him bare-chested standing outside, thoroughly enjoying the elements, beckoning us reluctant students outside, and greeting us with, "Oceanography is such great fun, isn't it?" It really was to him, and a year later he toughened me further by asking from the back of the hall at my public defense of thesis, "What good do you think your studies have done?" Our paths diverged after I left, but Roger always remained an inspirational friend.

Steacy Hicks

Remembering a Few Men

Denis L. Fox

"Beware of Dr. Denis L. Fox." This advice was given to me by an acquaintance just prior to my arrival at Scripps in the fall of 1950. Although he did not elaborate, just the sinister way in which he pronounced "Fox" bothered me. I avoided any professional or social contact with Dr. Fox, purposely sitting on the opposite side of seminar rooms from him, for example. I was not looking for trouble.

I was in a driving pool with Jim Kittredge, a student of Dr. Fox. One day when we were about to go home, Jim said, "Wait a minute, I just have to grab some things from the lab. Come along." As soon as we entered the lab, Denis Fox emerged from his inner office. To my utter amazement, he greeted me with open arms. He then proceeded to show me all of his laboratory apparatus, explain his present projects, and tell me of his ideas for future research. On leaving, he invited me back. I visited him about every three months during my days at Scripps. He always met me with the same exuberance and cordiality of our initial meeting. When I was leaving Scripps, I called on him to say goodbye. We sat down together in his office (with that fine-smelling pipe) and had a long talk about my future plans.

Now, there is no subject that I know less about than biochemistry. However, Denis L. Fox inadvertently taught me a very great biochemical principle. If the chemistry between any two people doesn't work, in another pairing it probably will.

Richard H. Fleming

My wife and I were invited to a reception for new students at the home of Roger and Ellen Revelle. Early in the evening, a gentleman introduced himself as Dick Fleming, a guest of Revelle's from the University of Washington. I asked if he was the Fleming of Sverdrup, Johnson and Fleming. When he said "Yes," I blurted out, "Oh, I'm taking a course from Dr. Johnson, and everyone knows about Sverdrup; but I was

wondering who Fleming was." The moment it came out I realized what a horrible thing I had said. There was no point even in apologizing. Dr. Fleming, realizing how upset I was, continued to talk with us in his calm, pleasant manner. He even came back to us several times during the evening to indirectly assure me that he had not been offended by my unthinking remark.

Several decades later, his son (Captain Michael H. Fleming, NOAA) and I became very good friends. Mike even took my copy of *The Oceans* back on vacation to get it autographed for me. However, I never had the guts to tell him how I had insulted his father.

Harald U. Sverdrup

From the moment of my arrival at Scripps, I heard nothing but extremely laudatory statements about the great Harald Sverdrup. Bob Arthur, Walter Munk, and Roger Revelle would tell endless stories about his scientific contributions, administrative sensitivity, teaching inspiration, and humanistic qualities. Although he had returned to Norway, his spirit was all-pervasive during my years at Scripps, 1950-52. Sverdrup assumed monumental proportions in my mind. I easily pictured a very tall, blond, broad-shouldered Scandinavian with a commanding presence.

Several years later, I saw a notice that Dr. Harald Sverdrup would be giving a talk at Woods Hole, introductory remarks to be given by Dr. Walter Munk. I drove over on the appointed day. Walter and Judy were having a baby, however, so Walter did not attend after all. Someone else introduced Harald Sverdrup, and a man approached — a technician, I first thought — to adjust the microphone. He was short, dark, narrow shouldered, and very inconspicuous. He began to speak — it was Sverdrup!

After his talk I went up to him and said, "My name is Steacy Hicks. I'm sorry Dr. Munk was unable to come today, as I wanted him to introduce me to you." Sverdrup replied, "Oh, Steacy, you don't need Walter or anyone else to introduce you to me." We

talked for about 15 minutes, he always shifting the conversation back to what I was doing. His peaceful personality was magnetic and I soon realized why Scripps people of his era revered this great man.

Richard Vetter

Improvising at the Drug Store

During my few short years at SIO (circa 1950) I helped support myself and cover tuition by doing odd jobs for John Isaacs at the SIO machine shop. Some were odder than others.

One of the tasks that John wanted to be able to do was to determine the number of anchovies in a given volume of near-surface sea water. An approach that he asked me to explore was to obtain a silhouette photograph of them at night by igniting a press photographer's flash bulb a few meters under the surface (and below the targeted anchovies) using a speed-graphic camera with an open shutter. The design we agreed to was simplicity itself: a glass tube about 1/2" diameter and about 2" long with the socket of the flash bulb cemented into one end of the tube. Inside the tube was a battery with the positive end pointed up toward the flash bulb, and a small coil spring which kept the battery from touching the flash bulb. The battery was held inside the tube by a rubber diaphragm taped across the bottom end of the tube. If all worked as expected, hydrostatic pressure would drive the battery up as the unit sank and the flash would fire at the desired depth.

It was up to me to find the right combination of spring stiffness and rubber flexibility and strength. I tried several toy balloons but their rubber was too stiff. Same problem with wide rubber bands, etc. When I reported my lack of success to Isaacs he chortled, "Try a condom!" I confessed that I didn't have one and was told, "So buy a dozen at the drug store and get a receipt so that you can be reimbursed out of petty

cash." Well, I did, though it took some maneuvering to approach the one male clerk in the drug store when he wasn't busy with other customers, and the men at the shop had a lot of fun with my discomfort when I had to present my receipt for a dozen Trojans to the young lady in charge of petty cash.

A few weeks later, hove to at night offshore we tried out our underwater flash "bombs." Zilch. Nada. The flash was much too dim and the sea surface wavelet diffraction much too strong.

Thankfully, many of John's many ideas worked, but this one was a dud.

Harris B. Stewart, Jr.

Thesis or Party

It was named the Capricorn Expedition because for the first time in Scripps history their research ships were to penetrate below 23° South, the Tropic of Capricorn. It was to be primarily a marine geology expedition, and I needed a thesis project as part of my Ph.D. requirements. How could I find a better opportunity than this? And with port stops at Fiji, Tonga, Tahiti, Samoa, and Nuku Hiva in the Marquesas, I could hardly refuse.

My former contacts at the Navy Hydrographic Office provided me with all the available sounding data for the area I had selected for study. It was a region north of the Fiji Islands with three large submerged banks, Alexa, Penguin, and Turpie. Were they former volcanos, flat-topped guyots, drowned atolls, coral reefs, or what? The expedition had four days scheduled for my project using both ships, *Baird* and *Horizon.* After a week of additional research at the Bernice P. Bishop Museum in Hawaii, I joined *Horizon* during its brief port call at Honolulu in the late fall of 1952.

On the run south, I made detailed plans for *Baird* to run sounding lines towing a magnetometer while *Horizon* lay to over the banks to support diving operations for sampling and bottom photography and to make geological dredge hauls both on the

tops and along the flanks. It would take four full days of around-the-clock operations with *Horizon* joining *Baird* for underway operations at night. Limited seismic lines were also planned using one ship as the shooting ship and the other as the recording vessel. I felt that after four full days or eight ship days, I should have enough data and samples to provide a full description of the banks and develop a hypothesis as to their origin. It could make a good thesis project, and had I been able to carry out the work as planned, it would have been. But it was not to be...

After Ocean Island and Rotuma, *Horizon* finally arrived in my thesis area at Alexa Bank at sunrise. *Baird* had already started the bathymetric and magnetometer survey. Divers were in the water by 10 a.m. flippering down through the clear warm water to the top of Alexa Bank. Walter Munk and I collected a few samples, realized that the bank was in fact a drowned atoll with a marginal reef of dead corals, and worked our way back up as our air supply began to run out. It had been a good dive, and I felt my thesis project was off to a good beginning.

Back aboard *Horizon*, I was told by the captain that he had had a radio call from Roger Revelle, expedition chief scientist on *Baird*, and that we had to leave for Fiji immediately. I was understandably shocked. If this was true, my carefully planned thesis project was dead. What had happened to wipe out my planned four days on the banks?

Helen Raitt, the wife of the expedition geophysicist, Russell Raitt, was to join the expedition at Suva in the Fijis. Also joining us there was the Australian marine geologist, Rhodes Fairbridge. The two of them had planned a formal cocktail party aboard *Baird* on our arrival. They had had formal invitations printed locally and sent to all the Fijian government officials as well as others on a list they had gotten from the local Chamber of Commerce. The reception was to start at 1700 hours (5 p.m. for the uninitiated) aboard *Baird* on the following Friday. All well and good. It seemed to them at the time to be a good idea.

But once *Horizon's* skipper used his dividers set to the distance the ship could cover in an hour, and walked off the distance from Alexa Bank to Suva, he had to leave immediately to get there by Friday. My thesis project was destroyed by a cocktail party!...

...In Suva, the two research ships were tied hull to hull with *Horizon* outboard. I went over to *Baird* and had what I will describe as "a talk" with Roger Revelle, director of Scripps. I was mad, really mad. The bottles for the cocktail party were all laid out on a hastily constructed table on *Baird's* fantail. There were all the bottles that had wiped out my Ph.D. thesis. When no one was looking, I stole an unopened bottle of Johnnie Walker Red scotch, hid it under my shirt, and retired to *Horizon*. Down in her engine room was a fine Scot whose name I regret I do not recall. He was not much for cocktail parties, but his eyes lit up when I produced the scotch from under my shirt. Scotty and I killed that whole bottle. It is to this day the only time I have been totally smashed, and I really was.

1953

Between Samoa and the island of Nuku Hiva in the Marquesas, there were more seismic runs. *Horizon* would start some fifty miles away to steam toward *Baird* which recorded seismic-wave travel times from the explosions of Max Silverman's charges. The rest of us dreamed up monkeyshines to keep from being bored out of our gourds while *Horizon* steamed along through those long-period South Pacific swells. Frank Callahan was the best seagoing cook I ever knew. *Horizon's* skipper had borrowed him from *E. W. Scripps* for this expedition, and those on *Baird* were envious of how well we ate on *Horizon*. One time, as our ship passed the rolling *Baird* about twenty yards to starboard at the half-way point in our hundred-mile shooting run, we greeted them with a large sign hung on a line strung between the upper deck and the A-frame aft. It read "Eat at Callahan's." Everyone from each ship was on deck when *Baird* was passed.

Usually we all just waved. This time there were boos and cheers as we passed close by. We enjoyed needling them, but what could we do for an encore?

As I recall, it was *Horizon's* chief scientist, Bill Menard, who came up with the scheme for our next passing close by the recording ship. Over the past weeks, we had converted empty TNT boxes into easy chairs. These we arranged on the open after-deck around the area where Max was arming and dropping charges. Three of the scientific party donned the long blonde wigs left over from our equator-crossing ceremony and somehow managed to anchor two large Samoan mangos under their tee shirts. We filled our glasses with bourbon-looking iced tea, had Callahan with a white napkin over his arm serving a tray full of "drinks," and we awaited *Baird's* reaction. As we approached, the record player that hung on bungee cords from the overhead in the lab was turned up to full volume. Bill Menard — well wigged and mangoed — sat in my lap. The two other "girls" walked among the revelers chatting and laughing. It was obviously a riotous "cocktail party." We paid no attention to the other ship as we passed it close by, ignoring them completely. At first there was a stunned silence from *Baird*; but as we began to pull away from them, they started to hoot and howl. We could still hear them as we headed for the other end of our seismic run. Our "cocktail party" had been great fun for all except Max who continued to drop his charges through it all.

R. J. Smith

A Christmas Carol?

It was a Christmas week in the early fifties and *Horizon* was in the South Pacific at Tonga Tavu, the island-capitol of a group called Tonga, the Friendly Isles.

Some kind and thoughtful folks at Scripps had packed presents for all hands, but things were extremely boring afloat and little better ashore.

Now the Queen, Ruler of Tonga, was in London at the coronation. However her all-band radio, now defunct, was at hand, as our captain had been asked if it might be repaired. Alan Jones and I volunteered and, thankfully, it was an easy fix.

Ashore to return the radio, we found the Queen's emissary to be a chauffeur in a Humber limousine, a slightly less elegant Rolls Royce. We were surprised when he asked us to check out the radio at its usual location in the Palace, but we were very pleased to do so. As we prepared to leave the palace, a comely young maiden asked us to please follow her as some special thanks were in order. And so, two bored but lucky seafarers rode in the chauffeured Humber, trod the royal halls, and shared tea and cookies with Her Highness, The Princess of Tonga, the Friendly Isles. Our cups ranneth over.

Famous or Infamous?

I was in Bahia, Baja California, overseeing the installation of certain optical and electronic equipment. Logistics were pretty well solved and installations started in two remote locations.

One day, I was accosted by two men who identified themselves as officials and asked to see my papers. They immediately pronounced them inadequate for my presence on the project and I was told to accompany them to Tijuana for a hearing. We arrived in Tijuana in the late evening and, after a heated discussion as to where to store me until the next day, I was placed in a room reserved for V.I.P.'s, elegant quarters but no less a jail.

And so, in a varied but otherwise undistinguished career, I have but one claim to fame. I am the only Scripps employee ever <u>jailed</u> <u>for</u> <u>working</u>!

The Good Doctor

The date was 1 June 1951 and I had just changed employers from Convair to the Marine Physical Laboratory of Scripps. Some financial hardship was to be expected as Convair paid weekly and Scripps paid monthly.

Came 1 July and I was told that since the contract under which I was working had not yet been approved I was not going to be paid. On the first of August the same story, although the signed contract was expected immediately. By now, I was very short of money and seriously considered reversing my employers again.

A few days later, word passed that Dr. Roger Revelle had advanced money from his personal funds to meet the payroll. Thanks to the good doctor, any doubts as to the wisdom of my choice of employers were dissolved and I continued with MPL for the most enjoyable 25 years of my life.

A Whale of a Story

The problem was a 36-foot landing craft located at Bahia on the western shore of the Gulf of California. This vessel was a U. S. Navy discard, loaded with dry rot and swamped.

So early one spring morning, two local fishermen and I boarded this vessel and started for Guaymas on the eastern shore of the Gulf, the nearest port with a repair facility. The nautical handbook lists the Gulf as having almost every hazard known to man, except icebergs, of course, but we decided to go anyhow.

The first day was uneventful and at dusk we grounded the LCVP on an unprotected beach. Using my modest Spanish and sand-drawings, I learned that the next night would be spent in a small, narrow, but protected inlet with an even narrower entrance way. The next evening as we slowly made our way in the entrance way, a great splashing from a large marine creature appeared off our bow.

"Ballena! Ballena!" shouted the crew and there we were, a cork in a bottle that had a whale inside it — a most excited and active whale indeed. We quickly beached our vessel on the port shore and shut down the engine. After more snorting and splashing, the whale decided to go for open waters. As it went past us I estimated its length at 30 feet and I could have touched it with a ten-foot pole.

Not all hazards in the Gulf of California are listed in the nautical handbook.

Kenneth S. Norris

Paradise in La Jolla

My memories of my time at Scripps Institution from 1950-1953 are probably glossed over by the salve of time, but it seems now like the most wonderful of all places to have spent time as a graduate student. There were, and don't hold me to accuracy about numbers, more professors and their ilk than students; something like 70:50.

It was clear that many of the professors didn't want to be bothered by teaching. But others, like Bob Arthur, were wonderful and taught for the love of it. My graduate colleagues and I finally talked our professor, Carl Hubbs, into giving a course, and learned to regret it. Here he was, the world's leading ichthyologist and we couldn't understand him. Mostly he growled. Once in a while, Francis Shepard in geology and Revelle, the director, were prevailed upon to stand up before us and that was pretty much a mistake too. Revelle was notable for talking equations to the board, so we spent time commenting on his shoes, which were huge. "He got them at a special shoe store for basketball players," we concluded. (17-1/2 was the size bruited about.) Shepard was a marvel. Nothing in his body seemed attached to anything else. He could leave his feet planted, facing the board, and turn right around and talk to us. (He was memorable too, for the series of artifacts collected off the Tijuana Beach outfall found in the geologic collections. I saw those lumpy, twisted, sandy things all lined up and painted with accession numbers.)

I had the old office of Francis Sumner, the famous, almost revered behaviorist, which had a lot of his old green glassware up on shelves, and a door that opened to the lawn by the beach. And me a graduate student — that tells you something. I built an "ichthyothermitaxitron" against one wall which was a temperature gradient for studying the reactions of fishes. I'd sit there at night watching, through a slit in a piece of fiberboard (so the fish wouldn't see me), the opaleye perch go back and forth. I was

plotting numbers one night, and in walked Mac [McKelvey], the night cop. "Ken, wanna see how steady I am?" He pulled out his nickel-plated .38, took the bullets out, put a half dollar on the barrel, and pulled off six shots with the coin still balanced there. "You're steady alright, Mac. You got time to help me with a toad experiment?" (I was a closet herpetologist and interested in the mating behavior of toads.) "Sure," Mac said, holstering his gun.

I turned off the gradient, turned on the red light (so the toads wouldn't see us) and put two toads, a very gravid female and a male, into a gravel-floored aquarium. "When I hold up my hand, you turn the air up to here," I explained. Mac held a wash bottle half full of water with a whistle attached. It trilled when the air went on. This simulated the mating call of my little desert toads amazingly well. "I'll take notes," I said.

We experimented for half an hour and when it was over, Mac said, "I played piano in a whore house in Sault St. Marie, but this is the first time I have whistled for a bunch of goddamn toads." Off he went, into the dark trees south of the library.

I earned my keep being Hubbs's fish pickler, over in the basement of the aquarium, up to my armpits in formaldehyde every day with no thought of cancer. I was constantly frantic because the collections raced ahead of my ability to deal with the outpourings of my professor's collection machine. I'd stop and wander over to join aquarium director Sam Hinton and his artist, Judy Horton (now Judy Munk), for a lunch of songs and sandwiches. Wonderful times. My whole family, and now their families, sing Sam's songs.

It was like that. The place was full of coffee hours — 23 my memory tells me. You could drop over for a cup at the botanist group if you wanted to, see what the bioluminescence group was up to, or over to the biochemists and find out how the collection of jellyfish was going (badly, actually: swimming out to get them resulted in

both multiple stings and sensitization, almost putting Big Jim, one of the grad students, in the hospital).

The director, Roger Revelle, was a benign presence over it all, mostly holding office hours after midnight. He and his idea man, John Isaacs, brought a special verve to the place. Revelle wanted us to embrace the entire ocean, and he succeeded. I was there at the very beginnings of the plate-tectonics revolution, at a time when Walter Munk and his colleagues were beginning to make the ocean a predictable physical entity. Revelle and his wonderful wife Ellen made us all, down to the guys in the garage, feel a part of it all. My wife Phyl (she the dark-haired gal who ran the spectrophotometer out in the hall of third floor Ritter) and I received a blanket from them for our wedding.

It was like that. Scripps was the only "teaching" institution in oceanography at the time, so I grew up in the science knowing most of the coming leaders in the field. My roomy at one time was Johnny Knauss, later of Sea Grant and a lot of other fame. He may tell you about us serving braised cormorant with pineapple sauce to two young women at our stash over a garage in south La Jolla. I should tell you that after that party, which was gracious even if the food wasn't all we hoped, the girls disappeared from our horizons of their own volition, only, I recall, to fall prey to the horse-meat-and-canned-peas set that John and I felt vastly superior to (now that I think back, we were actually pretty classy by comparison).

There were many great parties, sometimes dancing in the streets of La Jolla (you could do that and not get run over), playing of the double-belled euphonium under the Casa Mañana sign at 2 a.m., and many, many attempts across La Jolla at making home brew under beds in the precarious shacks that clung to the cliffs where many of the students lived. (I lived much of my time in a garage, with a hot plate, and skunks under the floor. Then I lived with my brother Bob, and then with John.)

Scripps was a place where we mingled with the greats of oceanography from around the world — saw them as they were. Professor Denis Fox was one who brought in such visitors. For a time, Ernest Baldwin, the world's greatest biochemist of that day, was his guest. Ernest had terrible eyes. His glasses looked as if he viewed through two coke bottle bottoms. While at Scripps he tried to obtain a driver's license, and for a time the coffee hours stirred with the latest reports of Ernest chasing pedestrians up onto the curb. There were dozens of others and we mingled at the seminar, which most of us attended out of interest and excitement.

That coffee-hour-seminar education and the chance to tinker far into the night in an environment awash with discovery were the precious ingredients of a very special education for me. I gained a broad view of my science and I came to know a wide range of people far and beyond my own field. I saw how they worked, what their anchors in scientific integrity were, and I saw that, much to my surprise, I could be one of them. It was very, very special.

John A. Knauss

The Night the Director Almost Went to Jail

It began with an idea for a party that Ken Norris and I decided to hold while graduate students in 1952 in our small apartment over a garage on Nautilus Street. Having come from the University of Michigan, I was concerned there was insufficient school spirit: no school sports, let alone mascots, school colors, etc. I posted signs all over SIO inviting everyone to an evening affair to improve school spirit. Ken thought that was a sophomoric idea, that things were just fine the way they were and plastered more signs around Scripps inviting everyone to a protest meeting — same night, same place. Guests arriving that evening declared which group they were joining and were given identifying badges.

As I recall, the concept was better than the execution. It was all rather dull until the wife of some student whose name I no longer recall volunteered that she had been a cheerleader at the University of Texas and suggested she teach my group the "Scripps Institution of Oceanography Locomotive," a cheer that starts slowly: S....C....R.... and picks up speed as it goes along. What we attempted to perfect that evening may have been the longest locomotive in college history. I know it took quite some time to get it right, and in the meantime we were subject to harassment by the other side.

Some time later we had the first of two visits from the police asking us to quiet down. They were more determined the second time, and Roger Revelle thought that Ken and I might not be up to the task of handling it. This was during the McCarthy era and university loyalty oaths, and Roger had firm opinions about the rights of the individual. He questioned the authority of the police to close an innocent student party. At some point in the discussion Roger challenged the police to show him such a law; the police suggested that he might wish to accompany them to the police station where they would. Roger said fine, and off they went.

At that point, Judy Horton, later to become Judy Munk, punched me in the ribs and said, "You'd better stick with him," which I did. When we reached the public sidewalk, the police informed us that we were under arrest for disturbing the peace, and when we got to La Jolla Shores Drive we turned south toward San Diego rather than north toward the La Jolla station, and I knew we were in trouble.

In retrospect, some forty years later, I believe we were in little danger of facing formal charges, but that was not my opinion as we headed toward San Diego that evening. I never asked Roger what he thought. The goal of the police was to stop the party. Somewhere in Mission Bay they pulled the car off to the side and asked if we thought we could. I said yes, and they turned the car around and took us back. There was little to be done. Ken had shut the place down completely by the time we returned.

Harris B. Stewart, Jr.

Oral Examination

Under the best of circumstances a Ph.D. candidate's oral examination is a highly stressful experience. Mine was no exception, but at the end of the first hour I did feel that I was doing an adequate job — not exceptional, but adequate — in responding to the many wide-ranging oceanographic questions being put to me by the faculty. One annoying aspect was that when I started a response which led my inquisitors to infer that I knew what I was talking about, they would cut me off short and move to a new topic. This went on until they found an area in which I felt less knowledgeable, and then they would bore in. Even so, I felt I was holding my own.

Then it happened. Orals at Scripps in those days were open and anyone could attend and even join in the questioning. The door to the seminar room opened and in marched five or six of the world's top biologists who had finished their own meeting early and came to join in the exam. They listened quietly for awhile and I started to relax. During a short lull between the faculty's questions, one of the newcomers with a clipped British accent asked me to discuss my feelings about the inheritance of acquired characteristics. That is, are those physical characteristics that are not inherited, but are acquired during an organism's lifetime, able to be inherited by that organism's offspring? I drew a total blank, and I was swept by a wave of sheer terror. However, I did recall having recently read of the work of the Soviet geneticist, Lysenko, and with a slight feeling of relief started to tell of his work. But I was cut short by, "Yes, we all read *Time* magazine last week, but do you believe in the inheritance of acquired characteristics?" Why I answered with a categorical "No," I will never know. Of course the next question came immediately: "Why?" and I knew I was in serious trouble. Why indeed, I wondered, and the wave of panic crested and drenched me again. I had dug myself a deep hole and saw no way out. I would flunk. No Ph.D. degree.

Suddenly, I had a moment of consummate brilliance that may occur only once or twice during one's lifetime, and mine could not have come at a more propitious moment. In a flash, I knew why I did not believe in the inheritance of acquired characteristics. I straightened up, drew a deep breath of relief and said, "For centuries the Jews have been practicing circumcision, but, so far as I know, no baby boy has been born without his full equipment." The room exploded in laughter, and I knew I was home free. I remember nothing of the rest of my orals, only that they kept me waiting out in the hall for twenty-five minutes before Professor Fred Phleger came out to report that I had passed and to congratulate me. But why, I asked, had they taken so long to decide? His answer: "Oh, we decided you had passed even before you had closed the door, and we were just swapping stories with those visiting biologists."

Colm O´ hEocha

Final Exam

After a few happy years in La Jolla, I took my final examination for the defense of my Ph.D. thesis on Saturday, June 4, 1955.

When I first arrived at Scripps I worked closely with Professor Denis L. Fox and, with other graduate students, assisted him in compiling the index of the book he was about to publish called *Biochromes*. Shortly thereafter Professor Francis T. Haxo joined Scripps from Johns Hopkins University. Because of his and my interest in algal pigments, I started a research project under his direction.

There were, of course, many hurdles to be jumped before the final examination. I remember one oral at which I was asked by Dr. Norris Rakestraw if I saw any analogy between a basic biochemical process and the phlogiston combustion theory of the nineteenth century. What he was looking for was the cytochrome electron transport system (removing electrons in respiration), a process effectively of biological combustion. I didn't associate the two but passed nevertheless.

The first to tell me of my success in the final examinations was Professor Ted Geissman of UCLA. "Welcome to the union," he said.

That evening I had a celebratory party in the house where I stayed on Tyrian Avenue. Roger Revelle, then director of Scripps, was there and around two o'clock in the morning, as he and I were finishing off the last bottle of Irish whiskey, Roger asked me what I was going to do now. I said I wasn't sure, but that I had decided to go back to Ireland. "What to do?" he asked. "I don't know," I said, "I will have to apply for whatever jobs are on offer." "Well," said Roger, "will you tell them one thing when you get back? Ireland is an inconsequential rock in the Eastern Atlantic, but it has a continental shelf around it which is more than five times its land mass. If the Irish knew what was in that shelf, and in the waters above it, their clout in the world would grow enormously."

I spent part of that summer at Woods Hole, and when I arrived home the Irish college of which my father was headmaster was celebrating the golden jubilee of its foundation in 1905. I was pressed into service at the lunch for guests, and among those I was serving was Eamonn de Valera, the Taoiseach, or prime minister, who was affectionately known as Dev. I was introduced to him as a recent graduate in oceanography of the University of California. I decided this was a golden opportunity to influence the most powerful man in the land, in the hope that there might be a suitable job down the line.

So I related to him the Roger Revelle story with great enthusiasm. Dev listened carefully and said, "Congratulations on your degree, young man. I hope you do well in your discipline — but don't ever go over the deep end about it." That was as much encouragement as I got for oceanography in Ireland in the mid-fifties! However, I was lucky to get a job lecturing in my minor subject, biological chemistry, at University College Galway.

In time we managed to get a Chair of Oceanography established at Galway. After becoming President of University College in 1975, I told the Roger Revelle story many times to potential benefactors, and eventually found somebody who responded: Dr. Tony Ryan, Chairman of Guiness Peat Aviation at Shannon. He donated more than $5 million to enable the college to build a Marine Science Institute in memory of his late father, Martin Ryan. The European Community provided a similar sum to equip the institute. The building was officially opened on 31 May 1993, and I hope that many Scripps graduates will visit it in the years ahead and make use of its fine facilities.

As a young graduate student six thousand miles away from home, I found Roger Revelle and his wife, Ellen, to be very kind, as were all the staff and colleagues at Scripps in the early 1950s. Ellen, being a Scripps, was very much part of the social scene in La Jolla and San Diego. Once or twice when Roger was at sea, Ellen was invited to a formal party and she needed an escort. Roger was very tall; as I was the tallest among the few graduate students at the time, she invited me to accompany her to some wonderful parties — because Roger's tuxedo fit me better than any other student!

They were great days and they led to a most satisfying career for me. With many thanks to all at Scripps, past and present.

Andreas B. Rechnitzer

Some Times You Don't Know Who Your Friends Might Be

In 1953 Adriano Buzzati-Traverso, a visiting professor, encouraged me to submit a travel application request to the SIO administration to present a scientific paper on partition paper chromatography to the International Zoological Congress in Copenhagen. During discussions with Professor Claude ZoBell, then-Director Roger Revelle suggested that ZoBell save the institution my travel expenses by reading my paper to the group. In my defense ZoBell said, "All of those people can read! They

need Andy there to answer questions." Revelle yielded and I attended the memorable Congress that was organized by Professor Anton Bruun, University of Copenhagen and leader of the *Galathea* Expedition. The noted Danish oceanographer chose to raise my status, at least to the Danish press, from graduate student to professor. He knew of my Danish heritage and apparently it was his desire to assist me in my first exposure to the international scientific community.

Rabbits and Biting Equipment

The first rabbit farm on the Scripps campus was established on the bluff edge in front of the campus home of Dr. Claude ZoBell. Here to support my thesis, I raised enough rabbits to develop the antibodies necessary to conduct serological tests to identify the molecular relationships among members of the sea-perch family. The SIO business manager informed me that my invoice for rabbit food was an inappropriate cost that could not be accepted for university reimbursement. I vigorously debated and explained that chemicals were purchased to support other graduate students. Why couldn't the rabbit blood be considered as a chemical supply item? He relented and reluctantly agreed to make all reimbursements for my rabbit-food purchases.

To produce antibodies I needed a supply of fresh fish blood serum from each species. In 1955 I selected a group of volunteer fish collectors: some from SIO and the balance from the local community of veteran spear fishermen; e.g., Bottom Scratchers organization members. A collecting expedition to Guadalupe Island was the dream of a lifetime for these spearfishing addicts. Their catch would have overfilled the storage holds of the *Paolina-T* had they speared all of the big fish they were prepared to find available in this pristine dive spot. They were appalled when I suggested that they collect three- to six-inch-long fish in return for their passage. This was clearly a blow to

their dignity and self esteem. I promised that they could have the afternoons for big fish if they produced an adequate supply of these little fellows for my thesis research.

Little did they realize how difficult the small-fish collecting would be and that their skills were not well suited for these shifty targets. I too was amazed to find that large schools of a specific species would vanish if one of their kind was speared. This complicated acquiring enough to meet my needs. We finally succeeded in our mission but I estimated when accounting for time, ship, and crew, that each cubic centimeter of serum from these fishes cost approximately $4,000 — much more than gold or platinum at the time!

Anchoring on the narrow shelf of the island in sixty feet of water for the night gave us a chance for one exploratory fun dive around the anchor before dark and dinner. A set of lower false teeth was found by one of the divers and brought to the surface. Stew was the cook's evening entree. After all divers had enjoyed their fill, the false teeth were surreptitiously dropped into the remaining bowl of stew. It was then ladled out with an exclamation for all to hear, including the cook, "Whose are these?" When the ladle was presented to the cook his embarrassment was obvious and he declared correctly, but not convincingly, "Not mine!"

Gunnar I. Roden

Arrival of a Graduate Student at Scripps in 1954

It was early morning on Independence Day of 1954. I had just come from Europe, crossing the Atlantic by ship and the U.S. continent by train. Arriving in San Diego at 7 a.m., I took a taxi to Scripps and found all the doors locked. I was bleary eyed from the long trip, had two suitcases and total assets of a crisp new five-dollar bill, but no coins to make a phone call. I put my suitcases under the palm tree and contemplated my next move. Should I sit in the hot sun and wait for somebody to come by or hide the suitcases somewhere and walk a mile to the Beach and Tennis Club to get

some change to call Dr. Norris Rakestraw? I decided on the former, not wishing to leave my few belongings to chance. By 11 a.m., I saw an old, somewhat beat-up reddish convertible come down the Scripps grade and stop in front of the Old Scripps Building. Out stepped a rather tanned, thin, and friendly man in shorts who asked me whether I was lost, to which I said no, I was just a graduate student fresh off the boat and train. It turned out that the kindly gentleman was Dr. Walter Munk, who had come down to the office to pick up a few papers he had forgotten. He took me straight to Dr. Rakestraw's house, who gave me a square meal, showed me La Jolla by car, and told me all I needed to know about Scripps. Dr. Rakestraw had other house guests this night with no room inside the house, so he rolled a cot out into his patio and let me sleep there with the stars twinkling overhead and his large shepherd dog at my side.

This is how my long career in oceanography was launched on Independence Day of 1954, and I am ever grateful to these fine gentlemen at the Scripps Institution of Oceanography.

Jacquelin N. Miller

Identifying Fish

In June of 1957 I was a brand new graduate student at Scripps and totally committed to my first real "science" job: a student research assistant to Carl Hubbs. I had only worked for Dr. Hubbs for a few weeks when he asked me to join a team of about fifteen researchers on a week-long field trip to Baja California. The purpose of the trip was three-fold: to excavate Indian middens for his paleotemperature work; to conduct a survey of the intertidal and nearshore marine fauna in the close proximity to the wreck of the oil tanker, *Tampico*, at kilometer post 181; and to collect fish from deep tide pools at various locations along the coast near Punta Banda and somewhere around the kilometer post 181. While I could probably write a book about the experiences of that trip...no sleep...cold, cold ocean...hours of digging and carrying buckets and

buckets of dirt for screening, excavating on the edge of a beach cliff...more buckets...no sleep...no sleep...etc...I'll confine my story to one incident that occurred during the deep tide pool fish-collecting operations.

First, let me set the stage. We left SIO at the crack of dawn and drove all day, finally reaching our first camp site about 10 p.m. It took another hour or so to fix dinner, eat, and set up camp. We finally crawled into our sleeping bags around midnight. At 2 a.m. I was awakened by a vigorous kick to my side and Hubbs yelling, "Everybody up...low tide." Art Flechsig and Connie Limbaugh had already started getting the giant floodlight set up around the biggest, deepest tide pool I had ever seen. All of us then staggered down to the water's edge. Meanwhile, Hubbs had mixed the rotenone solution and proceeded to dump it into the pool. In just a few seconds, fish started popping up, gasping, from every corner. We all sprang into action, scooping and grabbing fish of all sizes and shapes and tossing them into buckets and bags while Mrs. Hubbs took care of the labels and field notes. All the time Dr. Hubbs was yelling at first one, then another of us to grab this or that...always with an expletive accompanying phrases directed either at the fish, or us, or Mrs. Hubbs. Eventually, (that is, in a few minutes!) Hubbs became concerned that we weren't able to reach the center of the pool with our nets and that we might miss some. So, without a second thought, he climbed into the fifty-five-degree, black, milky, shoulder-deep water and began walking around kicking fish out from ledges near the bottom and reaching under rocks and into crevices searching out any unwary stragglers. This reaching and prying included complete submergence at times in the milky white rotenone solution in an otherwise pitch-black pool. I watched as he reached his arm into one hole clear up to his shoulder. Suddenly, he let out a yell and jerked his arm out shaking it around with the epithet, "G.. D.. SOB... I think there's an eel in that hole!!!" He instantly reached his arm back in the same hole, so far that only his mouth was out of the water, and came out with a two-foot moray. In a loud and ringing voice, he announced to the world, "By God, it was a

moray!!!" as he dumped the slithery creature into a waiting bottle of formalin. Much, much later, after all the work was completed and the tide had come in to flush the pool, he finally agreed to let Mrs. Hubbs pour some iodine on his bitten hand.

This was the beginning of a very long week. Thanks to the tide, we were able to sleep until 3 a.m. the next day, 4 a.m. the next, and so on. Days were spent digging Indian middens and conducting coastal surveys and collections from about 6 a.m. to early evening. In the evening (when we couldn't see to do the other work) we would move camp so we would be ready for a new set of tide pools each morning. Mrs. Hubbs served as Hubbs's right-hand man, labeled and kept field notes, and did all the cooking for the whole crew. This was my first introduction to Carl and Laura Hubbs, two of the most indefatigable people I have ever met. Remarkable personalities over and above their scientific accomplishments.

Edward Brinton

All Islands are Mysterious

This account begins with our approach to the remote island of Rapa, far south of Tahiti, during Downwind Expedition. It was 1958 on the original *Horizon*. Below decks in the crowded quarters shared by most aboard, a sailor in timely fashion produced a yellowed tabloid paper that reported, "The population of the Isle of Rapa, an isolated volcanic peak in the South Pacific, is entirely of women." There was a photograph of a dugout canoe peopled by a row of scarcely clad neo-Amazonian paddlers. We were headed southward past Rapa, and this was a two-ship expedition. *Baird* had gone ahead, and somehow or other the crew aboard *Horizon* concluded that we should make a stealthy detour to the Isle of Rapa.

So we steamed up toward the charted anchorage at dawn. Staid professor Norris Rakestraw, then engaged in earliest studies of dissolved CO_2, and I (Ed Brinton,

plankton catcher) chanced to be at the bow. Suddenly we could see the coral bottom — it was right there. To the port side was this slender little bent red pipe barely sticking out of the water. The captain on the bridge, Marv Hopkins, already a distinguished achiever in running ships aground at low tide, probably could not have seen this tiny artifact. Rakestraw and I looked at each other. If this was a channel marker it should have been to starboard. Within moments there were ominous scraping sounds from below, and then the ship came to rest.

Horizon was "drydocked at Rapa," Hopkins radioed in a flippant frenzy to *Baird*, already some 100 or so miles to the south. Nobody knew if there was any tidal flux (later found to be about three inches), which might have allowed us to refloat. George Hohnhaus, the legendary tower of power in the geophysical group, jumped over the side with a great cable and wrapped it around a huge coral head several hundred feet away in the lagoon. The ship's winch was slowly started in an effort to free the ship. The coral head popped free. We mulled and waited. No dugout canoes were to be seen. A few habitations were specks in the distance. It was time for cool reflective thinking, so we launched a boat and went ashore.

One bunch of thinkers, Peter Williams, Chuck Worrall, Jim Costello, and I, headed for the steep green highlands. Might there be a guru at the summit? Along the way, we felt relieved to meet clusters of playful, wide-eyed children, clearly well cared for. We distributed balloons. Some of the kids followed us. In those days, we had found balloons to be passports to unqualified social acceptance in such remote places. But the occasional thatched huts seemed vacant. Farther along we could see that there <u>were</u> grown people, indeed women, appearing shyly at doorways, rarely a man. We ventured to talk. Faces seemed strangely solemn, even sad. And then we noticed the deformed hands. Rapa was a leper colony.

Among the small scattered islands of the Society group it was usual for enterprising young males to migrate to towns on more populous islands for jobs and,

perhaps, social emancipation. We learned that a ship from Tahiti would visit Rapa two or three times a year. Now as hours passed, we dispensed our remaining tokens — tins of food, bars of soap, more balloons. Then word reached us: the ship was afloat. Most of our fresh water was jettisoned. No showers for weeks to come.

As *Horizon* slipped out of the lagoon, red pipe to port at the reef, *Baird* appeared in the distance. Scarcely comprehending what was going on, the crew had been obliged to reverse course. A chill in inter-ship communications persisted for days to come. But after difficult joint stations down into the truly roaring '40s, by the time we reached Islas Juan Fernandez with hills to climb, balloons, and now, Chilean wine, memories faded.

Edward Brinton

(taped and transcribed by Elizabeth Venrick)

Jim Faughn and the Cambodian Gunboat

In 1959 and 1960, Scripps was involved with a project in the South China Sea and the Gulf of Thailand called the Naga Expedition. It was supported by what is now called AID (Agency for International Development) under the State Department. Then it was called USOM (United States Overseas Mission). It was a foreign-aid project in oceanography with South Vietnam and mainly Thailand. This was a project that was worked out by three people: Nai Boon, the director of fisheries research in Bangkok; Roger Revelle, the director of Scripps at that time; and a famous Danish oceanographer named Anton Bruun. These three were all present at an international meeting in Bangkok involving many of the great minds of fisheries biology. One evening after a lively party at the Danish embassy they went boating on a nearby pond; rumor has it that the boat turned over and they were left standing on the bottom of this pond.

Anyway they waded ashore, and during the course of the evening they developed a plan to do fisheries oceanography in the region if support could be found, and if the U.S. would provide the ship. Subsequently, they successfully petitioned the State Department for money, and Naga Expedition (named after a Buddhist sea-serpent deity) was created.

Revelle was one of the really great organizers. He was a guy with vision and he liked to get big, complicated projects going. This was an example of the kind of thing that he could pull off. The project wasn't clearly defined but the notion was to stimulate interaction among U.S. oceanographers, particularly people who were interested in fisheries biology, with scientists from developing countries like Thailand and South Vietnam.

The U.S. sent a ship, *Stranger*, to Bangkok for a period of a year and a half. The officers were from Scripps but the crew was Thai. Scientists participated from Thailand, South Vietnam, and the United States.

I want to start this story with a man named Jim Faughn because he was the critical person here. He replaced Anton Bruun as project director of Naga. Jim was a most remarkable person: a quiet, reflective guy, and he knew what the hell was going on. He had worked in all sorts of places from China to Tasmania; he was an engineer; he was a captain; he was a diplomat. He had been Scripps's marine superintendent, before being appointed project director.

The first time I knew that Jim Faughn had acute intuition was on one of the Naga cruises. We were sailing down the South China Sea, in the dead of night, in the height of the southeast monsoon. Jim was along as the project director, not the captain of the ship. He was a sort of a ride-along guy, and Frank Miller, another Scripps captain, was in charge of the ship. It was the middle of the night, dead dark, very few people still awake although people were sleeping all over the deck because of the warm temperatures. Suddenly Jim Faughn came on deck from below and said, "I think we

are closing in on an island." He went up on the bridge. The ship immediately changed course and we barely averted running aground on some islands in the middle of the South China Sea that our dead-reckoning course had been set to avoid. We had no radar; he just knew about them.

Anyhow, the incident of the Cambodian gunboat occurred at the end of this same cruise, which was the final cruise of the whole expedition. It's important to point out that the Thais and the Cambodians during this period of time, and in most years in recent history, were not friendly. Although the Naga Project had been in touch with Cambodian groups during the year preceding and there had been reasonably pleasant communications back and forth, Cambodia had never joined the project because the Thais and Cambodians distrusted each other.

We were finishing up a grid of stations in the Gulf of Thailand. We had come around the southern tip of South Vietnam heading northward back to Bangkok, zigzagging back and forth, Cambodia to the east of us and Thailand to the west and north of us. Early one morning as we approached the coast of Cambodia, sampling plankton, taking hydrographic casts, and doing our usual stations, an ancient Cambodian landing craft-type ship approached us. It was armed, and the young soldiers appeared concerned about what we were doing in what they obviously considered Cambodian waters. The gunboat pulled alongside *Stranger* with two cannons twelve feet away pointing at us, and with bandolier-draped soldiers behind the guns who were not returning our smiles. It was *Terry and the Pirates* in the flesh.

The dapper Cambodian officer in charge leapt aboard and gestured to us. Cambodians speak French (and Cambodian) but they don't speak English, and no one on our ship spoke a word of French. I had studied a year or two of French early in my academic career and, on the basis of this, I was appointed translator, but any attempt of mine to speak French turned immediately to Mexican. Bill Clampett claims that my first words "of French" to the Cambodian officer were, "Como se llama?" Anyhow, I

couldn't get a word across to this guy. Well, this lieutenant who was in charge of the Cambodian gunboat was determined to prove that we were engaged in illegal activities. He picked up the jar of plankton that we had collected and (I think) said, "What is this? What is this thing swimming around here?" And I said, "That's a pteropod." "And what's this?" and I said, "Larval fish," thinking his scientific curiosity was awakening. "Aahh!! Fish!" he replied, jubilant that he had found proof that we were illegally fishing in Cambodian waters.

Stranger was ordered to follow them into the nearest Cambodian port, some twenty miles down the coast. Captain Faughn and Captain Miller were very concerned about what was happening, primarily because of the status of the Thai crew. It could have been very easy for the Cambodians to have shot the Thai crew, interned them, or done anything they wanted to because the countries were virtually at war.

So, with Cambodian guns directed at us, we headed south at four or five knots, the maximum speed of this little gunboat.

We later learned that Jim Faughn, with Captain Miller's permission, assumed control of the bridge. We followed the gunboat southward for an hour or two and as we proceeded, *Stranger* gradually took a course slightly apart from that of the gunboat, moving slowly, slowly, farther and farther away from it. Up on the bridge, Faughn calculated the maximum range of the Cambodian guns, and at that exact point, before the Cambodians realized what we were up to, *Stranger*, with a maximum speed of thirteen knots, took a hard right turn. Those of us on deck were nearly thrown off our feet as the ship headed full speed westward into the center of the Gulf of Thailand. The gunboat never fired. We never even knew if they had ammunition.

When we arrived back in Bangkok, our ambassador showed us diplomatic protests from the Cambodian government that we had violated their waters. Apparently, the project was chastised severely by our State Department for our evasive actions, but this was of minor consequence considering the alternatives. The way it

worked out was, I think, attributable to the cool, common sense, and knowledgeable thinking of Jim Faughn.

C. S. Wong

My Early Days at Scripps

My earliest days with Scripps were in the fall of 1957 when I was sent by the University of Hong Kong to a UNESCO training course in marine sciences sponsored jointly by SIO and the Zoological Museum of Copenhagen. At the Nhatrang Oceanographic Institute in the then South Vietnam, a few dozen young scientists from southeast Asia including Bui Thi Lang (another SIO graduate) and me, were enchanted by the Scripps spirit — that marine science was fun (of course, funds as well). Warren Wooster and Doug Inman taught us the first lessons of science: science was doing things right, not performing magic with sophisticated instruments. The institute was deserted by the French. We distilled water using very strange looking make-shift cooking utensils, prepared starch for our oxygen titration from first principle, and dug up silted tidal gauges left by the French on the scenic coast. My first SIO oceanographic expedition was on a leaking wooden boat. A young boy emerged from the engine room every fifteen minutes and bailed out a bucket of dirty water with a worried look on his face.

My second SIO expedition was more formal. Suddenly one day, a tall, clumsy, kindly looking stranger showed up in our dining hall. Four of us were picked to go with this stranger on a one-day trip on board the Scripps's yacht, *Stranger*, despite a tropical hurricane brewing offshore. We had to pack and go immediately because this

stranger was Roger Revelle, who had flown in all the way from La Jolla to be with a few young southeast Asian scientists on the NAGA expedition. Revelle was scheduled to return to Washington, D.C. one day later to have an important meeting with President Kennedy. While at sea, the wind intensified. The yacht was pitching and rolling like a cork in a full-blown tropical typhoon. All of us ended up with black hands like the Mafia, because the silver nitrate solution bled profusely from the burette for salinity titration. Suddenly, during a violent pitch, both Roger and the gas cylinders came loose simultaneously. For a moment we mentally questioned which to salvage first. We did manage to hang onto both flying objects, and prevent them from making gaping holes in the second-hand Scripps yacht. Then, we saw a smile on the face of Captain James Faughn, who was looking really worried ten seconds earlier. After days, the typhoon finally subsided. Roger hurried to a waiting helicopter and his trip back to Washington, D.C. Of course, Roger had missed his important meeting with the President, who must have known the Revelle time factor better than the Revelle buffering factor, since Roger still kept his job as science advisor to the President. We had interesting conversations with him during the unexpected stormy maroon, from his views on American involvement in southeast Asia to what young scientists should do with themselves. His prediction on the outcome was quite accurate — that the U. S. would fight a war and get out with southeast Asia stabilized after a couple of decades. His prediction on the outcome of me was accurate too, but I intended to keep that a secret. However, he did convince me that oceanography was an exciting, albeit hazardous career.

In February of 1962, I finally made my way to the Department of Oceanography at SIO as a graduate student on a UNESCO fellowship. However, since I was not supported by a professor's research grant, nobody noticed that I was roaming with complete freedom taking courses that Roger said would enrich my career. For almost three years, I greedily wandered through all kinds of graduate courses without being taken to the court of a qualifying exam. The plot was foiled by Doug Inman, who

quickly arrested me and jailed me on a Ph.D. thesis track, after hide-and-seek in the laboratories of Jimmy Chow, Ed Goldberg, John Strickland, and the wooden hut of T-28 of Warren Wooster and Klaus Wyrtki.

The Scripps operation has been run with perfect timing and efficiency, both in the laboratory and on ships. As a graduate student, I was both fascinated and stung by the clock-like cycles. I did my thesis under Charles Keeling, well known for his outstanding CO_2 work based on the unparalleled precise measurements in his laboratory. When I first arrived at SIO, Dave was away on sabbatical. His laboratory was running at preset clockwork precision. Norris Rakestraw, dean of graduate study at the time, asked me to modify the Van Slyke CO_2 apparatus for some more accurate CO_2 measurements in Keeling's laboratory in Ritter Hall. For months, I was getting erroneous results despite doing everything possible. One day, I was in the laboratory at 8 a.m. instead of the usual 10:30 a.m. after my classes. The Pandora box was open, literally. There, a delivery man came into the lab precisely at 8 a.m., opened up the very box I was sitting on doing my CO_2 experiment, dropped in two blocks of dry ice, closed the Pandora box and walked away. At 8:15 a.m., Tom Harris and Lee Waterman walked in, chiselled out chunks of dry ice, crushed them and mixed them into dry ice/alcohol slurry, took the flasks to another lab, and closed the Pandora box. At 8:30 a.m. the Keeling time-series machine was in full motion grinding out the Mauna Loa CO_2 numbers, leaving not a trace of the preparation activity behind.

The human activities on SIO ships were equally precise. In 1967, on *Thomas Washington* during an EASTROPAC expedition, I was really excited on observing a 6 p.m. peak in nitrate for the tropical Pacific Ocean, and considered if I should change my thesis topic. Then, one day, I changed my time for supper in order to finish my auto-analyzer work on nitrate. There, I saw a snow-white figure who just emerged from the engine room to admire my auto-analyzer. With a cigar dangling between his teeth, he huffed and puffed the aroma of burnt nicotine above the machine. Immediately, my

nitrate peaked at 6 p.m. and so disappeared my dream of a new discovery. He worked night shifts and slept during daytime, never saw the bright sun but followed a routine of inspecting oceanographic measuring instruments precisely at 6 p.m. before going back to his under world of noisy engines. Oceanography has been and will be fun at Scripps. Why graduate and leave? I wonder.

Bui Thi Lang

SIO and Vietnam

The regional training course in Marine Sciences was organized by UNESCO in cooperation with SIO at Nhatrang, Vietnam from August to December, 1959. It gathered twenty-one participants from southeast Asia for an introduction to oceanography (Dr. Warren S. Wooster) and to beach processes (Dr. Douglas L. Inman). There we met Dr. Roger Revelle and visited *Stranger* in its mission to the Naga Expedition 1959-61, surveying the marine biota of the South China Sea and the Gulf of Thailand.

The exploration of the sea was fascinating, promising sustainable development of our marine living resources; the American scientists changed my opinion about U.S. people, so I applied for graduate training at SIO with a grant from U.S. AID Saigon.

From September 1960 to November 1964, I studied at the Marine Invertebrate Department. Under Professor Martin W. Johnson's guidance, I made good use of SIO plankton collections to write a thesis on the selective distribution of one copepod family (Eucalanidae) to every water mass of the Pacific Ocean.

I came back home with the period of U.S. troop landing! I tried my best to serve my country and wished that my professors and friends, so dear to me, would never get involved in this ugly war; and they did not.

Now this is a good time to resume our relation for the reconstruction of Viet Nam and the protection of our marine environment.

Congratulations to SIO for its 90th anniversary.

John A. Knauss

Roger Revelle's 50th Birthday Party

There are many examples of the Scripps community working together for a good cause, but I expect few were more fun than Roger Revelle's 50th birthday party. It was Lynne's idea. The invitation read:

> When the *Cannery Row* friends of Doc decided to give him a party, there was no need for invitations — everyone just knew and everyone showed up. Unfortunately, Scripps is a bigger place than Steinbeck's Monterey and we got cold feet about being so haphazard in letting all of you know that we think it would be a good idea if all of you just decided to give Roger a party on his 50th birthday, March 7, [1959].
>
> "AND SINCE IT WAS TO BE A BIRTHDAY PARTY THERE WERE PRESENTS TO BE CONSIDERED." — Presents we believe are in order — or at least something you yourself found or caught, but please nothing so big it can't be gotten into his station wagon. (If you haven't read *Cannery Row* in the last few years, you might glance at Chapter 27 for inspiration.)
>
> "THE RESULTING PUNCH. . . .WAS ALWAYS INTERESTING AND SOMETIMES SURPRISING." Liquor is also in order and in best Monterey tradition, we plan to dump everything you bring into one punch bowl. Rum, gin, liqueurs, brandy, soda, ginger ale, pineapple and grapefruit juice etc. are all welcome and all will be added at

random. Because it hurts to see Scotch treated this way, please leave yours at home.

"THE CONSPIRACY GREW AND THERE WERE ENDLESS VISITS BACK AND FORTH." Suggestions are in order. This is your party. Roger has a 50th birthday only once and this is his last year as Director of Scripps.

One of the difficulties with the party the boys gave in Monterey was that Doc heard about it. We would like to keep this a secret from Roger.

Lynne and John Knauss

Everyone rose to the occasion through love and respect for Roger. It was a true community effort, and miraculously we kept it a secret.

Perhaps the most inspired idea was the parade. Roger was to have dinner with his daughter and family a few hundred yards down the street from our home in Scripps Estates Associates. When he was fetched from the dinner table, he was hoisted aboard a palanquin, an idea of Judy Munk and constructed by Bill Menard. There were banners made by Helen Raitt and others, a number of musical instruments, and the whole menage led by a circus calliope discovered by George Shor and played by Charles David Keeling.

As the 200 or so guests trooped into our house, Fred Spiess stood guard to insure some control over what went into the punch bowl. The gifts were inspired. The most anticipated arrived late in a large refrigerator crate: a well-known stripper from San Diego, "Texas Bobby Roberts, six-foot-four of grace and loveliness," a gift from Bill Van Dorn, Leonard Liebermann, and Harmon Craig.

The community effort continued into the next morning as Sally Spiess led a contingent into our house to help clean up.

Richard H. Rosenblatt

The Great Whalebone Caper

One Sunday morning in June 1959, Carl Hubbs called me at home and asked if I would come out to Scripps and help dissect a Cuvier's beaked whale (*Xiphias cavirostris*) that had been beached on La Jolla Shores. He had arranged to have the fifteen-foot carcass delivered to the area near the radio station above Seaweed Canyon. When I arrived at the site I found Carl, graduate students Al Ebeling, Jim Kittredge, Mike Pilsen, and Art Kelly, my assistant Dick Krejso, and as a bonus, University of Michigan professor (and former Hubbs student and collaborator) Karl Lagler, and son. Large knives were distributed and we went to work, the goal being to prepare a skeleton.

This took all day. At one point, Hubbs declared that the specimen was a female and directed his student Art Kelly to look for a possible embryo. I still remember the look of triumph on Art's face when he withdrew his bloody arm from the body cavity and triumphantly displayed a large testis for our admiration.

The flesh and blubber were buried in a pit, leaving a pile of bones with considerable flesh attached. What to do with them? Hubbs decided to let bacteria do the cleaning job. At that time, there was on old-fashioned (narrow and deep) sea lion pool near the north end of the new Scripps Building, where the stairs led down to the beach. The bones were placed in the pool, suspended from ropes and the water turned on. Thus the bacteria would decompose the flesh, but the running water would carry away the products and provide oxygen, preventing growth of the anaerobic bacteria of putrefaction.

All went well until I returned to the laboratory after the long Fourth of July weekend. At 8 a.m., I got a phone call from Priscilla Duffield, Roger Revelle's secretary, demanding to know what was causing the terrible smell permeating the new Scripps Building. Not only was it nauseating the inhabitants, it had almost caused the demise of Nobel Prize winner Harold Urey.

Urey had detected the smell the previous night, and in investigating the source, had walked through a glass door, seriously cutting his forehead. I'm not sure why she called me, but as a junior research biologist, the lowest of the low, I decided see-no-evil, hear-no-evil, speak-no-evil was the best policy. I said that I had no idea who or what was responsible, and suggested a call to the Public Health Department was in order.

It did not take too long for Professor Hubbs to be identified as the guilty party. It really wasn't Hubbs's fault. Everything had been going according to plan when, just before the holiday, a groundsman heard water running in the sea lion pool. Knowing there were no animals in residence, he thoughtfully turned off the water. This allowed the bacteria to proliferate and turn the pool into a wonderful noxious broth. However, the director was in no mood to listen to explanations. Revelle ordered Hubbs to dispose of the bones, preferably by taking them with him on his way out of town.

Hubbs was a long-time (and influential) member of the Board of Trustees of the San Diego Natural History Museum and he persuaded its director to dispatch the museum's preparator, Armin Schmitt, to pick up the bones. Armin arrived in a panel truck with a young helper; however, they balked at entering the now-drained pool to retrieve the noisome prizes. Hubbs finally succeeded in cajoling a couple of his helpers (I stayed discreetly at the rear of the crowd that had gathered upwind) to enter the pool and transfer the bones to the truck. They were taken to the museum (not without a couple of stops to relieve stomachs suddenly overloaded) where Armin finished the cleaning job.

A beautiful gleaming skeleton of the Cuvier's beaked whale still hangs in the exhibit hall of the Natural History Museum. For years there was also a photograph on a pillar of the whale-wrecking crew, standing behind the specimen, surrounded by springtime flowers. That picture is now gone, as are too many participants in this story.

Betty Shor

Ship Reports

In the 1950s and 1960s husbands went to sea, and wives gritted their teeth, kept the home fires burning, founded Oceanids, and sometimes wondered what all the excitement was about. The tenuous line to the ships at sea was that little radio station WWD, tended by "Nick" Carter, to send and receive official messages. The station had been established for the Marine Life Research program in 1948, and was used on the far-ranging Midpac Expedition in 1950, because Roger Revelle wanted to keep in touch with home base. Of the three oceanographic institutions, SIO was the only one that had daily communication to and from its ships.

Whenever George was at sea, I phoned Nick often, and he would read me the daily ship reports of position and weather, tell me whether the research work seemed to be going well, or if there might be problems with equipment. He admitted his concern when at times a distant ship did not check in with its daily report, but sometimes it could be reached only at odd hours, or there was an interference barrier, and at least once there was a radio operator suffering from a port-stop hangover.

When *Argo* first went to the Indian Ocean in 1960, we knew that WWD could not always reach that distance. But George had told me not to worry, because there was a ham radio operator aboard, and he would be able to get in touch with me sometimes that way. I waited and waited and wondered, as the ship got farther away. The phone call came in the late, late hours of the night, "Will you accept a collect call from Fort Leavenworth, Kansas?" It took the faith of a sailor's wife to say "Yes, of course," even when I knew that the place was a military prison. One of the prison guards was a ham operator outside of work hours, and he had picked up the distant signal, which he relayed as a phone-patch conversation. Such conversations aren't very private, but from that time and distance it was a special treat to hear George's voice.

Because I really did want to know how things were going aboard ship, I asked if something could be set up so that brief messages could be sent back to the families by way of WWD. So, for some years during the latter 1950s the weekly messages were mailed to family members designated by the scientific party and the crew, at least on those expeditions led by George Shor. Eventually, these became the weekly reports of the *SIO LOG* — just because I wanted to know how the work was going at sea and I thought that others might also care.

Don Miller

The Good Old Days

I started working at SIO/IGPP in November of 1960. At that time most of IGPP was located in Sverdrup Hall, which had just been completed, and just a few of the rooms were occupied. The city street ran immediately to the south of Sverdrup and parking was available just outside one's window. In fact, one could park anywhere on campus and not have to pay for the privilege. About a year later, SIO decided to construct the park which is now to the southwest of Sverdrup. At the same time a small parking lot was constructed (which still exists) and we were informed that a parking fee would be in order to pay for the paving of the lot. Well, the fee is still there and many times bigger (that must have been a very expensive lot to pave). Also, as a part of that park construction and movement of the street, a house, which was on the southeast corner of the street, had to be moved. The house was moved and relocated to the south of the new parking lot and was named "Surfside," and it is still in use.

After I worked here for awhile I started to eat my lunch while seated on the small bluff overlooking the ocean and beach. What I became aware of was that there was a certain group of employees who would go bodysurfing every day, winter or summer.

Some of that group which I remember included Ted Foster, Gaylord Miller, Stu Smith, George Matson, Jim Maggert, and later, George Sharman. Finally, I could stand it no longer and slowly taught myself to swim and to develop the technique to get through the waves and become an accomplished bodysurfer.

There were board surfers (longboards) then but no belly boards except for a device which Gaylord developed and used exclusively. It looked like a small present-day surfboard but it also had a small hydrofoil which extended about eighteen inches below the underside of the board. On big waves Gaylord's device would lift his entire 200-pound-plus body and board out of the water and he would be screaming down the face of the biggest of waves with only his "skeg" in the water.

Some of that group were so avid that once, on a day of waves which were so big that no one could swim out, three of them went out to the end of the old pier and jumped in, surfed for forty minutes or so, then one couldn't get back in because of exhaustion. One got in, called the lifeguard, and the rescue helicopter pulled the other two out. They went back out the next day. Lately, I see Stu Smith out there now and then. Is there a new group of bodysurfers or are they all up on boards now?

Madeleine Miller Mahnken

UCSD Ground-Breaking Ceremony

The splendid faculty filed along in cap and gown and took assigned seats that morning, May 18, 1961, on an empty, windswept corner on a hill. Looking along the line of feet of the faculty greats, one could see brown shoes with white socks; tan shoes with red socks; no socks; a few black shoes and then sandals.

The speaker's platform resounded with various renditions of why we needed and would have the University of California and where.

This ground-breaking ceremony stands out in my memory with a highlight provided by Governor Pat Brown, as he lifted the gilded shovel he was heard to say, "It's great to be in Orange County again!"

John S. Bradshaw

What a Difference a Word Can Make!

Back in June of 1961, Dr. Fred Phleger offered Joe Cobarrubias and me the adventure of a lifetime. He suggested that we take the Marine Geology Department's old four-wheel-drive army weapons-carrier on an extended field trip to Black Warrior Lagoon halfway down the Baja California peninsula.

This was in the days before the Baja Highway as we know it today was even thought of. We jumped at the chance and soon were on our way south loaded with heavy drilling pipes and equipment for collecting deep-soil samples from the marsh and beach areas. The weapons-carrier had two twelve-volt batteries located under the seats that apparently were not as secure as we had thought. The road below El Rosario soon disintegrated into either piles of rocks or treacherous sand. Somewhere north of Punta Prieta the continuous bumping caused the batteries to short out on the underside of the seats and we soon came to a stop. Fortunately, the truck was equipped with a hand crank and we were able somehow to limp into town. The two batteries were beyond repair and we decided we would try to buy new ones at a local store.

Joe, being of Mexican descent, spoke in what I thought to be flawless Spanish to the man behind the counter. He described the dimensions of the battery as fourteen inches long, ten inches wide, and ten inches deep. The man looked perplexed at first and then broke into laughter. For what Joe had translated into Spanish was fourteen pulgas by ten pulgas by ten pulgas. In other words, fourteen fleas long, ten fleas wide, and ten fleas deep. He should have said fourteen pulgadas by ten pulgadas by ten pulgadas as the Spanish word for inch is pulgada. Close, but what a difference!

Elizabeth Venrick

Oceanography and Women

I entered Scripps as a graduate student in 1962. My undergraduate advisor warned that oceanography was for beach bums and surfers and that teaching was a more acceptable profession for a woman. But I was attracted to the interdisciplinary nature of biological oceanography and by a fellow who lived in La Jolla, and so I ignored my advisor's advice.

True, women in oceanography were rather novel at that time. I can recall three who were ahead of me as students at Scripps, and perhaps another who was also admitted in 1962. There were no women on the faculty and very few (I can count five) on the research staff.

I was the first woman admitted into the Biological Oceanography curricular group. Years later, I learned that E. W. Fager, who was to become my major advisor, seriously consulted with the other BO students about whether they thought a woman colleague would be "OK." It seems that Fager, who was one of the fairest and most rational people I have ever known, was truly concerned, not about a woman's scientific ability, but about her ability to cope emotionally with the pressures of graduate work. (I'm embarrassed to say that I came close to justifying those concerns during my departmental exam.) All this discussion started much speculation about me and culminated in a rumor that I was six feet three inches tall! In spite of (or, perhaps, because of) the cautious way I was accepted as a student, Scripps faculty, staff, and students were unvaryingly supportive. I recall a lot of affectionate teasing.

In the early '60s, women rarely went to sea. Wives occasionally accompanied husbands on expeditions, and, about the time I arrived, tradition was being tested by women scientists and technicians in pairs. Still, in 1964, when I was scheduled for the first leg of Ursa Major Expedition as the only woman on board the ship, there was a

great deal of anxiety. John Isaacs proposed to send his high-school-aged daughter to accompany me, which I found silly, and perhaps a bit insulting; I was surely too mature to be chaperoned by a high school student. It wasn't until we sailed that I knew for sure that he had relented. (Sorry, Caroline. You missed a wonderful trip.)

The crew of *Alexander Agassiz* were primarily retired Navy with a sprinkling of ex-tuna fishermen. They certainly did not believe that women belonged at sea, but they were not so much hostile as ill-at-ease. Should I accidentally overhear a "hell" or a "damn," profuse apologies followed. But time passed and I kept busy (did I ever!). I didn't fall overboard, and, more importantly, I didn't get seasick. When I learned to play cribbage, my oceanographic career seemed secure.

At the end of my third cruise, I received a priceless backhanded compliment from the chief engineer. We were standing at the rail as the ship came into port, when he — rather hesitatingly — acknowledged that he didn't believe in women at sea, and he never would, but, if there had to be women at sea, then he supposed I was OK — cause I "kept out of the way." At that time, it would have been hard to imagine that the next decade would see not only women chief scientists, but the first all-woman expedition (led, I recall, by then graduate student Martha Evans, under the auspices of John Isaacs). And what would the Chief have thought, had he foreseen not only women on the bridge, but women in the engine room?

Long Hours at Sea

For reasons which I have never understood, long hours at sea tend to stimulate artistic efforts. The worse the conditions, the more voluminous the efforts. There've been cartoons and instrument decorations. There've been songs. (I especially remember "The Deep-down, Oligotrophic, Subcompensation-depth Blues" and "Don't Tell My Gran'ma I'm an Oceanographer, She Thinks I'm Playing Piano in a Cat House" — both by graduate student Harry Lyons.) But mostly, there were poems. My favorite is the creation of Mike Mullin, then the chief scientist on a cruise called

Dramamine II, which demonstrated that *Alpha Helix* was a better floating laboratory than open ocean research vessel.

Oh standard station, pride of science
Boon to oceanographer's self-reliance
Mother Nature's forced compliance
Borders upon rape.

The sea which makes our feet get damp'll
Yield to us another sample
Though 20s plenty and 50s ample
To make contours take shape.

The method hypothetico-deductive
For classroom use is quite instructive
But Bill says it is too seductive
Making mathematicians gape.

Each time we pose a brand new query
Hoping to disprove a theory
While our backs get sore and our eyes get bleary
We log it on magnetic tape.

So we dock with reams of data
Surely we will publish later
For science is our alma mater
Salvation for the upright ape.

Gordon W. Groves

Waves Across the Pacific

Waves Across the Pacific was an ambitious project of Professor Walter Munk's to test theories of ocean-wave propagation and wave-wave interactions. The theoretical minds behind the project were Professor Munk and Klaus Hasselman. Frank Snodgrass was the engineer in charge of the electronic gear. It was 1963 and the digital equipment that Frank designed was truly amazing at the time.

The plan was to monitor ocean waves generated by Southern Hemisphere storms in the "roaring forties" and waters around Antarctica. These waves would travel across the Pacific, diminishing in amplitude as they went. We would measure these waves at six stations arranged along an approximately great-circle route, beginning with Cape Palliser in New Zealand, Tutuila in American Samoa, Palmyra Island in the Northern Line Islands, Oahu, the vertically floating vessel FLIP in the northern Pacific, and finally at Yakutat in Alaska. The observations would span a three-month period in the (Northern Hemisphere) summer of 1963. The stations would be manned by Frank Peterson (until his untimely death) at Cape Palliser, Walter Munk at Tutuila, myself at Palmyra, Klaus Hasselman on Oahu, Frank Snodgrass at the intermittent FLIP opportunities, and Gaylord Miller at Yakutat. Frank Snodgrass would also serve as roving trouble shooter while FLIP was not operating.

Palmyra was the most difficult station to plan, because it was uninhabited, had no communications facilities, was not visited by any commercial air or sea carriers, and was privately owned. It was considered essential because at the time there was a theory (disproved by this study) that waves traveling through the trade-wind belt would be dissipated by wave-wave interactions with the trade-wind sea. To get permission to land and operate on Palmyra, negotiations were carried out with a firm, Polynesian Paradise, which was planning to make money on a tourism venture on the island, and which claimed to have a lease from its owners, members of the Fullard-Leo family of Hawaii. (It turned out that Polynesian Paradise had no lease and no authority, but no problem arose because of this.) Executives of Polynesian Paradise gave permission and provided information on the island.

Permission to operate on Palmyra and ways to get people and materials there and back were two different things. Arrangements were made for the racing schooner, *Malabar*, to call at Palmyra during its planned cruise from Oahu to Tahiti to drop off two persons and to install the wave-recording apparatus during its brief stay at

Palmyra. *Malabar* was owned and captained by Dan Burhans, a neighbor and acquaintance of the Munks at the time. The two persons were myself and Jay Carr, a radio amateur of San Diego hired to provide communications with Palmyra. There were some fuzzy commitments from the Coast Guard or Navy to get us back by air (Palmyra has a large runway made during the war) and to provide emergency trips if necessary.

The evening before departure from the Alawai Boat Harbor in Honolulu was extremely hectic. Frank Snodgrass and I did not allow much time for considerable preparation needed in Honolulu, and it was already evening before I even started buying provisions. I went to the Safeway market on Beretania Street, took three baskets and just started throwing cans and packages of food into them. (Later on Palmyra, I was chagrined to see that all my jams were the same flavor.) Finally aboard *Malabar* at the dock, all participants in the cruise were assembled for a departure party. There were nine who would make the trip — Jay Carr and myself, Frank Snodgrass, Dan Burhans and his girlfriend Pat, a Japanese man whom Dan had hired as navigator, two girls who signed on as crew to get to Tahiti, and another crewman. Arriving also to the party were two newsmen from the *Honolulu Star Bulletin* and their cameras. Frank Snodgrass was afraid of unfavorable publicity because of the two girls, and treated the newsmen quite rudely and would not let them aboard nor give them any information on the trip. Since this was a government-sponsored operation he wanted no hint of scandal.

We were underway the next morning. *Malabar* was too small for nine persons on a six-day voyage, and all were uncomfortable with barely enough space for themselves and belongings. Jay Carr continually criticized the operation as "poorly planned," and its organizers as "idiots." Frank was concerned about leaving the two of us alone, and feared for my safety and sanity. He devised a way for me to secretly tell him via ham radio if the situation with Jay Carr was intolerable. I was to use the phrase

"the wave spectrum looks bad." This would be transmitted by Jay unaware that the topic of conversation was himself. Another incident undercut our remaining confidence in Jay. He fell overboard while hanging clothing on the fantail, and could have been lost had it not been for Dan's expert maneuvering and seamanship and the cooperation of all to keep Jay in view. The scream, "Man overboard!" had a chilling effect on all of us.

On Palmyra things generally went well, but if Jay disagreed with a message I was trying to communicate, he would just turn the set off in the middle of my sentence. Consequently, the quality of "wave spectrum" was discussed often by Frank in Honolulu and myself, and finally Frank sponged a flight to bring me a replacement radio operator. Jay had severe homesickness and was glad to be taken back.

All involved in the study had rewarding experiences. There was one particularly notable observation, that of ocean waves which had traveled 220° (more than halfway around the earth). These were recorded at the Yakutat station with wave height of only one cm. The day-to-day change in their period indicated the distance to, but not the direction of, their point of generation. If one stretches a string on a globe, there is a single narrow window through which waves could travel such a distance along a great-circle route ending at Yakutat. This is through the Tasman Sea (between Australia and New Zealand). The other end of the string indicates a point in the Indian Ocean near Madagascar. Weather maps did indeed indicate a strong storm at just the right place on the appropriate day.

After the field work the data were subjected to analysis, particularly by Munk and Hasselman. The results were well received by the scientific community and stand as one of many monuments to the genius of Professor Munk.

Edvard A. Hemmingsen

The Launching of *Alpha Helix*

Professor Per (Pete) Scholander was an unconventional man who much enjoyed challenging the scientific and administrative establishment. When he came to SIO in 1959 he was amazed to find that the institution's research vessels had little or no laboratory space. This was unacceptable to him; he felt that experimental biology was an important part of the marine sciences. I witnessed many of the heated, but friendly discussions Pete had with colleagues on this subject while at the lunch tables on the lawn. He would chuckle afterwards when he realized that he had stirred up a controversy.

Pete intensely wanted to have available a "real" research vessel. His enthusiasm for the idea infected others, and a few years after his arrival at SIO, his efforts bore fruit when the National Science Foundation provided the funds for it. The vessel was constructed according to Pete's vision: namely, as an ocean-going ship with a lot of laboratory space (with "flat, level floors," as he would say), a machine shop, but without a winch suitable for trawling and other traditional oceanographic work! Needless to say, his oceanographer colleagues were less than impressed by the design.

The vessel, named *Alpha Helix* to emphasize the new emerging direction of biology, was ready to be launched in 1965. The event was, true to Pete's style, unconventional. A memorandum from me to Jeff Frautschy, assistant director, dated July 9, 1965, describes the event, observed only by a few:

On June 29, 1965 I was in Tacoma, Washington to attend the launching of *Alpha Helix*. The ceremony was scheduled to start at 1830 that day, with the launching itself taking place at 1900.

At approximately 1735, estimated time, a party consisting of Dr. F. Haxo, Dr. E. Grey Diamond, and myself were approaching the shipyard by car. Crossing the bridge over the channel next to the shipyard, we noticed that a ship on a ramp slowly began to slide back into the water. When we got a fuller view of the vessel, we saw that it was *Alpha Helix*.

Puzzled by this off-scheduled launching, we proceeded to the shipyard, where Dr. Scholander, with party, arrived just ahead of us. Besides the two parties, I could see only one employee of the shipyard present at the launching site. I was told by him that the launching crew had left the place temporarily only minutes before the event took place. I did not inquire into the cause of the accidental launching, nor did I examine the ramp very closely. But it appeared that some bolts had been torn off a holding block.

About the launching itself, it is to say that it was very smooth, in fact, it seemed to be perfect. Our party had an excellent view of it from the bridge. The vessel came down very slowly and hit the water in completely vertical position. After it was afloat, it drifted with the stern toward the opposite side of the narrow channel. It seemed to touch this side at an angle 30° to 45° off perpendicular. In less than five minutes (estimated) after the launching I noticed a small tugboat near *Alpha Helix*. Ropes were attached, and the vessel was towed back to the dock at Martinac's Shipyard.

Ralph A. Lewin

Pete Scholander

Pete Scholander used to include an item, I think called "representations," in each of his NIH proposals, to cover the costs of drinks, etc. at celebratory parties. He said this was quite usual in Norway. The Norwegian word "representasjon" stands for the act of representing a business, institution, person, etc.; it can encompass expenses for food, drinks, and entertainment. It does not have the same meaning when translated to English. Somehow, when the NIH learned about it, they seemed disinclined to go along with the idea.

Academic Senate

When there was talk of asking for Chancellor McElroy's resignation, some of us, not ordinary academic senate attendees, decided that we should attend a special senate meeting at UCSD. Three less-than-ordinarily-dignified members — Merle

Hendershott, Chip Cox, and I — went up in one car, and arrived a few minutes after the meeting had started. As we entered there was a sudden silence, and the chairman, Walter Kohn, looked askance at us and said, "This is a closed meeting of the UCSD Academic Senate. Only senate members are admitted." After we assured him that we were indeed members in good standing, we took our seats and the proceedings proceeded.

A Fictitious Scientist

An application to solicit funds from the NSF, NIH, etc. for a new Marine Biology Building, was accompanied by biographic and bibliographic information on all sorts of people who would use it. Some were scientists at SIO or UCSD, but others were people from other institutions, of whom most of us had never even heard. Somehow, among them was included, with abundant documentation, a completely fictitious individual. Late one night, Marie Mathers discovered the projected fraud, and rectified it in time.

The Landlubber **sung to the tune of** ***I am a Pirate King***

For explorations I've not much urge.
I don't like swells and I can't stand surge.
I never relish the pitch and toss
(I'm more of a stone that'll gather moss).
I'd rather stick with my garden soil
Than rock on the ocean with bilge and oil,
With diesel fumes and the smell of swill,
I'm happier far where the ground is still.

So I'd rather not go to sea — no, no —
Whatever you think of me,
For it doesn't appear to agree with me
Whenever I'm out at sea.

I'd rather sit in my cozy home
Than board a vessel that plies the foam,

For the heaving motions of waves and tides
Have awful effects on my poor insides.
I'd rather sit on my stable tail,
Answering 'phones and the morning mail,
Than try to work on the stormy seas
On a chilly night with a 40-knot breeze.

So, I'd rather not go to sea — no, no —
Whatever you think of me,
For it doesn't appear to agree with me
Whenever I'm out at sea.

When the seas are high and the going's tough
Things bounce around when the ocean's rough:
The gimbals swivel, the sprockets sprock
While gantries wobble and stanchions rock.
I'd rather stay within sight of Scripps,
And leave for others those ocean trips.
I'm happier far in my office chair
Than on expeditions from here to there.
So, I'd rather not go to sea — no, no —
Whatever you think of me,
For it doesn't appear to agree with me
Whenever I'm out at sea.

I've lots of colleagues who sail the foam
Instead of remaining back here at home.
With stronger stomachs and stouter hearts
They gather data, and fish, and charts.
But do discomforts upon the brine
Make data so gathered worth more than mine?
I can sit around and get just as tanned
In my own back yard or the sea-side sand.

So, I'd rather not go to sea — no, no —
Whatever you think of me,
For it doesn't appear to agree with me

Whenever I'm out at sea.

Mary Crawford

Aquarium-Museum

Before the docent program was established at the aquarium-museum, the aquarists greeted the visiting school groups. On one day no aquarist was available, so I asked the director, Don Wilkie, if he would talk to the group. Don was extremely busy that day, so I informed the teacher of this, but I said Don would give them a few minutes. This was a second grade class, and the teacher must have said something to the effect that Mr. Wilkie was a very busy man, and we must be good and not waste his time. Like most visiting primary groups they responded by

writing letters and/or sending original art. From this class came a letter:

Dear Mr. Wilkie,

Thank you for wasting your time.

Kittie Kerr Kuhns

A Suspicious Man

Just after I joined the staff of the SIO library in the mid sixties, Joe Gantner, the SIO librarian, warned me of a new policy. Only staff could use the back door. We had been losing too many books, so all others had to enter and exit by the circulation desk. One morning, I saw an older man in a flannel shirt and dungarees enter through the back door. It looked suspicious to me, so I ran and got Mr. Gantner. I told him a "strange looking man" had entered through the back door and was standing at the "New Books" shelf. Joe peeked around the corner, saw the man, and looked back at me and whispered, " Kittie, THAT is Linus Pauling, a Nobel Prize winner." Over the years at SIO I have learned only to question those men in suit and tie.

How Deep is the Ocean

The Technical Publications office often is the last resort for those seeking technical information that they are sure Scripps has stashed somewhere. One afternoon I got a call from a young lady at AT&T. She wanted to know the depth of the Pacific Ocean. I told her it depended on where in the Pacific Ocean. She said, "I can not tell you, that is classified. We are going to put a communication line down and need to know the depth." I explained to her that just as on land, the altitude or depth depends where one is. We went back and forth, I gave her some suggestions but she was convinced the ocean was all one depth, and that I just did not know the answer.

Some Photographs Are Harder to Get Than Others

We have always tried to take pictures for the annual report while the scientist is actually doing the work. One year we needed to take a picture of a scientist attaching a small receiver to a penguin. We were scheduled to go to Sea World and use one of our penguins there for the shot. When the day rolled around, we discovered this was impossible. It was nesting time in the penguin house. So we had to be creative. There was a frozen penguin carcass in the PRL freezer, which we took up on the roof of the old aquarium. The scientist donned his Antarctic gear and a very close-in shot of the penguin and the scientist, with a cloudy sky overheard, was taken and used in that years Scripps Annual Report. Sometimes you just have to improvise.

The Vice President Visits

Visiting dignitaries travel through Scripps often. The visit of the Emperor of Japan and the Queen of England were impressive, but my favorite was the visit of Vice President Hubert Humphrey. The university was in a financially slim period at that time and they knew the motorcade would drop down to the pier; he would walk out on to the pier and then travel on south through campus. So they painted only the sides of all the buildings the vice president would see.

When the day of his visit arrived, I was working in the administration building, and offered to answer the phones while everyone else went out to get a glimpse of him.

I knew he was just about to arrive, when the phone rang. The male voice on the line said, "I am going to shoot the Vice President on the end of the pier." I was alone in the building, so I did the only logical thing: I figured if I could keep this man on the line until the VP left, there would be no problem. I listened to his ravings about the politics in the country, the war, and other international affairs for about twenty minutes, agreeing with everything and encouraging him to talk. When people started to filter back into the building, I knew all was OK. I hung up, found Deputy Director Jeff Frautschy, and let him handle it from there. There was no way to trace the call, and I am sure it was just some crackpot, but that was enough excitement for me for one day.

Jed Hirota

Student Days

It has been about two decades since I left the SIO-UCSD campus following graduation. Certainly it seems that far less time has passed than this, but somehow I guess the times and tides abate for no man. When I first visited the SIO campus along La Jolla Shores Drive, I was immediately impressed by the scenic oceanside location of the buildings, the snack bar and lunch area, and the SIO pier jutting out into the Pacific. In those days the graduate student hangout was at Surfside for the TGIF's and the "wooden buildings for graduate students" served as combined offices, study areas, lounges, and surfboard-beachwear warehouses. The old Scripps Library was a three-story structure near Ritter; it was overseen by Mrs. Jayne Jamieson, who was always a proficient and pleasant librarian at the front desk — undoubtedly the prettiest one of any UC campus.

In the late 1960s it was a time of national political debate over the Vietnam War and the role of the United States; it was also a "hippie era" of flower children and peacenicks. At Scripps, with its focus on marine sciences and ecology, the topics of conversation could as well have been about the role of predation and succession in

structuring animal communities, or issues such as human population growth, the food supply and environmental quality. It seems that some of these human problems are still with us but are now more acutely focused. The SIO fleet of ships included *Ellen B. Scripps*, *Thomas Washington*, *Melville*, *Horizon*, *Oconostota*, and *ST-908*. This was a time when biologists were studying the anchovy/sardine population variations, the CalCOFI MLRG plankton studies were in full swing, and the studies of marine planktonic food chains (webs) were being guided by John Strickland at the Food Chain Research Group. Some of this generation's best oceanic biologists and zoogeographers were in their heyday — John Isaacs, John McGowan, Mike Mullin, John Strickland, Dick Eppley, Abe Fleminger; and Ed Brinton and many others were studying marine pelagic ecology as well. On the benthos, Bill Fager was studying colonization and succession of organisms on artificial substrates, Jim Enright was researching vertical migration behavior and other endogenous rhythm phenomena, Bob Hessler studied deep sea biota/diversity, and Bill Newman was doing barnacles and corals (I think). Being an oceanography major did not give me as much exposure to marine biology as one might have hoped for, although I managed to take a few such courses. I learned radio-isotopic methods from Ted Enns, Denis Fox was ending his long career on animal pigments, and M. Benny Schaefer still gave some awesome lectures on the theory of fishery models and population dynamics.

I can now think back during my graduate studies to what few specific things I have appreciated the most about my education and association with the SIO Faculty, and here is a brief list.

1. Being near and around many scientific intellects, unique personalities, very interesting and eccentric types — to listen and have them expound their ideas at seminars, and to teach and generously give their time and guidance to us graduate students. Learning their points of view and philosophy, how they dealt with questions and problems, is what was valuable to me as a student. In particular, I remember Bill

Fager, Mike Mullin, and John McGowan as my best biology classroom teachers, and also Jim Enright, Abe Fleminger, Ed Brinton, Jack Beers, and many others as very helpful faculty, scientists, and colleagues.

2. Perhaps among the most valuable lessons given to us graduate students by our SIO faculty were to be highly critical in our thinking and testing of scientific hypotheses, and to back our conclusions with rigorous statistical analyses of field or experimental data. Some of these lessons were given in classes, but much of this philosophy came to us at open weekly seminars and informal lunch meetings in the Old Scripps Building, Ritter Hall, or the upstairs room of the Aquarium-Museum.

3. A lot of fond memories for me of Scripps Institution of this period include discussions about our own projects or topics of current scientific interest with other students or faculty at the many lively lunch discussions on the lawn beside the snack bar, or at the TGIF's at the week's end at Surfside, or just passing a friend in the hallways of Sverdrup, Ritter, or Old Scripps Building to "shop talk." Probably the greatest reward of scientific endeavor is the thrill and excitement of a new discovery, or to have been given a sudden insight of how a small piece of nature "works" — these are the things that make the search worthwhile.

On a more personal side and with lighter notes, three particular experiences or incidents stand out during graduate school at SIO.

1. During one afternoon seminar featuring a speaker showing a movie of some midwater animals, footage was shown of both fishes and squids rapidly swimming past the camera's field of view — much too fast to see anything but a glimpse of what major taxa they were. From out of the audience someone, probably Carl Hubbs, remarked, "Those lanternfish looked like *Ceratoscopelus warmingi*!" Not one to be outdone, John McGowan chortled a retort from the audience, "Yes, and that squid nearby was an immature, subadult male of *Symplectoteuthis oualaniensis*!"

2. The SIO Climax Expedition, ca. 1970-71, went from Wellington, New Zealand to Papeete, Tahiti to study south central Pacific Gyre plankton community structure and productivity, and to collect nektonic samples from a remote oceanic system for reference-level pesticide residues. Chief scientist was John McGowan along with many SIO graduate students (myself included, carrying out field sampling collections of plankton and IKMT micronekton for chemical analyses). On this cruise, John Wormuth was collecting squids for his dissertation. All of the albacore we caught by handlines off the Bay of Isles, North Island, New Zealand, and had frozen to send back to SIO, "evaporated or disappeared" by the time the ship reached home port.

On the cruise, while in port in Papeete, the crew had a jolly good time drinking beer at the Tahitian Hut, Quinn's Bar, famous for legends of the South Seas. It is at Quinn's Bar that our sloshed chief scientist McGowan got into an argument, shouting match, and scuffle with a couple of "very large, local kanakas," causing a big commotion and ruckus. Exact details of the incident — what was said and all that happened are only faded memories. Quinn's Bar and the Tahitian Hut are now long gone, but I recently sent to John McGowan an original tee shirt I had kept, as a souvenir for him and memorabilia of an era now passing by. He and other SIO faculty probably felt the same upon the passing of Martin Johnson and other teachers: that it was the end of an era, one of lots of fond memories, friendships, fun and love for the sea and all of the camaraderie that it generates.

3. One last vignette is worth passing along: I participated on the first sea trials of *Melville* to the Velero Basin off San Diego, to do midwater trawling and mesopelagic plankton sampling with Carl and Laura Hubbs and others in marine biology. Upon heading out of San Diego Harbor near Point Loma, Carl Hubbs was hanging over the side of the starboard bow in the early morning fog straining to locate and identify a barking (harbor) seal or other marine mammal playing at the surface. Right behind Carl was Laura with a notebook to record whatever observations Carl was trying to

make. And so, during this entire week of trawling and sampling, Carl and Laura Hubbs worked so diligently on the midwater fishes — Carl ploughing through tubs of blackfishes, and Laura right there recording the catch information. It was such an inspirational sight to see these two working together alongside each other, probably well into the late '70s or even '80s, with such enthusiasm and a commitment to marine science. It's an experience that I suspect others who knew Carl Hubbs also found to be true, and one that is part of his legend and legacy at SIO.

Eli Silver

Those Women

In the summer of 1969, Tanya Atwater and I had a cruise on *Oconostota*, a converted harbor tug nicknamed "Rolling O," which departed from San Diego and headed north to work on the Gorda Plate, requiring a ride of five or six days. Captain Phinney was given the honor of guiding our safety for this month of geophysical work in rough seas on the converted tugboat. As we rounded Point Conception on our way north the seas picked up, and by the time we had reached the Big Sur coast the waves were crashing down over the bow. As Macbeth said to the sentry the morning after killing the king, "T'was a rough night." It calmed down by morning, but as several of us were standing on the fantail we noticed that the tail was higher than normal and the bow lower. We mentioned that to a crew member who checked out the bow, to discover that the chain locker was filled with water. During the night the waves had crashed over the bow and filled the locker from above. The water pumps that we had aboard were feeble in relation to the job that had to be done, so several of us suggested bailing by hand using buckets and a chain of people to empty them. Hours later, we had bailed the water sufficiently that there was no safety problem, but we decided to enter port in Monterey to check out the extent of the damage and to do necessary repairs.

While in port, I called my wife to let her know how things were, and said that we'd had to bail out the boat. We then spent an enjoyable few hours in Monterey while the crew worked on the damaged locker, after which we again headed north to the Gorda Plate. Now Captain Phinney, for those of you who never had the chance to sail with the gentleman, had, shall we say, a few quirks. One of those quirks was an aversion to overuse of the radio. (He also had an aversion to overuse of radar, which made life immensely exciting on foggy nights.) Because of this aversion, about a week went by without any word on shore concerning the fate of *Oconostota*. Because it wasn't one of Scripps's finest, few people really cared whether or not the little tug ever came back (and when "Rolling O" was finally sent off to Moss Landing for a new life, few people noticed and no one shed a tear). After about a week, my wife sauntered down to the director's office looking for news of the old tug, and failing to find anything, shared her news about us having to bail out the boat in rough water.

Several days later, Captain Phinney took me aside to where we could speak in private and said, "You have to watch out what you say to <u>those</u> <u>women</u>."

The Onion Sandwich

On that same trip, Tanya Atwater, who was the only female aboard, was not allowed to share a cabin with males, so Scripps Marine Facilities people, using their infinite wisdom, devised the ideal solution. They built Tanya a bunk beneath the chart table in the lab, the only place on the ship that is never quiet and never private. They constructed curtains for her bunk and made drawers for her to store her things beneath it, drawers we used to store core catchers and tools. As you can see from another story about this cruise, the weather that summer was not the best for a 102-foot tugboat to be messing around in the bad seas off Cape Mendocino. One of the scientific party was an undergraduate who had come along to learn what life was like at sea. I don't remember his name but I'll never forget his experience.

The student, as it turned out, was quite susceptible to seasickness. Now, I don't know what the reason is and I have absolutely no respect for those with theories on why people get sick at sea. It happens, and the worst part is the kibitzers on the sidelines. Anyway, the weather was bad for a number of days as we did our seismic work and coring in the Gorda Basin and on the Gorda Ridge. The student became inconsolably sick and was able only to lie prone in the center of the lab. He lay there unmoving for days, as we stepped over him to get from one part of the small lab to another. It became a royal annoyance for us and excruciatingly awful for him. Something had to be done. I went to Captain Phinney and explained the situation, pointing out that as much as I hated giving up even an hour of ship time, humanity cried out for a short port stop for the dying student. Captain Phinney accompanied us to the lab and examined the carcass. "Hmmm," exclaimed the good captain, "why he isn't even green! Leave him to me." Captain Phinney commanded the walking ghost to follow him to the galley.

Now this in itself requires some background: the infamous galley on "Rolling O." Many was the morning I remember waking in the scientist's stateroom (an overstatement) with the ship rolling like a cork in a hurricane, walking through the galley to the smell of stale coffee and rancid bacon grease, then through to the winch room to smell the mixture of old winch grease and diesel fumes. At this point, I would peel off toward the only head on the ship to relieve my stomach of its unwanted contents, only to find a line of four or five people also waiting to do the same thing. Ah the joys of morning on "Rolling O."

Now, Captain Phinney had a favorite cook: Jack. Jack never smiled, but he smirked and leered, always with a look in his eyes that said he had done something to the food that would make you sicker than you could ever imagine. Jack loved to cook greasy chile on a foul day. SOS was his favorite breakfast. [A translation of the acronym, SOS, may be obtained from any ship's cook — or from the editors.]

Anyway, Captain Phinney brought the poor, hapless student into Jack's galley and told him to sit down. Then he commanded Jack to cook him an onion sandwich. I still have nightmares just thinking about that greasy onion sandwich being fed to a dying student, who only wanted to experience the excitement of oceanography, just as he'd seen on TV with Jacques Cousteau. I couldn't bear to watch and left, thinking about what I would have to say to the poor lad's mother.

Well, Jack fed him that sandwich, and the next thing I knew, the kid was back walking around. From that point on, he filled his plate to overflowing at least twice during every meal and really got into the cruise. He left the ship a picture of health and excitement, and thanked us for giving him a chance to have such a great experience. All I can say is, "Kids, don't try this at home."

Laurel Loeblich Smith

Some Things I Remember

Some of the things I remember are: Dr. Ralph Lewin's noon-time seminar series, where nearly everyone brought their lunch to eat during the "show." I remember one speaker from Japan. After the first few minutes of his talk, Dr. Lewin bounced up to ask if there was a translator in the audience that would help us understand the speaker. The bad news was that what we had heard was English, kind of. Another talk that I mercifully missed was on spiders. The speaker had lots of graphic, technicolor slides of spider-bitten human and animal appendages. Several people couldn't eat their lunches during that one. One last talk that was memorable was by a man studying diatoms. He collected some in England and on the way back to the states, rented deck chairs for the various test-tube cultures. They needed some sun, too. He caused several deep discussions to ensue after his talk was over with his proposal that the diatom we see today could be merely a minuscule part of a perhaps millions-of-years-long life cycle of

some unknown, totally different, much grander type of creature. Awesome. It's hard to prove a vague theory wrong.

One day, I was wearing my white lab coat and walking between buildings at Scripps. Two middle-aged men obviously just strolling up from the beach saw me and began asking questions.

"This is such a wonderful place! I bet all kinds of fascinating research take place here. Do you work here?"

"Yes. I'm a graduate student here."

(Spoken with sincere awe and admiration) "Ohhh. You must be very smart."

"Uhh, well, I consider it more of an endurance test."

"Ahh, yes." (Translation: The wise one has spoken.)

Jane Malloy

The Kindness of Strangers

A few years after I was hired at Scripps, one of my duties was sorting the mail for Marine Biology. At that time, our administrative offices were located in the Scripps Building and the mail boxes were out in the hall opposite what is now Contracts and Grants.

I remember one particular day when the morning mail delivery was quite large, and as I proceeded to pick up the stack for sorting, the mail slipped out of my hands and fell to the floor. It didn't just land in a nice pile but was scattered from one side of the hall to the other.

As I was standing there wondering if this was the start of a bad day, a white-haired gentleman, whom I did not know, was walking down the hall toward me. He stopped, looked at the mail all over the floor and then looked at me.

He said, with a gleam in his eye, "Are you a woman's libber?" When I replied, "No," he then proceeded to help me pick up the mail, yet didn't say another word. When we were done I thanked him and he left.

Just as he started to turn the corner and exit the building, I called after him and said, "What if I had said yes?" He replied, as he glanced over his shoulder, "I would have let you pick up that mess yourself."

Sadly to say, with the exception of this one incident, I never had the pleasure of meeting this fine gentleman: Professor John Isaacs.

Mike Huber

A Lesson in Gamesmanship

It was my first research cruise of more than a few days duration. Like most grad students on their first real cruise there was a lot to learn, but a lesson in gamesmanship sticks in my mind.

Alpha Helix was going from Panama to San Diego. As usual, there was a mix of scientists. The chief scientist, Bill Newman, and Allan Southward and his wife from the UK were collecting barnacles for genetic and taxonomic studies. Dennis Hedgecock (UC Davis/Bodega Bay) was also collecting crustaceans for genetics, but was more interested in decapods. There were one or two people from Faulkner's or Fenical's lab collecting for natural products work, and probably a few others. I was just starting my thesis work on crustacean coral symbionts.

One thing we did was regular bottom trawls, often at night. This meant not only hard work at night, but slowing down the boat. *Alpha Helix* was on her home leg after something like two years at sea, and even with regular changes the crew were antsy to get home. Most of their effort seemed to go into painting the boat so it would look

good as they steamed past Point Loma. I don't think they much wanted to drag the bottom, or slow down.

Not long into the cruise the winch broke down. Irreparable. Nothing to do but head home.

Bill Newman, however, had a question: Was their any rope on board? Next thing we knew, the entire ship's crew (save maybe the cook) were on the deck dragging an otter trawl on 3-inch line from several hundred meters by hand, using only a rusty manual deck winch. Most of us were outraged. It would be total lunacy to do this for the rest of the cruise. Even Darwin would have balked!

Funny thing, but next morning the main winch had somehow healed itself, and worked perfectly for the rest of the cruise. We did our work and made port in San Diego as scheduled.

Clark Wilson

Earthquake Identification

When Marcia McNutt, now a professor at MIT, first arrived at Scripps as a fresh new student in 1972, she participated in Jim Brune's seismic-record reading class. Each week, a different student was required to identify and locate earthquakes using the seismograms generated by a three-station array and written on the drum recorders sitting in the IGPP lobby. When Marcia's week arrived, a group of fellow students secretly created bizarre events on the seismograms by moving pens on the drum recorders by hand. Marcia was initially confused by these strange "earthquakes," but eventually learned of the trick. This practical joke apparently left a lasting impression on her about the reliability of seismologists and seismic data, and unlike the majority of students who ended up as seismologists, Marcia turned her professional attention to other problems in geophysics.

Hang Gliding

When the sport of hang gliding arrived on the scene in the early 1970s, there was a small group of Scripps people that joined in. Graduate student Steve Huestis, now on the faculty at the University of New Mexico, was among the most active, and would from time to time appear in the sky over the IGPP building shouting greetings to the earthbound. Steve organized a number of trips to Cantomar, in Mexico, to practice gliding on the sand dunes, where a soft landing was a sure thing. George Backus went along on one of these and, unfortunately, received a slight injury in his landing, enough to discourage him from further participation in the sport. Later, Huestis and fellow student Greg Holloway created a daredevil show by inviting all of the IGPP graduate students to climb onto the roof and watch the two of them run off the edge and land on the beach below, next to the Scripps pier. Holloway, the first to go, nearly crashed on the cliff edge, because his hang glider stalled on take-off. Huestis, in best daredevil style, gritted his teeth, strapped on his hang glider, and ran full speed off the edge of the roof. He had a much better flight. However, the stunt was close enough to a disaster that it was never repeated. Furthermore, when Bernie Zetler, the administrator at IGPP, heard of it, he issued a rule against such activity. As a final note, a serious hang-gliding crash by graduate student Ian Reid in 1975 brought the danger of the sport to us first hand.

Eric Shulenberger

"Why 1903?"... or, "How Do They Determine What to Engrave in Letters of Brass?"

So this year we celebrate SIO's 90th year? Right! Back in 1972 a hungry young graduate student (me) decided it was silly for SIO not to have a tee shirt available. I designed one, the original one, with *Melville* and a globe on the back, surrounded by anchor chain, with the words "Scripps Institution of Oceanography" on it (and my

initials in *Melville's* bow wave, and an "X" at McGowan's Central Pacific Gyre station at 28°N 155°W).

To complete the design, I needed SIO's founding date, which I sought at headquarters. Everyone looked puzzled — it had apparently never been considered before. Unanimous advice was to seek out SIO's unofficial historian, Betty Shor, which I did. Posed "the Q" to her. She cocked her head, peered at me through her perpetual haze of cigarette smoke, and said, "Now, Eric, that's a very interesting question. . . come on in and we'll talk about it for a while."

We pored over old documents for the better part of two hours. It became clear that any number of dates extending from the late 1800s to somewhere in the 1920s could pass casual muster as a "founding date," but there really was no single, honest-to-Pete, clear cut "founding."

That was no help. . .I **demanded** a date for my tee-shirt design, which had a blank spot in it and was going to the printer that day. So Betty caved in, and said, "Well, I've always been partial to 1903." I thanked her, and ran with my number.

Four days later, I sold all 240 first-printing tee shirts in a one-hour feeding frenzy in John McGowan's lab; over the rest of my studies at SIO, I sold about 2000 more. When I left SIO, I gave the design to the Aquarium Bookshop, where they sold tens of thousands over several years. (They were supposed to put 25¢ per shirt into the Surfside TGIF beer fund. . .did they ever do so?)

So. . .SIO was founded in 1903, and we celebrate its 90th birthday this year. Believe it! After all, the date is on the "official" SIO tee shirt, so it must be right. [It is right, Eric! — B. Shor]

John E. Cromwell

The Half-Ton Team Relay

For decades, Scripps staff and students kept fit with daily jogs to the La Jolla Beach and Tennis Club and back — or by playing beach volleyball, body surfing, or swimming. Mostly during lunch. Friday evenings, or course, were reserved for beer drinking and sunset (or other heavenly body) watching. Each year, this combination of eating, beer drinking, and athletics came together at the Annual SIO "Family" Beach Picnic and Scripps Olympics. For years, the Olympic events were limited to various long-distance runs and the "round-the-pier" swim. Although popular and competitive, the fun part of these events was limited to the start and finish for the majority of picnickers.

So, in 1973, at the height of seafloor spreading and other revolutionary movements, the picnic committee decided to expand the Olympics by adding several "fun" events to the traditional running and swimming. These events were designed to provide more localized interest and involvement for the picnic crowd gathered around the fish-chowder pot and beer kegs.

That year the "fun" events included a coed wheelbarrow race, a run-chug-run, and a backward sprint. Not being a marathon runner, I entered the backward sprint with high hopes of winning a coveted SIO Olympic gold medal and certificate — signed by King Neptune himself. Alas, I was "nosed out" by Bob (now Professor) Guza. As my thesis work was nearing an end, I knew that I would have only one more chance to win an Olympic medal. I also knew that I had to "fix" the event to prevent the fleeter of foot, sharper of eye, or whatever from snatching the victory away from me.

As one of the larger students at SIO, I decided that my best chance for a gold would be in an event where my weight was an advantage. Fred Phleger's and Frannie Parker's Coffee Klatch was my sounding board for ideas. After some discussion, we decided that calculating a winner for an "Inertial Sprint" would be too complex — and frankly, too "calculated" and potentially anticlimactic to be accepted by the picnic

committee. As we were geologists, I suppose, it was easy for the others to catch my "gold fever" and a team effort evolved. As we were also among the larger of the SIO population, we decided to make a weight advantage even more certain. So we invented a team event: "The Half-Ton Team Relay." The rules for the event were as follows:

1. Each team could have as many members as needed — or wanted, as long as the total combined weight of the team was at least 1000 pounds. That is, the team could be composed of four 250-pounders, five 200-pounders, or ten 100-pounders.

2. Each team member had to run twenty-five yards up the beach and twenty-five yards back carrying a baton and passing it to the next person until everyone on the team had run in sequence.

3. The winner was the first team whose last person completed the course.

It took five of us to get the "Hippos," our team, over 1000 pounds: John Cromwell, Jim Yount, Chuck Adelseck, George Sharman, and Wolfgang Berger. We then offered the event as a "challenge" to other groups at Scripps. Several other teams quickly formed. With this level of interest, the picnic committee made the event official and added it to the agenda. We weren't worried about Harry Lyons's "Quick Wimps" or the "Girls," as each of them had at least eight people on their team. However, the six-man "Tigers" began practicing block starts and baton hand offs, which gave us pause.

At the picnic, a second, collateral event emerged, the "weigh-in." A full size scale was carried down to the beach and set up so that each of the five teams' combined weight could be recorded. We had a brief scare when Wolf Berger showed up lame. Luckily, this was before the event was announced and we were able to get Peter Jumars as a substitute for Wolf, just big enough to keep us over 1000 pounds. When the teams began their weigh-in, chaos erupted and five more teams were formed from the crowd amidst much wrangling for the right combination of weights. New lanes for the extra

teams were created. Finally, the ten teams lined up, the rules were explained, and the race began.

As it turned out, the "Hippos" had their share of ex-football linesmen and we were quick off the mark. In fact, we were in the lead until we began colliding with opponents in adjacent lanes going in the opposite direction — mostly members of the "Girls" team! Even after stops to help them back up, and brush the sand off, we won handily. Today, my framed Scripps Olympics certificate hangs in a place of honor in my office and is the catalyst of many pleasant musings over my days in La Jolla.

John McCosker

The Fake Fossil Caper

Among my fondest memories of being a student at Scripps are the pranks, some ingenious, a few successful, that were played upon other graduate students and, in moments of madness and daring, upon professors. Now, at last, the true story of the Fake Jawfish Fossil can be told.

'Twas the spring of '73 in the Old Scripps Building. Nick Holland ranted and ichthyology students raved in the lower-floor offices. Ever the innocent ichthyologist, I was uniquely immune at that time, having submitted and defended my thesis, job proffered and accepted at a distant institution, and only a few more months in residence to clean up some projects and teach a summer marine biology class on the upper campus. Ed Brothers was not so fortunate. He was in the throes of completing his dissertation on gobies, had a working wife and a job search before him, and was burdened like me with a penchant to pull pranks. I will now unabashedly admit that it was my idea, but embellished by Ed, who was an artist and a visionary about such matters.

I had recently returned from a collecting trip to Costa Rica, accompanied by Richard H. Rosenblatt — mentor, taskmaster, purveyor of palpitations, and godfather

to all students in ichthyology. On that project we had amassed a large collection of a new species of opisthognathid, a colorful, blue-spotted, finger-sized, sand-bottom jawfish that was an addition to a larger revisionary study that Dick and Ed had wallowed in for several years. In fact, we captured more than a hundred of the little creatures, so many that I left two imperfect specimens to dry out on the engine manifold with the intent of varnishing and recycling them into tie tacks. Weeks later, on a foggy Saturday morning in Scripps Building, Ed and I and another student, Ron Fritzsche, were examining some Pleistocene fossils that had come from a California diatomite bed. These fossils contained pipefishes that Fritzsche was diligently examining for his thesis research, and Ed and I observed that the fish didn't look much different from the pipefishes that had jumped out of the aquarium tank and dried out before the ants found them. Ed looked at me with puzzlement as my bleary eyes rotated within their sockets and a light bulb grew radiant above my head. Fritzsche left, and Brothers and I hatched the plan. I suggested that we could fabricate a more realistic looking fossil than the ones we had just seen, and in doing so we might test the skills and humor of our mentor. I retrieved the now-emaciated jawfishes and we mixed up a batch of plaster-of-Paris with appropriate beach sand and diatomite to match the appearance of Fritzsche's fossils. I gently placed my jawfish beneath my sandal and applied the equivalent of 2,500,000 years of pressure upon it while ever-so-gently rotating my foot to squish it even more, embedded it within the plaster matrix along with a segment of similarly insulted dehydrated pipefish, and voilá, ancient history! My fossil looked old, but it wasn't convincing. Ed's really looked old, really old, and something about it just sang. It looked more like a fossil than any of the fossils that Fritzsche had borrowed. After it had dried, Ed scribed institutional collection numbers on the fakes using India ink, and, thus completed, we congratulated each other on our pseudo-historicity. (I might add that this was pre-high-fiving, so we settled for a hearty back slap and a simultaneous affirmation of "really bitchin.") After more exaltations

and huzzahs, we set about to hide our canard among the stack of borrowed fossils and have Fritzsche become the non-complicitous dupe to our plan.

Anguishing over our Daliesque era, Ed and I awaited Ron's discovery of the pipefish-cum-jawfish fossil. Fritzsche, so narrowly focused on his ichthyological agenda, took days to discover the non-pipefish on the slab. But finally he did, and moments after mentioning to his professor that he might have found something interesting, all hell broke loose. First casually, then excitedly, Dick Rosenblatt recognized the oversized maxillary bone and began to realize that he had before him the ancestral opisthognathid, the granddaddy of all jawfish, and eventually, with the impressions of microscope oculars deeply imbedded in his eye sockets, Rosenblatt invited Ed to share his find. Painstaking examination of the broken specimen's fin-ray elements and partial tooth remnants suggested that they had before them the ancestor to their new species. Dick was becoming aware that the fossil fish might be, in every morphological respect (except for the skin and coloration which we had removed with the judicious use of a blowtorch), the very new species that they were in the process of describing. The blue-spotted jawfish was the Costa Rican equivalent of the Coelacanth!

By this time the caprice had gotten out of hand. Dick had invested too much energy into this slab of plaster, fish, and chips to be advised that it was a little joke. Ed paced nervously outside the office as his major professor became more entranced with the discovery, alternating visions in his mind of *Science* and *Nature* vying for the rights to publish the cover story. In Ed's mind were his thesis and career, spiraling down the toilet. To describe Ed's perspiration as bullet-tose would be an understatement, so Terry Parr and I made several practical suggestions, such as "...just walk in, snatch it away, drop it, and let it shatter into a million pieces...or, create a diversion, switch fossils, and tell him he dreamt it...or, go to medical school." Ed chose none of the above. He walked in, tapped Dick on the shoulder, and said, "It's a fake." Dick gritted his teeth, muttered something incomprehensible, looked through Ed, and sauntered out

of the office muttering something even more incomprehensible. I'd like to think that he said "and a damn good one."

Martin Benson

Coming in to Home Port

Anyone who has been to sea for a period of more than two or three days knows the importance and excitement of pulling into port all too well, especially when the port is the Home Port. At the end of one of these, the dock would be lined with families and loved-ones of many of those aboard. Others aboard often had someone waiting for them at some other special place. Of course, everyone aboard who could would be fresh out of the shower for the homecoming, and the air aboard ship would seem charged with electricity as we approached.

There was a period that involved a considerable amount of practical jokes, both between ship's personnel and scientific members as well as amongst the scientists. There is one in particular that stands out in my memory. Mentioning names will be unnecessary. Those involved will remember well as they read this, and others will not care or need to know. In any case, this one was administered to one senior member of the ship's engineering department by one of the scientific party.

Having showered while on the way in the channel, said engineer dried off and hurried into his clothes at the last moment. As he was leaving his cabin, he slapped the ever-present ball cap on his head. Imagine if you will: one extremely angry person storming down the passageway on his way to find (destroy?) the person he had no doubt was the perpetrator — with quantities of shaving cream drooling out of the cap all over him! Fit to kill — I have no doubt.

Was My Face Red

There are times at sea when certain people become somewhat lax about what would be considered proper protocol. Brashness can lead to people kidding around a

lot, sometimes saying things that both parties know are the exact antithesis of the real meanings. This has been known to occur, especially during the late hours, between scientist in the lab and crew member on the bridge, when something such as a course change is being ordered. The order actually is being carried out, and meanwhile an interchange of "so what" or "big deal, who cares" may be taking place. The actual meaning of this exchange is buried in relief of tension or some such nebulous thing. The actual feeling involved is: I really do care very much that we do this thing right.

Imagine, if you will, the complete consternation of two such people, engaged in just such an interchange when, suddenly, into the conversation comes a third voice. "This is the Chief Scientist speaking! You have my button pushed, and you woke me up!"

Was my face red? That would be putting it mildly, to say the least. We never did figure out how that connection was made. The Main Lab button to the S.I.C. Cabin was not pushed. The one on the bridge also was released (they said). It is sufficient to note that, in some mysterious fashion, the S.I.C. had been connected. Albeit a few years late: Chief, I really do offer my sincerest apologies!

John Schneider

Explosives

I remember my initiation to big science at SIO. I volunteered to help out on a SIO cruise aboard *Thomas Washington* in 1976 — a seismic refraction experiment across the Clipperton Fracture Zone. LeRoy Dorman was the chief scientist. Others aboard were Tom Jordan (then assistant professor), Paul Spudich, Jan Garmany, John Orcutt, and others (then SIO graduate students).

We were somewhere in the middle of the Pacific Ocean with about 40,000plus pounds of explosives. We had dropped a string of OBSs [ocean bottom seismometers] to the ocean floor and then steamed north to start dropping charges. I remember quite

vividly (and poignantly) trying to dangle something like sixteen 600-pound barrels (about four tons) of explosives off the fantail in choppy seas, and watching this huge mass of explosive jelly careening from side to side across the deck. I thought, "What an outrageous and stupid thing to do!" No one had ever tried this act before, not even a mock-up in calm seas in San Diego Bay, and certainly not in choppy seas with forty people aboard and 1000 miles from the closest island. While we gave up on this particular charge, we managed to blow up our payload and recover all of the OBSs. A good time was had by all.

Mark J. Grygier

A New Phylum

In the late 1970s a great deal of deep-sea meiofaunal work was going on in Bob Hessler's laboratory, and nearly all the technical staff and students there were picking nematodes and copepods from abyssal mud. I helped out for a month or so at the end of 1978, beginning of 1979, while I was looking for a research topic. Anyway, it was not unusual to find strange minute animals in the samples. One day, Brian Burnett called everyone to look at a problematic specimen in the dish he was sorting. It was a more-or-less cigar-shaped worm, but definitely neither a nematode nor a polychaete. Nor did it seem to belong to any other likely phylum. That day and the next Brian was proudly trumpeting the "new phylum" he had discovered. However, someone opened a copy of *Science* magazine, and there in a microscope advertisement was the very beast Brian had found. It turned out to be a human hair follicle mite of the genus *Demodex* that had likely fallen out of Brian's face as he bent over the dish at his own microscope. The crestfallen Brian never lived it down.

William S. Harvie

En Garde

April 1980, *Thomas Washington* cruised west from Maui toward the site of the Deep Tow survey. The chief scientist was the illustrious Dr. Fred Spiess. Also aboard were a group of oceanographers from NOSC [Naval Ocean Systems Center], Hawaii. Dr. Spiess and I stood on the fantail, near that sturdy world traveler: The Great White Hut. The tropical sun blazed down. Sweat pimpled our brows. We had just finished tuning our svelte, blue transponders, which had been chirping happily in responses to our queries. Across the way, a group of NOSC scientists were poring over their massive, bright yellow, state-of-the-art transponders, whose electronic entrails were strewn about the deck. One of the NOSC scientists approached Dr. Spiess and disdainfully commented, "Your transponders are ancient. Looks like you guys could use some new equipment."

The doctor turned and replied, "We don't need new ones. Ours come back." Touché!

Jim Means

Coffee and Donuts with Dr. Nierenberg

I was only at Scripps a short time, but my memories of the time are quite vivid. I recall how all the new students would get to meet with the director, Dr. Nierenberg, for coffee and donuts in his office. I was quite nervous, at least partly due to the fact that I had forgotten about my original meeting time and had to reschedule.

As I recall, there were three other students there, but the only one that I remember was a supremely confident fellow with degrees from Harvard and M.I.T.

Dr. Nierenberg came in and said, "I have just gotten back from speaking with Mr. Reagan. . ." Of course, Mr. Reagan was going to be our next president, and

Nierenberg proceeded to tell us about their conversation. I remember sitting there thinking, "What do you say to someone that meets with the President?"

The donuts were sitting there untouched; perhaps we were in fear of taking the director's favorite before he had the chance. Nierenberg broke the ice by pulling out a pocket knife from his overalls and cutting one of the donuts and taking half of it. Now we were faced with a new dilemma: if we take a whole donut we look like a pig, but the alternative was to risk Nierenberg's wrath by taking his other half.

As I was pondering what to do, the fellow from Harvard and M.I.T. whipped out his own pocket knife, and sliced another donut in half! I think I sat through the rest of the meeting both stunned and amazed that he could have been so wonderfully prepared.

Heidi Hahn

The Phone Rings On

Suddenly the lights went out at the aquarium-museum. No flickering or forewarning, just pitch black. For those of us who worked in the inner sanctum of the aquarium's basement, that meant you couldn't even see your hand in front of your face, but you sure could still hear the phones ringing. We were in the midst of taking reservations for an upcoming event that had just been announced on the radio and had finally made it into the much-read *Reader*, so we had to persevere in order to save face and fill our spaces. Flashlights were located, our camping Coleman lanterns and even a few candles were found and lit. We continued to work in this strange eerie flickering light until 5 p.m. when we felt we'd exceeded our call of duty and thankfully left promptly on time. Once again, we had carried out our responsibilities to the public without letting them down, even though "behind the scenes" had been unusual, but this is often the case for our education department.

Chinese Junk

Late one night when I was working on a deadline, I took a rest from my papers and eyed an opened, but abandoned, package from Hong Kong sitting on my friend's desk. A lovely hollow ceramic Chinese junk, 12" long and 12" tall, had been sent in an ill-fated and poorly wrapped parcel. All that had reached us were about 100 small pieces! I fingered a few of these pieces, holding them this way and that, seeing how they might fit together. I soon turned away knowing I had more pressing business to finish than a 3-D puzzle needing a little glue and a lot of time and patience. The next morning when I arrived in my office "what to my wondering eyes did appear but a miniature junk and a note very near." It read something like this, "Thought you'd like this back in its original shape so I took a break from custodial work tonight to help you out. - Angel." What an angel he was. That's how we got to know Miguel Angelo Rivera (Angel for short). Angel was subsequently commissioned to construct the ship model of *New Horizon* that was presented on the day SIO took possession of the actual 170-foot research vessel during a Point Loma Marine Facilities ceremony.

Marie McIntyre

Stroganoff

As a new graduate student, I remember being very much in awe of my research advisor, Dr. Spiess. He was always referred to as "Dr. Spiess," never "Fred," or any other less formal address. A week or so after arriving at Scripps that first summer, I went along on a sea trip on *New Horizon*, with Dr. Spiess and the Deep Tow Group. The second day out it was rough and stormy and I was feeling a bit uneasy. Evidently, many of us were feeling uneasy, as very few scientists showed up for dinner that evening. I figured I'd do better to try to eat supper if I could, so I headed up to the galley.

I found buttered noodles with beef Stroganoff facing me in the serving bins. Normally, beef Stroganoff is one of my favorites, but at the time, the color and

anticipated flavor put me off a bit. I spooned a modest portion and headed into the library alongside the galley, where the scientists ate. Dr. Spiess was the only other brave soul attempting dinner that night, and I sat directly across from him, with a weak grin. I cut up my first bite of the Stroganoff and placed it in my mouth; I suddenly realized that this was NOT beef. As I glanced up startled, my jaw frozen and clamped tight, I met Dr. Spiess's amused grin. He said, "Yes, it's liver. It's good for you; eat it." Well, I took this as a direct order from my advisor and did my best, but I'll have to admit to hiding most of the liver in small cut-up pieces tucked under the cutlery and imbedded in the noodles.

Carolyn Rainey

Mrs. Hubbs and Snakes

When I started working at Scripps Archives in 1981 I was very lucky to share the space with Laura Clark Hubbs. I looked forward to seeing her every day. She shared many stories with me and was never at a loss for words of wisdom. We had discussed Lawrence Klauber and his passion for reptiles especially snakes, and just recently, I toured his home, which is this year's designer showcase house [of the San Diego Historical Society], and I was able to see the room in his basement where he kept his laboratory. It brought back a funny encounter I had with Mrs. Hubbs.

I had told Mrs. Hubbs before that I didn't particularly care for snakes, and she would always pull out two volumes from Dr. Hubbs's library that were written by Klauber about snakes. It didn't make me feel any better, but I listened to Mrs. Hubbs's advice on snakes, especially rattlesnakes; she said that I shouldn't be fearful. I told her I always run into snakes because of this fear, I'm sure.

On several occasions I would drive Mrs. Hubbs to her home and she would walk me in the garden and pick some lovely flowers for me to take home. Her garden went up a hill and there were many bushes, etc., and a path that meandered through this

area. I chose never to follow her up there because it looked like snake territory to me and I was afraid to go further.

On this particular day, she kept going further and calling for me to come up to meet her so she could hand me the flowers. I grudgingly started to walk very deliberately up the path and then stopped because my fear was getting the best of me. Of course at this point Mrs. Hubbs had no idea that I was plagued with fear and she kept yelling for me. Well, I didn't want to yell back that I was scared of snakes so I started moving very slowly and all of a sudden, with all the commotion of a highway crossing, the bush to my left started moving. The noise got louder and louder, and when I looked, a huge snake (of course to a fearful snake person they are always huge) went right over the tip of my sandals. I froze in disbelief because this confirmed my suspicions that this was snake territory. Mrs. Hubbs kept yelling to me to come up the hill and I stuttered and said, "I can't." She came down the hill to meet me and I told her that a huge snake went right past my feet and went from the bush on my left to the bush on my right. She looked at me and said, "Snakes, there are no snakes here." Then she stomped on the bush where I thought the snake was hiding, looked at me and said, "See, there are no snakes here." I could have died. Here was this woman in her eighties, a real pioneer who had no fear whatsoever, telling a much younger person, consumed with fear, that there really was nothing to be afraid of. I think back on this story from time to time and always laugh at myself and how something so small made such an impact in my life.

Chuck Colgan

Mr. Vent Fish

The *New York Times* headline (December 6, 1981) stated, "Mysterious Fish Captured by a Submarine in the Pacific," but perhaps the *Escondido Times-Advocate* said it best with "New Fish is Found by Fluke." Next to the headline was a picture of

Professor Harmon Craig, looking curiously at a sample tray holding a white fish. The fluke was that Craig and other geochemists had collected the fish accidentally in the conning tower of the submersible *Alvin* while at the 21°N hydrothermal vent site on the East Pacific Rise.

The Scripps Public Affairs Office had put out a news release on December 1, 1981, about the capture that began: "Oceanographers returning from a National Science Foundation-funded expedition off Baja California, Mexico, report collecting for the first time fish that live near hot-water vents in the deep sea. . . . Scientists have been observing these fish from submersibles, but the fish have never been captured. The fish apparently were swimming in the hatch area of the 25-foot, three-man submersible and became trapped when it began its ascent." Some months later, the fish were identified by Professor Richard Rosenblatt as a new species of eelpout, but for awhile, no one knew much about these white, red-nosed, cigar-shaped, foot-long fish.

Late one afternoon in Public Affairs, the story of these mysterious vent fish and how they were unsuspectingly captured evolved into a show tune when Jill (Hammons) Ives, and Judy (Kerber) Van Woy and I created SIO's first (and likely only) singing news release.

Mr. Vent Fish, You'll Be A Star

--To the tune of *Mr. Sandman*

Glug, glug, glug, glug, glug, glug, glug,
glug, glug, glug, glug, glug, glug. . .

Mr. Vent Fish, are you for real?
Or are you just a white slimy eel?
We've learned to love you from distance afar;
Now we're going to find out just who you are.

Mr. Vent Fish, from far down below,
you saw the *Alvin* and you had to go.
Up from the crest of the East Pacific Rise;
To a group of geologists you were quite a surprise.

Mr. Vent Fish, the world's waiting to see
what kind of vent fish you'll turn out to be.
Now that you're staying at Scripps Institution
we'll cut you apart and find the solution.

Mr. Vent Fish, you went for a ride
and now you're soaking in formaldehyde.
You'll learn to love it in our fish collections
and you'll be the subject of many publications.

Mr. Vent Fish, we hope that it's true.
Hope that they find out that you are you.
And not some lowly red-nosed creature.
We're all so glad we got to meet 'cha!

Mr. Vent Fish, if we had our way,
we'd see you swimming where you'd always stay.
Down at the bottom of the deep dark sea,
where oceanographers would let you be.

Mr. Vent Fish, you'll be a star.
They'll hear about you both near and far.
But back in the ocean, down at the vent,
they'll know you only left by accident.

Oh, Mr. Vent Fish, you'll be a star. . . .

James W. Ammerman

Missing Messengers

Early in May of 1985, as a postdoc for Dr. Farooq Azam in the Food Chain Research Group, I was Chief Scientist for a five-day cruise aboard *Robert Gordon Sproul*. We were doing microbiological studies in the water column of the Southern California Bight. Since it was a low-budget project we were still hanging Niskin bottles with messengers on the wire individually rather than using a CTD. We left Pt. Loma early in the morning and got to the first station three or four hours later. As we slowly started

the first bottle cast (everyone was still half-asleep), I realized to my chagrin that I had forgotten to bring the messengers. Without messengers we were completely unable to collect water samples (other than from the surface), so we had to radio to Scripps to request that someone find messengers for us. We returned to Scripps pier to pick them up, a four-or-six-hour round trip, before we finally arrived again at the first station. Given several extra hours of sleep, the scientific party was now in much better condition to work, and the rest of the cruise proceeded successfully.

Anonymous

Thank You

There are times when something happens which leaves one considerably grateful to another person. To be sure, in one case, another SIO employee saved me from near oblivion. Basically, he rescued me from one of the most difficult times of my life — took me in when I was destined for termination, and made me take a long look at myself and what I had been doing. The actual changes were anything but rapid, but they did happen.

I never made open admission of any of this to him, but I did stay around for many years and do my best (not always perceived as such) when it would have been by far easier just to leave. I figured I owed at least that much. I can point to many areas of success during those ensuing years.

Although I am writing this anonymously, if this person reads it, he will know who the two of us are. Thank you.