The Association for Diplomatic Studies and Training
Foreign Affairs Oral History Project

ROBERT H. MAYBURY

Interviewed by: Charles Stuart Kennedy
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INTERVIEW

Q: Today is the 16th of January, 2013. This is an interview with Robert H. Maybury.

What does the 'H' stand for?

MAYBURY: Harris

Q: Bob and I are both inmates at a retirement home, Goodwin House, here in Fairfax and that's how I ran across him and nailed him for this interview.

Bob, let's start at the beginning; when and where were you born?

MAYBURY: I was born January 29, 1923, in Lehighton, Pennsylvania, a small town in the coal country about 60 miles north of Philadelphia. My father was a minister of the Church of the Nazarene, this being his first pastorate, while my mother was a registered nurse, her RN from the Jewish Hospital in Philadelphia. I was their first child.

Q: What do you know about the name Maybury?

MAYBURY: As far as I know, the name Maybury is Welsh. In the United States you find it spelled both Mayberry and Maybury. Once in London, I saw a large bus going by with 'Maybury Tours' written in big letters along its side, the only time I have ever seen the name in public.

Q: What do you know, going back on your father's side of the family, where they came from?

MAYBURY: My father, Byron Maybury, was the oldest of the eleven children of John T. Maybury, who was also a minister in the Church of the Nazarene. I have met most of these aunts and uncles at one time or another, but where the family originally came from, whether Wales or England, I do not know. I was once told that the earliest members of the Maybury family were watermen who plied the Chesapeake Bay in fishing boats.

Q: Your grandfather, did you ever know him?

MAYBURY: No, unfortunately I never met my grandfather John T. Maybury, who passed away when I was about 10 years old. He had originally been a leading minister in the Methodist church, but around 1900, joined a group of other Methodist ministers in organizing the Pentecostal Church of the Nazarene, believing the Methodist Church had departed from earlier doctrinal positions and simple lifestyle practices. The church's elders dropped the word Pentecostal from the name about 1910.

Q: This is the story of America, all these denominations.

MAYBURY: I did know and met frequently my grandparents on my mother's side, Reuben and Elizabeth Bower. My grandfather Bower had been a successful businessman in Allentown, Pennsylvania, while grandmother Bower, whom we called 'Mammy,' was from a "Pennsylvania Dutch" family in Catasauqua, Pennsylvania. In their later years, probably when they were in their 60s, they often stayed with us in our home. Grandpa Bower was a favorite of us kids, for he seemed better off than our parents, so he was the one who bought the radio that we had in our home. I remember the first one was an Atwater Kent way back in the 1930s, with its earphones and very indistinct sound.

Q: What was it like growing up? Take your very early years being a 'PK', a preacher's kid.

MAYBURY: Being a "PK' meant your behavior had to be beyond reproach, especially in public. My brother, a year and a half younger than I, is still alive, and my sister, eight years younger than I, passed away about five years ago. I remember well how in church on Sunday morning we would sit in the front pew with our mother during our father's sermon. If we did the least bit of whispering to each other, the next day my mother would have told my father and, on our return from school, he would take us down to the basement where we got the traditional paddling on the rear-end! This was characteristic of the kind of upbringing I had in a very strict, but at the same time loving home.

Q: How much were you involved in the religion?

MAYBURY: From an early age, I took seriously all I heard in the sermons in church and believed all I was taught by my parents and by Sunday school teachers. The Nazarene

Church being a fundamentalist church means I believed literally all I read in the Bible or heard in sermons. Furthermore, at an early age I claimed to be saved and also sanctified, the two fundamental religious experiences of a faithful Nazarene. I also prayed regularly, believing I was in touch with God. I observed every detail of the strict practices I thought the Nazarene Church required of me. I can remember my mother telling me never to steal even a pin and was extremely careful never to do what I thought was wrong in any way. So not only was I conscientious, I was probably overly so, but I can go into this in more detail if you want me to.

Q: I'd like to pick up some of that.

MAYBURY: Our parents insisted that all three of us go to the college maintained by the Church of the Nazarene, called Eastern Nazarene College (ENC), located in Quincy, Massachusetts. Although today ENC is recognized as a good liberal arts colleges in New England, at the time we were there in the 1940s it was a very modest place with about 200 students.

It was at this college in 1942 that I met Helen, my wife. She was born in India, a daughter of Presbyterian missionaries and had attended well-known boarding schools in India for all her schooling. With the start of World War II, she and her family left India in 1942, traveling on a troop ship to New York where they stayed with her mother's sister and family. There she met a cousin who inquired about her plans to go to college. When Helen replied that her father had signed her up at a Presbyterian college in Tennessee, her cousin said, "Oh, you wouldn't know anyone there, so why don't you come with me to ENC? I could introduce you to lots of people there, for I have been there for several years."

During the school year beginning 1942, my junior year at college, I was earning money by waiting on tables in the college dining hall. Having heard from a student I had gotten to know well that her cousin, a girl from India, would be arriving at the start of the school year, I made up my mind that I would meet this girl. The first day she entered the dining hall, I spotted her and ran up to introduce myself and asked if I might call on her the next day to take a walk with her on the campus. Much to my delight, she agreed - - and of course as you know, today Helen and I are married and have been living happily together for all these years since that day.

Over the next two years at college, I grew to love Helen and know her better. We were both quite serious about our studies, each of us excelling in our respective fields, so our days were largely devoted to study, but we both found time to serve as officers in various campus organizations. Both of us also played musical instruments, Helen the violin and I the cornet and we both played in the college orchestra. In fact, for me music played a very large part in my life in college. Let me think back: in addition to playing in the college orchestra, I formed a trumpet trio with two classmates and we played in many churches throughout the greater Boston area, at the annual Easter Sunrise services and at many of the college social functions; since I had been playing my cornet since I was about six years old, I was able to teach the cornet privately to students who came to me

from families in the local community every Saturday throughout my four years at college, through which I earned good money; I also sang in the official college male quartette, traveling each summer of my sophomore and junior years to Nazarene churches in New England, Pennsylvania and Ohio.

Understandably, as the days and months flowed by, we began to draw closer to each other and, in time, became more intimate. But being the conscientious person I was, I naturally began to raise questions with myself about the propriety of this intimacy in the light of what I thought my religious faith required of me. Although this never included sexual intercourse, I became increasingly troubled over this.

Q: You couldn't neck? Oh, my God. I grew up in between. We could neck; necking was fine but after that, the problem was that children could result. There wasn't birth control. There were rather strict practical limitations.

MAYBURY: Well, being the sincerely religious person I was, I paid close attention to the sermons of the preachers appearing in our college church. In the midst of my concern over our intimacy, I heard a statement by one of these preachers that alarmed me. He said that to sin against light, that is, to engage in an act that was contrary to what one knew to be right, was something God could not forgive. This caused me to worry so much that I became depressed and had difficulty focusing on my studies. However, through praying in great earnestness and thinking carefully about the unreasonableness of this possibility, I gradually overcame my depression and began to look beyond myself, recognizing the benefit to my self-confidence of becoming engaged in activities focused on the needs of others.

Since my goal in college was to prepare for a career in chemistry, I came under the tutelage of the chemistry professor, Dr. James Houston Shrader. He had been a professor at Johns Hopkins School of Public Health and, on retirement, came to ENC with a concern for the scientific advancement of young people from the Nazarene Church, of which he was also a member. He was internationally recognized as a leader in the field of milk technology and was the editor of <u>The Journal of Milk and Food Technology</u> and author of a widely used text book, <u>Food Technology</u>.

Dr. Shrader took a great interest in my academic advancement and gave me special privileges, such as admitting me to the laboratory stockroom so I could carry on experiments beyond the required curriculum. Especially important to me as I worked through my personal struggle, recognizing my inquiring mind, he brought to my attention several books he believed would broaden my understanding beyond the narrow limits of religious fundamentalism in which I had been raised.

Q: It is interesting because you were growing up in a time when fundamentalist theology was particularly strong. It was beginning to die. It was in the '20s it really hit it hard.

Did you find that any of your teachers at the Eastern Nazarene College other than this one professor sort of opening your eyes? This is pretty limiting.

MAYBURY: Absolutely not. They were as tight as can be. Not even the philosophy professor, Albert Harper. I remember to this day, that although I read Plato and others in his philosophy course, I never once had any inkling that there were possible alternatives to the Nazarene position on religion. Nor did I get this from any of the other professors.

Q: Here you were sort of a young student, but did you find yourself reading beyond the strict theological? I don't want to sound like I am over emphasizing the sex thing, but this was a tremendous part of one's life and these limitations that are put on by religion sort of go counter to everything. I am not sure whether the word pernicious is acceptable, but I would call it pernicious.

MAYBURY: Well, of course. I read the usual textbooks in history, literature, philosophy and other courses, but most of my reading time was taken up with science and math texts. I don't recall reading much fiction, or even books on current affairs, but as I said earlier, I read the books Dr. Shrader gave me to help me in my struggle. I will say more about this when I tell you about my life after returning home from my World War II experience.

Q: I am going to cut this and move back. Let's talk about being a kid. In what town did you grow up?

MAYBURY: Actually, I grew up in several towns, for since my father was a minister, we moved every two or three years during my boyhood. As I said earlier, I was born in Lehighton, Pennsylvania, but after three years there, we moved to a town near Cape May, New Jersey, where my brother was born. Then three years later, we moved to Richmond, Virginia, where my sister was born. From Richmond, we moved to Bradford, Pennsylvania where I started school in about 1928 or 1929.

After about three years in Bradford, we moved to Johnstown, Pennsylvania, where my father had two churches, the first being the main Nazarene church and the second being one he set up in the western part of the town called Oakhurst. In 1934, we moved from Johnstown to Ephrata, Pennsylvania, and after about three years we left Ephrata for Allentown, Pennsylvania, where we remained for about five years! It is here I went from ninth grade until I graduated from high school in 1940.

Q: Let's talk about earlier years when you are bouncing around.

As a preacher's kid, were you able to get out and sort of roughhouse and deal with the other kids and the equivalent of gangs in small towns?

MAYBURY: One of my earliest memories of playing with the other kids in town goes back to Bradford, Pennsylvania, in about 1930. I remember taking my sled and going several blocks away from home to join other kids in sliding down the hill covered with snow. In fact, at this hill I slid into the corner of a house and cut my eye quite seriously, so I ran home with blood running down my face and bear a scar to this day. Then in Johnstown in about 1933, I remember I played marbles regularly with the other kids on

the school playground. Also in Johnstown I remember having a good friend, a Polish boy who would come by our parsonage on Saturdays so we could play together in the back yard.

A less happy incident happened in fourth grade. I was walking home from school when the local bully stopped me, grabbed my fountain pen, a birthday gift I had just received, threw it on the ground and stepped on it. I didn't fight back, but just continued walking home. Other than that one incident, I don't recall any other times I didn't fit in well with the other kids, whether walking together to or from school, or playing on the playground at recess.

As far as going to parties, we were rather carefully limited, never being allowed to go to a party unless it was at the home of one of the church families. In regard to sports, I was rather small, not heavy and had a slight frame, so I was not an athlete and did not participate in any organized sports. But even as a very young kid, I was always a very fast runner. Also, beginning at a young age, I spent summers swimming with the neighborhood kids, usually in a local stream and, while in winter I skated with them at a local frozen pond.

After we moved to Ephrata, Pennsylvania, in 1934, we would spend every summer at the Nazarene campground located near the town of Northeast, Maryland. My father had built a cabin there for our family, one among about 50 others, so we kids spent each day in a variety of activities along with kids of other Nazarene families who had cabins there. I worked in the store and sold ice cream and that kind of thing. I also sold the Philadelphia Inquirer each day to about 15 or so families who were subscribers. My brother and I would join kids from other families in the campground, run across a nearby farm to a stream, where we took off our clothes and jumped into the stream and spent all afternoon swimming with them. I remember these as very happy times. I don't remember any particular restrictions by our parents, but they knew where we were at all times. Each summer we attended the vacation Bible school for a two-week period on that campground. My mother was the director of the Bible school and, in fact, was engaged to lead such vacation Bible schools at other Nazarene campgrounds throughout the eastern U.S.

Q: This was an era, which has changed today, when the parents' recreation was so organized.

How about school, early school? How did you mesh with schooling?

MAYBURY: In whichever town we lived in, I attended the local public school. I was a hard worker and always stood at the top of my class, particularly in arithmetic. I took my homework assignments quite seriously. Every weekday evening, after dinner, my parents insisted we tackle our homework – no games, no radio shows, etc. Then at 10 pm, we were required to turn out the lights and go to bed. In the fifth grade, I served as a grade-crossing guard, wearing a silver badge and a white shoulder strap to mark my status and

held out a long bamboo pole with a yellow flag on it. I was duly respected by the other kids who had to cross the street at that intersection.

My mother, who was an accomplished pianist, was always the church pianist and taught many students in our home, so my brother, sister and I all had to learn piano too. In Ephrata, I began taking cornet lessons with a member of our church who played the cornet. I was about 12 years old, but after having practiced an hour a day every week day, for about a year I apparently had reached a level where I was able to play as a solo the piece "The Villa Song" on a program for young artists over a radio station in nearby Lancaster, Pennsylvania. In fact, I played at the Sunday services in our church every week from that time until I went off to college in the fall of 1940.

After we moved to Allentown, my mother paid for me to continue cornet lessons from a cornet teacher who had been a cornet player in John Phillip Sousa's band and was the senior cornetist of the Allentown band. I don't know where she got the money for that because my father's salary was minimal in those Depression years, but as a result, I became a competent cornet player. Clearly, playing the cornet had become a basic feature of my life and enabled me to earn part of my college costs by teaching cornet to young people from the local community.

Q: Cornet in small towns is a big deal. You'd have these outdoor band concerts on a particular day.

MAYBURY: The Allentown Band was very popular and everyone in town went to its concerts in the summer.

Q: The cornet has always had a prime role.

MAYBURY: Going back to my school experiences, let me mention several instances when my parents felt it necessary to place a limit on my involvement in a particular school activity. In junior high school, I played cornet in the school band and I remember marching in formation at some of the school events. But when it came to high school, my parents did not allow me to join the high school band, for they realized being in the band would mean I would have occasions to travel with the band members to other cities. They felt such mixing with a group of non-Nazarene young people would subject me to temptation to compromise with my strict Nazarene principles.

There was one other such occasion when my parents saw fit to limit my involvement in a high school activity. One day, two young men visited our parsonage, asking to speak with my parents about me. They explained that they decided to elect me to membership in their society, a very exclusive and distinguished academic group - - I can't recall its actual name - - but I remember that it was a great honor to be elected to it. My parents informed these two men that they would not agree to my joining the society. Again, they felt my involvement with a group outside the church could tempt me to compromise with my principles.

Q: Let's start back with when you were beginning to deal with books. Were you much of a reader?

MAYBURY: Oh, yes, even as a very young kid, I read all the time. Our father was especially good about this, for he bought for us all of the Alger books - - remember the Horatio Alger books? I read every one of those Alger books, but also Robinson Caruso, Treasure Island, Swiss Family Robinson. In about ninth grade I got interested in electricity and radio, so I started reading the Radio Amateurs Handbook and figured out how to build a crystal radio set.

Q: Did you read basically the children's classics?

MAYBURY: Yes, as I said earlier, I read many of those, but in addition we were more or less expected to read the youth periodical published weekly by the Nazarene church. I always read the comics in the local Sunday newspaper, but never on Sunday itself: our parents would put the newspaper away until Monday and then we were able to read the comics.

Q: You couldn't?

MAYBURY: No, not on Sunday; only later in the week.

Q: You mean if you were told you couldn't read the Sunday paper this meant of course you would devour it?

MAYBURY: No, I didn't even think of opening it on Sunday, nor do I remember feeling any sense of resentment that I had to obey such rules. In my overly conscientious way, I simply thought such rules were normal.

Q: What about on holidays and all? They'd allow fun at Christmastime?

MAYBURY: Oh, sure. We had very cheerful and happy Christmases, both in our home and at the church. At home, we always had a big Christmas tree well decorated and surrounded by gifts, which we opened on Christmas day. We would then go outside and share our gifts, especially any skates or wagons, with the neighbor kids. At church, usually a few days before Christmas, there was always a worship service featuring Christmas music by the choir and a pageant with kids dressed up to portray the manger scene. At the close, we received boxes of Christmas candy. I also remember going with a group of church member early on Christmas morning to sing carols from the street in front of the homes of other church members.

In the summer, for example on the Fourth of July, we had church picnics, which were fun-filled times, with food and ice cream and that kind of thing. I was always the fastest runner among the young people, kids of the church families. I cannot recall any constraints or restrictions my parents placed on us at these events, and of course, there was never any tobacco or alcohol, all completely forbidden by the Nazarene Church.

Q: How about movies?

MAYBURY: Oh, movies. They were completely out of the question. In fact, I never darkened the door of a movie theatre until after I had returned from my Navy experience. Let me tell you about my experience with entertainment during my days in the Navy. On my ship, an LCI, I was a young officer along with four other officers. During the night hours after dinner, while one of us had to be on the bridge standing watch for four hours, the other officers would gather in the officer's stateroom and sit around playing cribbage. However, I would not let myself even touch the playing cards, for playing cards was one of the many minor restrictions a Nazarene was expected to observe. But because I wanted to be with my colleagues, I decided to at least sit with them at the table. I agreed to move the pegs on the board for them, but I never let myself touch the playing cards.

Q: You can have a couple of feelings on something like this. You saw other people doing this and you could see that they were not evil people either, but you were one of the elect or select. I am not sure in your religion if there is the elect. That's the Presbyterian.

MAYBURY: No, there's no such belief among the Nazarenes, so I did not have the idea that I was selected or was among the elect! No, I was simply exhibiting the hyper-conscientiousness that characterized me from my earliest days and that I was still showing even as a 21 year-old college graduate and naval officer.

Q: But that you were, quite frankly, a lot better than them or the other one was you were being deprived.

MAYBURY: No, I didn't feel any of these, I assure you. I had no feeling of superiority at all; I was simply sincerely adhering to my scruples, that's all.

Q: Let's talk about a few of the issues that were around but not being much done with. Race, particularly. Did issues of race come up at all?

MAYBURY: Never. I don't recall ever seeing a black person, in fact not until I saw the black steward on our LCI. I can honestly say I did not then, nor have I ever since, had any conscious racist feelings. I do recall that my father in particular was not too charitable in his remarks about Catholics, though he joined other ministers in the customary interfaith services of each town we lived in.

Q: How about the writings of the man who was writing about being an atheist (I am not sure Ingersoll is the right name) of that era?

MAYBURY: I really don't remember reading any of his writings in those days, although I am now fully aware of the position on religion he espoused as well as the writings on this genre of others, such as Dawkins, etc. I'll have more to say about my thinking about religion when we discuss my graduate school days

Q: What about events in the world when Hitler was in power in Germany?

MAYBURY: I remember about the year 1935 hearing Hitler over the long-distance station on our Philco radio. He was shouting in the German language to a large group of people. I do not remember having a wider awareness of the world situation at that time. However, I remember in junior high school at that time we were reading The Weekly Reader. In one issue I saw a map of Austria showing an image of a wolf labeled "Germany" swallowing up this country. While I realized that was bad for Europe, I don't recall thinking this raised fears that the U.S. was facing any dangers.

Q: So you were able to keep up with world affairs?

MAYBURY: No, not in any significant way. I probably read a newspaper once in a while. I recall that missionaries visited our church from time to time and talked about the religious practices of people in countries where the missionaries were working, but I don't think I connected this to any awareness of what this meant about the general social, economic or political conditions of the societies in these countries.

Q: Where did your father and mother fit during the Depression politically?

MAYBURY: They were always strongly Republican. However, despite the 1930s being years our family was definitely touched by the Depression, I don't recall that we ever talked about being in poverty, nor of how the political situation at that time affected us. As I think about this now, I find this most surprising, for I recall standing in a bread line each week to get free bread for our family and I recall my mother handing out food to unemployed men who appeared regularly at our kitchen doorstep, apparently unemployed men who were riding the railroad as was common in those dismal days. No doubt, being a minister's family made a difference. For example, I remember frequently going to the local grocery store with one of the members and taking along a basket into which the member would drop several grocery items for me to take home.

Q: Was Roosevelt an object of hate or of dislike or how would you feel within your family?

MAYBURY: As I just said, I can't recall that there was ever any political talk in our family. So I never heard either of my parents make comments about Roosevelt, other than that they were not at all pleased that he canceled prohibition in 1933. I realize that I myself had no political opinions before I went off to college. However, once Helen and I were married, we registered as Democrats, recognizing this to be the socially responsible position.

Q: Let's talk about science. How did science creep into your life?

MAYBURY: I first showed interest in science when I was about 12 years old. We were in Ephrata, Pennsylvania, where I set up a route to sell the Liberty Magazine. I got green vouchers for every 20 or so issues I sold. After I had acquired sufficient vouchers to

obtain a prize from the catalog, I got a small microscope and then went to the home of Mr. Hammond, my math teacher in junior high, and asked for his help in using the microscope. I had won his friendship in the classroom, for I was a very good student and, in fact, he encouraged me to develop what I thought was an original way of solving the area of a geometric figure. In any event, he spent time with me helping me to use the microscope, so I got busy and looked at a variety of objects. I also got interested in electricity, so I bought a copy of the Radio Amateurs Handbook and was able to build a crystal radio.

I still have a small booklet with the title Why I want to be a Chemist that I wrote in ninth grade in Allentown. I simply can't remember what specific event or contact led me to choose this particular science. Maybe it was the general science course I had in eighth grade. When we moved to Allentown, I built a small chemistry laboratory in the basement of our parsonage.

Q: Did you ever get a Gilbert chemistry set?

MAYBURY: Yes, I started with that, but I expanded it by using my school lunch money to buy test tubes and beakers as well as chemicals. I had bottles of permanganate, sodium hydroxide, hydrochloric acid and so on, with labels I put on them and arranged on the shelves so I could do experiments in my little laboratory.

Q: Did your science teachers, I take it, encourage you in this?

MAYBURY: Oh, they very definitely did. At Allentown High School, I elected to take the science and engineering course, so when my chemistry teacher learned I had built a laboratory at home he let me bring chemicals home so I could carry out experiments beyond those we were doing in the classroom. By graduating as number three in my class, I was awarded a scholarship to Lehigh University, but as I said earlier, my parents insisted I enroll at Eastern Nazarene College.

Q: How would you rate the science education you got at Nazarene?

MAYBURY: In addition to the chemistry courses I had with Dr. Shrader, a science major was required to complete courses in mathematics, so I took analytic geometry, calculus and differential equations. My days were obviously quite full, for the math courses were increasingly demanding and required intensive commitments of time each day while the chemistry courses included laboratories, further adding to the demand on my time, each course requiring me to spend a 3 to 4 hour of the afternoon in the laboratory, in some cases, 3 times a week, others 5 times a week. As I think back, I realize that James Houston Shrader was not what we would call an excellent teacher, but I acknowledge unhesitatingly that his influence on me at that time was absolutely fundamental. In particular, he was very insistent that you do good laboratory work, which as a serious student I did. All in all, my hard work paid off, for when I got back after the war, I was able to get off to a good start in graduate school at Boston University.

Q: You graduated from Nazarene when?

MAYBURY: June of 1944.

Q: Did they have an ROTC there?

MAYBURY: No. But as soon as I graduated from college, I was drafted and told to await orders to report to an Army receiving camp. However, I also applied for and was accepted for training as an officer in the Navy. After spending the summer at home, in September I reported to Fort Schuyler in New York City for three months of officer training. Then in December 1944, I traveled to San Francisco, California, to join my ship, a Landing Craft Infantry (LCI). When I walked onto the ship, the captain said: "Maybury, you will be the navigating officer and the gunnery officer." I replied: "Well, fine, but I had only three months in officer training school and had no time for celestial navigation!" So the captain said: "Well, tough, Maybury. You'll learn it on board." And indeed I did. In those days before radar, you did navigation by using a hand-held instrument called the sextant, a stopwatch, and the hydrographic office tables. A seaman would accompany me on the bridge while I took a sighting on a star, or the sun, and then call out to him the reading. He'd write it down along with the exact time from a stopwatch, after which I'd go down to the chart room and work on a drawing board to draft our exact location.

I could tell you some interesting tales about my duty as the navigating officer, but let me just say that the proof of my "learning it on board" was the success of our very first voyage, beginning on the first of January in 1945. We went from San Francisco to Hawaii and then on to the Philippines. Between Hawaii and the Philippines lay Eniwetoc, a small islet in the center of the Pacific, so sailing from Hawaii to Eniwetoc took us a week. For five of those days, we were caught in a raging tropical typhoon, a storm that sank three U.S. destroyers, while our small, flat-bottomed LCI bobbed on the giant waves with our only problem being the sea-sickness of our crew. With no sun or stars on which to turn my sextant, I simply had do what is called blind navigating, making an estimate each day of the direction the waves were moving, then how strong the wind was blowing and finally knowing our speed. So I used this information to estimate our location on the map and imagine my delight when, on the sixth day, the sun broke out and there directly ahead of us was that little islet of Eniwetoc.

Q: This was the LCI?

MAYBURY: Yes, the LCI.

Q: I remember first seeing them. They had places along the sides where troops would run up and down them. They would land and stick their nose in the beach.

MAYBURY: We were a modified version, having bow-opening gate. We had five officers and 20 sailors as our crew. Instead of the 40 or more soldiers usually carried in the hold of an LCI, we had 500 spin-stabilized rockets stored in our hold, experimental

devices developed by Cal Tech and loaded on our ship in San Francisco. To launch them, we had angle-iron launchers welded to both sides of our main deck.

Q: One can watch movies of landings in places and you see these rockets going off from these LCIs.

MAYBURY: That's right. In the battle of Okinawa, my job as the gunnery officer was to fire those rockets. I was on the bridge and had to push an electric button that fired 10 of those at the moment our ship's heading was just right. I had organized the seamen to bring the rockets up from the hold and load them into the launchers at each firing session. This went on for several hours during the opening hours of the battle

Q: Were you aiming the ship?

MAYBURY: Yes, I had to aim the ship by calling down from my position in the conning tower to the helmsman to bring the ship to a designated compass reading and also by calling down to the engine room seaman to stop the engines at the place where I estimated we were the required distance from the shore. There were about 10 LCIs in our group all firing these rockets at the same time. Incidentally, a month before the battle, the Navy sent to our LCI a large box full of charts showing the outlines of islands and the depths of the waters in the area around Okinawa. I had to use these to determine the exact location we should place our LCI in and the heading we should have when we fired the rockets, for we also had received by radio the instructions about the area in the island of Okinawa where we were to have our rockets land.

Q: What happened? I know when our troops landed on Okinawa, the Japanese weren't there. They had all very cleverly dug in and were able to really absorb the landing that they hadn't been able to prevent.

MAYBURY: That's right. It was a terribly fierce battle and was really Hell, with shrapnel striking our bridge and landing all around us, but luckily we weren't hit by any major explosive. I saw dozens and dozens of Japanese pilots sitting in their small fighter planes, coming overhead and then turning to dive directly into one of our U.S. ships. I saw this repeatedly during the battle.

Q: Kamikaze.

MAYBURY: Kamikaze, yes. Very sad to see this.

Q: This was really the bloodiest battle that the Navy fought and it was particularly because of the kamikazes.

MAYBURY: Absolutely. I also remember that we pulled a few of them up on our anchor.

Q: What sort of armament did you have to fight the kamikazes? Machine guns, I guess?

MAYBURY: On our bow we had a five inch, twin barreled gun. A gunner sat on each side and could raise or lower it before firing. I was up in the bridge wearing earphones and microphone so I could order these gunners when to fire or not to fire, because I was spotting the planes flying overhead, especially any coming at us. I think I saved one American flyer's life because I recognized that the plane coming towards us was not a Japanese zero, so I said "hold your fire, guys." They did and that plane went right over us. I always felt I could take credit for saving that one wartime life.

Q: How long were you off Okinawa?

MAYBURY: We had been in Leyte Harbor in the Philippines for about two months before the battle and then in and around Okinawa for about a whole month beginning with the actual day of the battle. At night ours and many other LDIs would be sent out to where the battle ships and aircraft carriers were anchored so we could make smoke from smoke generators located on our fantail to cover these large ships. We of course stood out plainly in the moon light, but the Japanese never bothered with us small fry! After that month or two after the Okinawa battle, things calmed down.

Then the atom bomb was dropped, as you remember. Then, they had to find something for our small LCIs to do, so a large group of us were sent to the Yellow Sea between Korea and China and ordered to travel behind minesweepers that were cutting the cables of the mines. Once the cable was cut, the mine would bob up to the surface and our gunners standing on deck would fire 30-06 rifles to explode the mine. This was extremely hazardous for our ships, for we were generally going so slowly that we could barely maintain steerageway. If we got too close to a mine, we risked being blown up by the mine. We carried on this operation for over a month.

Q: You were in the Yellow Sea?

MAYBURY: Yes, in the Yellow Sea between Korea and China.

Q: How high into the Yellow Sea did you get?

MAYBURY: I don't recall how high up we went, but we didn't land in Korea. Instead, after it was decided we should leave this mine-clearing operation, we were ordered to Sasebo in Japan, where we entered an enormous dry dock to have our ship's barnacles cleared by the Japanese workers. We were able to go ashore each day for a couple of weeks and walk around the town. The town had been completely flattened. After leaving Sasebo, we took a short tour around the coast of Japan and looked from our ship's deck at the town of Nagasaki, which had been flattened by the second nuclear bomb.

Q: The Yellow Sea, I used to swim in the Yellow Sea during the Korean War. I was stationed on an island above the 38th parallel off the North Korean coast. You probably steamed by us all the time.

MAYBURY: We cleared the seas for you guys to have no more mines.

While I am describing my days at sea on the LCI, let me tell you what I did on that ship beyond my duties as navigating and gunnery officer. I also took on being the voluntary chaplain! Every Sunday morning, I would swab the deck of the large space just outside our officer staterooms where the 30 enlisted men could sit at tables during their hours off duty and play games or listen to phonograph records. I'd then clear the tables and put up chairs for the morning divine service. Once people assembled, I would stand up and read a selection of the Bible, lead the singing of a hymn from the Navy hymnal and then deliver a short message, closing with a prayer. Over many months at sea, I would do this every Sunday morning.

Having gotten out of the dry dock in Sasebo, Japan, and taken a look at what Nagasaki after being hit by the atom bomb, we got orders in December 1945 to return to the U.S. and wait for our officers and crew members to be mustered out. The schedule for mustering out depended on each person's rank and time of entry into the service. So we set sail for Hawaii and then to San Diego and anchored the LCI at Ford Island. Since I was number four among our officers, I expected to face a long wait, possibly several months, before I could expect to be mustered out.

Imagine my surprise when in early January 1946, I received a cable message signed by a high naval officer stating that I should leave the ship immediately, report to the Navy office in Boston, Massachusetts. After being released from duty, I was to report to the Eastern Nazarene College to teach the courses of Dr. James Houston Shrader who had suffered a heart attack. I left the LCI that evening and boarded a Navy airplane scheduled to fly overnight to Washington. From Washington I took a train to Boston and reported directly to the president of ENC.

Fortunately, I had carried with me on the ship a copy of the physical chemistry text book

I had used in college and had studied almost daily all time I was at sea. So I wasn't too worried over having to tackle Dr. Shrader's course on general chemistry, even though I had not yet started graduate study in chemistry.

Q: You had been to Boston University?

MAYBURY: No, not up to that point. But, besides teaching the chemistry course, I lost no time in enrolling in Boston University to start my graduate work in chemistry.

Q: It is interesting the Navy was responsive to the need of ENC.

MAYBURY: Apparently the president of ENC appealed to Senator Saltonstall whom he knew and sought his cooperation in getting the Navy to release me.

Q: Senator from Massachusetts. And a very powerful figure.

MAYBURY: Yes.

Q: Boston University was basically Presbyterian?

MAYBURY: It had been founded as a Methodist college, but by that that time it was completely secular. Today as you know it rates high academically along with MIT and Harvard.

Q: I got a master's degree at Boston. I came out of the Korean War.

MAYBURY: Were you up on the Charles River campus then?

Q: Yes.

MAYBURY: Well, I didn't start there. When I entered Boston University in January 1946, its main building was an old four story brownstone building located on Boylston Street behind the Boston Public Library. All the classrooms and laboratories were in that building. When I began research for my master's degree, my professor had me work in his second floor office on a high vacuum line he had built there, a series of glass tubes and valves mounted on an iron frame. One day I accidentally knocked over a small bowl of oil I was heating with a flame from a Bunsen burner. The oil spilled all over the wooden floor and caught fire, filling the room with a huge ball of smoke. I ran out into the hall and shouted "fire," and in less than 10 minutes, five fire men came running up the stairs and started chopping the floor with their axes. Miraculously, they did not break a single piece of that high vacuum line, but I spent the rest of that day trying to clean off the black soot that the fire and smoke had deposited on the books in the shelves, the books of my professor who was absent that day. I went home that evening, covered with soot from head to feet. Early the next morning, about 5am, Helen awakened me and said we must go at once to the hospital - - it was the birth of our first son!

In the spring of 1948, I moved my equipment and books to a laboratory building located on the new Charles River campus. This laboratory building of the chemistry department was located in a Quonset hut standing next to the new buildings of the Marsh Chapel and School of Theology.

Q: I went to Boston University in '54, '55.

MAYBURY: By that time, I realize it had developed considerably from what it was when I moved to Charles River campus.

Q: Did you find Boston University, while you were there, to have a religious component?

MAYBURY: Not at all.

Q: They did have a theological school and Martin Luther King was going there between when you were there and I was there.

MAYBURY: You are right, I remember that well. But I was not involved in any of the religious programs of Boston University. But I can tell you that once we were located on the Charles River campus, there were many times during the day I would slip away from my laboratory work and go over to the library in the classroom building just beyond the Marsh Chapel and go up to the open stacks and hunt for books on philosophy and religious issues. That's where I discovered a book that was a significant eye-opener to me, Albert Schweitzer's book The Historical Jesus.

Q: Open stacks. I loved it there. When did you get married?

MAYBURY: Helen was a senior when I came back from the war in January, '46. She was extremely busy as the editor of the college yearbook, so we agreed to wait for her to finish her senior year before we got married. Our wedding was on June 1st, 1946. A year and half later we had our first son.

Q: What was she doing after she graduated?

MAYBURY: She enrolled in graduate school at Boston University and practically earned her master's degree in English, but had to drop out when our first child was born.

Q: Did you find, particularly after your experience at sea and at war, when you came back, was it hard to adjust?

MAYBURY: No, I don't recall having any problems with adjusting to being back in the U.S. On arriving in Boston after leaving my ship in San Diego, I went directly to Eastern Nazarene College and, after getting settled in a boarding room nearby, I came each day to the college campus and began teaching Dr. Shrader's basic chemistry course. I also lost no time in enrolling in the graduate school at Boston University for graduate study in chemistry. One day in that first year, I received a check for $500.00 as my mustering out pay from the U.S. Navy. I also then turned down the offer to remain in the Naval Reserve. After Helen and I were married in June 1946, we looked around for a place to buy and found for $7,000 a double-decker house with apartments upstairs and downstairs located at the edge of the campus. I used my $500 mustering out pay to make the down payment on a 30 year mortgage.

Q: A good GI loan.

MAYBURY: That's right. We moved into the lower story apartment and rented the upper story to a family, a German teacher in the college. That helped to supplement my very limited income from teaching at the college.

As I just said, I had no problems adjusting to life back home, for my time was fully absorbed in teaching at the college and in tackling my graduate courses at Boston University. Of course I also found time to be with Helen each day, despite her very heavy schedule as a senior at college and editor of the college yearbook.

As Dr. Shrader gradually recovered from his illness, he soon returned not only to his teaching at the college, but also found time to share his thinking and religious concern with me. In fact, this enabled us to develop a far more meaningful relationship than the simple professor/student relationship of my college days and helped me personally as I continued the praying and thoughtful reading that had helped me recover from the struggle of my college days.

Dr. Shrader had contacts with a number of the scientists at Harvard and MIT, especially those he had known when at Johns Hopkins. Several of these were participating in an organization called the Institute of Religion in an Age of Science (IRAS) that was headed by Ralph Burhoe, Executive Secretary of the American Academy of Arts and Sciences in Boston. Dr. Shrader had also joined this organization, so prior to one of their regular meetings, he invited me to accompany him to the meeting. After attending a few times, I was accepted in the group. IRAS held its annual meeting each summer for a week-long period on Star Island, just off the coast of New Hampshire. They always invited distinguished scholars in theology, philosophy and psychology, as well as in the sciences, to join them in discussions that explored relations between science and these other disciplines. Attending these annual meeting gave the opportunity to hear discussions among such world figures as Paul Tillich and Reinhold Niebuhr in theology, as well as such leading scientists as the Nobel Laureate, George Wald of Harvard and Harlow Shapley, the eminent astrophysicist of the Smithsonian. This proved enormously stimulating and advanced my understanding in both philosophy and theology.

Although my teaching and graduate study were keeping me busy, I realized my continuing association with Dr. Shrader was helping me to expand my intellectual horizons. These were further widened to include the area of foreign affairs when he urged me to attend the organizational meeting of a nonprofit organization, World Neighbors (allied with the Point 4 program of the U.S. Government), in Columbus, Ohio, and paid my airfare and registration fee. World Neighbors sought to raise interest among Americans in getting help to the world's developing nations whose peoples suffered widespread poverty and diseases.

Dr. Shrader also asked me to join him in organizing a group of men from the college for discussions on the relations between Christian faith and human knowledge. The group met monthly in my home for stimulating discussions, often around a book he considered likely to broaden understanding of religious faith beyond the traditional Nazarene fundamentalist position. At one of these meetings, discussion turned to the subject of the Christian belief in the Virgin Mary. I spoke up expressing my doubt that a Christian must accept this belief. The next day, the president of the college asked me to report to his office and informed me he had learned of my comments expressing doubt about the Virgin Mary. He explained that teachers at Eastern Nazarene College must be loyal to the Nazarene Church positions, so in view of my questioning this position, he had no alternative but to terminate my contract with the college that very day. I did not argue, saying I regretted his decision, but would simply turn my full attention to my graduate study.

I felt no grief over separating from teaching at the college, realizing for the first time that my thinking had obviously carried me beyond an unquestioning acceptance of the Nazarene position on religious faith. When I reported to Dr. Shrader what the college president had stated to me, he agreed I had acted responsibly in not arguing with the president and urged me to continue meeting with the men's group, which I did for a short time. However, because the pace of my research at Boston University was intensifying, I soon found it necessary to move with Helen and our one child to Boston and rent an apartment near Boston University.

Q: Let's go back. When you were getting a PhD, it was in chemistry, is that right?

MAYBURY: Yes, in the chemistry department of the graduate school of Boston University.

Q: What was your specialty?

MAYBURY: Physical chemistry. I studied with the same professor, Lowell Coulter, for both my MS degree and my PhD. I was his first graduate student, for he had joined the faculty of Boston University after getting his doctorate at University of California under Kenneth Pitzer, a student of the Nobel laureate, Gilbert N. Lewis. For my MS I studied the thermal properties of the alkali metals, lithium, sodium, cesium, etc., when they are dissolved in liquid ammonia; for my doctorate I studied the compressibility of these alkali metals in liquid ammonia. Both studies in liquid ammonia required a great deal of glassblowing to build a high vacuum line, for work with liquid ammonia is carried out in a vacuum at a very low temperature (minus 33 degrees Celsius. I published two or three publications in peer reviewed journals from this work and enjoyed it very much.

Q: What were you looking at as you got into chemistry? For your future?

MAYBURY: All through high school and college and on into graduate school, I maintained a solid determination to be a chemist, but I don't remember having in mind any special focus on a particular field of chemistry. As for the type of chemist I thought I would be, I don't think I gave too much thought to whether I wanted to be in industry or in government, but I always wanted to be in research. Hence, after finishing graduate school and heading for post-doctoral study, I considered several research opportunities, including one in the study of electrolytes with Victor duVignaud at Columbia and one in polymer chemistry at Harvard University.

Eventually, my decision was to carry on research in polymer chemistry, so I contacted Paul Doty, an outstanding scientist at Harvard in the field of polymer chemistry. He suggested I consider research on proteins as more to my liking and proposed I talk with John T. Edsall at the Harvard Medical School. John Edsall was one of the leading protein chemists in the world at that time and author of the book by Cohn and Edsall on proteins, the "Bible" on the subject of proteins. He agreed to accept me as a post-graduate student and for the next two years I carried on research on proteins in his laboratory at the

Harvard Medical School. Also working with John Edsall at that time as a post-doctoral student working was Ephraim Katchalski, an Israeli who later became the prime minister of Israel under the name Ephraim Katzir.

Katchalski and I worked together in Edsall's laboratory carrying out research on serum albumin, a protein found in human blood. We used a technique called light scattering, which shines a light beam on a glass tube containing the protein dissolved in water and measures the scattering of the light by the protein molecules. We added mercury ions to the albumin, causing two albumin molecules to link up through their sulphur atoms. In other words, the two albumin molecules form a dimer, a double molecule. We followed this dimerizing process by measuring the scattered light over time. That was a fairly simple technique, but it led me to undertake further studies on protein molecules. Katchalski and I published the results of our research in two scientific papers with the names Edsall, Katchalski and Maybury. This research was helping me to deepen my understanding of the chemistry of protein molecules.

Q: You are really speaking to a novice. Chemistry wise, what is the importance of proteins?

MAYBURY: Proteins are now recognized as a key molecule in the biochemistry of our bodies and in all biological life. Today, we know that the protein molecule mediates between the gene and the actual target organ in the body, so we are now more focused on protein molecules than ever. But when I was doing my post-doctoral research at Harvard, we didn't even know about the existence of the DNA molecule, which today seems to be the center of attention, especially in health and medical research. So understandably, at that time, research was focused on the structure and behavior of the protein molecule. There are days now that I wish I had stayed in my laboratory, I really do. Every issue of Science I open up now deals with the field of proteomics - - the functions of protein molecules in biological systems - - so proteins are now recognized as important, if not more so, than DNA. But as I just said, in the days I was tackling my post-doctorate research at Harvard, nobody knew about DNA. Genetics had not yet arrived on the scene.

Q: As I came to this meeting this morning, they had two men talking about the use of DNA for storing the world's knowledge. Apparently, DNA can store incredible amounts of digital information.

MAYBURY: Of course.

Q: They see this as being perhaps a path for putting the world's knowledge into DNA where you can retrieve it 100% and all. It is very interesting.

MAYBURY: Nature of course has used DNA right from the beginning, whenever the first molecule, the first living object created, had to have some way to control what goes on biochemically in it. All life involves biochemical activity. A cell contains a nucleus and inside this nucleus there are a number of chromosomes. These chromosomes are simply strings of DNA, each DNA having four units, symbolized as C, G, D, and T,

arranged in many different orders. These can be considered to be the alphabet of life. It is impossible to believe that those four can give rise to millions and millions of possibilities, but they do.

The protein molecule, by the way, is an intermediary between that DNA and a target. The message is carried from the DNA to an RNA, which is similar to the DNA. The mobile RNA then tells a protein molecule how to function. Our hormones are protein molecules, our enzymes are protein molecules. These do the actual work in the body.

Q: Was there a movement afoot within the field of chemistry, particularly to take a look at nutrition throughout the world because we were beginning to take the world look at problems.

MAYBURY: Although today there is an enormous amount of research in chemistry, biochemistry and pharmaceutical chemistry directed globally to ameliorating health and nutritional problems, I don't recall this broader concern among the chemists when I first got into teaching and research. Their concern at that time was on proteins, for example, on understanding the structure of the protein molecule and how this influenced its functioning as an enzyme, or a hormone, or some other biological action. I sat through many, many seminars at Harvard medical school, in particular, and mingled with other post-docs who were studying medicine, some of whom became leaders in medicine, but I don't recall any discussion at that time among the chemists in my group about the problems of world hunger and nutrition.

Q: How stood things at that period, we are talking about, really the post war period, as far as internationalization? Was the United States sort of the center or were there other areas where this was being studied?

MAYBURY: I think the U.S. was at the center for any number of things. Certainly in science, but also in such areas as the military the war demonstrated American superiority. Also in the economic field, it was a leader, witness the Marshall Plan showing the U.S. willing to support the national recovery of war-devastated countries throughout Europe.

Q: I was going to say Germany had always been sort of at the forefront of research. The war wasn't over that much, but German know-how was sought after.

MAYBURY: In graduate school I can remember that in Boston University we had to know French and German and know it well. In fact, I even studied Russian for one year. That was back in the '40s and '50s. I remember in organic chemistry in graduate school we had to do experiments out of Beilstein, the Bible of organic chemistry. It was the work of German chemists, describing in detail their experimental procedures with alcohols, aldehydes, ethers, esters and the like, all from their laboratories in the 19th and early 20th centuries.

Q: So you were at Harvard and then what happened to move you elsewhere?

MAYBURY: Even before my two-year post-doctorate at Harvard, I was convinced that teaching in a liberal arts college was what I wanted to do when I completed my post-doctorate. This no doubt reflected my experience teaching Dr. Shrader's courses at ENC, I had an additional experience around this time that also strengthened my decision to teach at a liberal arts college: I attended a conference for college teachers organized by the Danforth Foundation, a foundation funded by the Danforth family, owners of the St. Louis industrial firm of Ralston-Purina. The foundation was playing a prominent part nationally in promoting the liberal arts college in the U.S. and provided grants to professors in liberal arts colleges to deepen their commitment to the liberal arts ideal and thereby intensify their impact on their students.

At this Danforth conference, I met the foundation's president, Dr. Kenneth Brown, and spoke with him about my desire to teach in a liberal arts college after completing my post-doctorate at Harvard. He took a sincerely personal interest in me and said he wanted me to keep in touch with him, especially if he could help me in searching for a teaching position.

I was winding up my research at Harvard in May 1953 when I received a telephone call from the Dean of the Harvard Business School. I was puzzled because I had not previously contacted that part of Harvard. He knew I was interested in finding a position at a liberal arts college on finishing my post-doctoral research and asked to visit me to discuss an opportunity in chemistry in a liberal arts college he and a group of his colleagues were representing. The next day, he and two others came to my laboratory, explaining that they represented the search committee for the College of Idaho, a small church-related liberal arts college in Caldwell, Idaho. They said a wealthy benefactor, Jerome Simplot, the owner of the vast agricultural complex throughout the North Western states, especially known for their potato products, had donated a large sum to this college in hope of upgrading it to be a "Harvard of the North West." They were assisting the president of the college to identify outstanding professors from other universities whom he could attract to be faculty of the college. They agreed to put me in touch with the president and would ask him to send me full information about the college and specifically about my appointment and salary. In due course, I received this information and, after giving it careful thought and discussing the move with Helen, I signed a contract for one year and agreed to arrive in Caldwell in September 1953.

Actually, several months before the Harvard Business School Dean had contacted me about the opening at the College of Idaho, I was concerned about having a job after finishing my post-doctorate, so I had applied to Argonne National Laboratory near Chicago, Illinois, for a summer research position. Argonne responded, awarding me a three-month research position with J. J. Katz, a leading physical chemist at Argonne. On completing my post-doctorate, I sold our home, shipped some items to Idaho and packed the remainder along with Helen and our three children in our car and set off for Chicago. On arriving there, we settled our summer housing and I met J. J. Katz at Argonne to agree on my research topic, a study of the properties of protein molecules dissolved in liquid hydrogen fluoride. On completing that research, I published a paper in a peer reviewed scientific journal.

We then continued our drive to Caldwell, Idaho, arriving there in early September, 1953, to begin my first year as a professor of chemistry in the chemistry department of the College of Idaho. Our housing was an apartment in a complex at the edge of the campus, where we soon became acquainted with five or six other newly arrived faculty members, professional people not only from other universities in the U.S., but also from countries abroad, evidence of the success of the search team under the Simplot funds.

My first meeting with the head of the chemistry department proved disastrous, for he instantly sized me up as a young radical and adopted a negative posture with me from the very beginning. He opposed my idea of engaging in research, insisting that my responsibility was to teach the three chemistry courses he assigned to me. I was crestfallen, but decided to behave as cooperatively as was possible with him. Much more rewarding was the fellowship I soon found with several of the other faculty members, several being the newly acquired people, but also several who were long-term faculty members who were held in high esteem in the local academic community and even nationally.

As the year wore on, the relationship between the president, newly hired under the Simplot funds, and the faculty members began to exhibit disturbing problems, with a number of the new faculty members expressing questions about the leadership of the president and his educational policies. I, too, continued to experience the completely negative relationship between the chemistry department chairman and myself, although I was experiencing highly positive interactions with students in chemistry and beyond, especially with those interested in international affairs. When faculty members were invited to join a group of the students and become involved in the Model United Nations program, I agreed to join them. As I mentioned earlier, attending the World Neighbors meeting in Columbus Ohio several years ago had begun widening my concern for world affairs. This participation with the students in this Model UN program seemed the right thing to do. In January of that year, I traveled with the students Los Angeles for the week-long meeting of the West Coast section of the Model United Nations program.

I did make an effort to set up a research project on receiving a small grant from the Research Corporation, a foundation which granted me the status of Research Fellow during my graduate school days. The project did not succeed, given problems in the laboratory where I set up the work. I then wrote to Harry Lewis, a professor of chemistry at Reed College in Portland, Oregon, a distance of about 400 miles from Caldwell, asking if I could visit him to discuss my situation at the College of Idaho. Lewis was nationally respected as a professor who was demonstrating the success of engaging undergraduates in research. That year, I drove at least three times to Reed College to discuss undergraduate research visit with Harry Lewis and was encouraged by him not to give up my belief in the value of this practice to the training of undergraduates.

But as the end of this first year approached, faculty meetings became so unproductive owing to the disillusionment of most of us in the faculty with the leadership of the president that a group of us resigned in June 1954. As I think back on this, I am highly

critical of my own failure to plan this crucial move so that a prospective employer would not be biased in considering my application. Clearly, I made a mistake to resign before first having obtained a contract with another employer or otherwise. But fortunately, while I was continuing my search for a new employer, J. J. Katz welcomed me back to Argonne Laboratory for the second summer of research. I summarized the results of the research in a paper entitled "The protein denaturation in heavy water" and published this in the publication Nature in London.

While at Argonne Laboratory, I realized the need to begin a search for an opening at the end of the summer, but then began to question whether I should look for a teaching job in another liberal arts college, or whether I should broaden my search and consider a research job instead. Several friends actually urged me not to interrupt my development as a research scientist and one of these, Ephraim Katchalski, wrote from Israel and invited me to join him in research at the Weizmann Institute in Tel Aviv. However, another friend, Kenneth Brown, President of the Danforth Foundation, intervened at the time by pleading with me to not abandon my commitment to teaching and suggested I consult the files of the College Bureau in Chicago for openings in colleges throughout the U.S. In the end, I went in to the College Bureau, where I found the listing of the University of Redlands seeking a qualified person to fill a position as professor of chemistry. The University of Redlands is a very good liberal arts college in California and encourages a professor to engage undergraduate students in research along with their course work. Since this matched the kind of opportunity I hoped to find if I intended to remain in college teaching, I made up my mind to submit an application and await the results.

My application was accepted, so in August 1954, Helen and I again packed up our appropriate belongings and drove with our youngsters to Redlands, California. This began my 10-year association with Redlands from 1954 to 1963 as a professor teaching analytical and physical chemistry along with carrying on research in protein physical chemistry. I was fortunate in receiving sizeable grants for my research from the American Heart Association, the National Science Foundation, the Research Corporation, and the National Institutes of Health (NIH). With these funds, I was able to equip my laboratory with the most advanced instruments at that time for research on proteins, including an analytical ultra-centrifuge and an infrared spectrophotometer. The NIH grant also enabled me to obtain a post-doctoral scientist as a colleague.

One of my colleagues in the science department was the professor of physics, Dr. Albert Baez, father of the folk singer, Joan Baez. Joan grew up in Redlands in the days we were there, so we remember her as a little barefoot girl running around with her guitar. Albert Baez was an eminent physicist with his doctorate from Stanford University. He had come to Redlands to teach and continue the research he had done at Stanford focusing on x-rays by use of Fresnel lens. Al Baez became a real friend and an inspiration to me all the years I taught at Redlands, for in addition to carrying on his own research, he engaged his students in research. I found his support to my own efforts to draw students into research in chemistry absolutely crucial to my own efforts to engage my own students in research. Over the next ten years, we both gained wide recognition for our success in drawing

undergraduate students into research and both of us were getting grants repeatedly from funding agencies for this.

At the end of my first academic year at Redlands, I was invited to California Institute of Technology in Pasadena, California, to spend the summer months in research on proteins in the laboratory of the Noble Laureate, Linus Pauling. Several years later, in 1957, I was invited by Dr. Hans Neurath, a leading protein chemist, to spend the summer in research at the University of Washington in Seattle. Again, I found this opportunity to concentrate on research highly beneficial to my ability to remain abreast of the rapid advances occurring in the field of protein chemistry. That summer of research with Hans Neurath and his colleagues led to a publication of my research results and also to an invitation by Dr. Neurath to return to Seattle for a full semester to teach the physical biochemistry course in the medical school of the University of Washington. Again, these opportunities to work outside of Redlands kept me up-to-date in the protein field, benefiting my research and role as adviser to my students in their research.

Q: Was Redlands part of the Harvey Mudd?

MAYBURY: No, for that was before Harvey Mudd was founded.

Q: What do they call that complex?

MAYBURY: Harvey Mudd is now one of newer colleges of the Claremont group that includes Harvey Mudd, Pomona College, Claremont Graduate School and several others whose names I can't recall. In the 1950s Redlands was one the four liberal arts colleges in Southern California: Pomona College in Claremont, Whittier College, Occidental College and Redlands.

In my second year at Redlands, I was selected as a member of a special group being set up under a grant from the Ford Foundation. The group included several other faculty members from the four liberal arts colleges in southern California, the purpose being to draw us together to promote our professional and intellectual understanding of the liberal arts disciplines as faculty members of liberal arts colleges and thereby increase our capacity to influence the cultural development of our students. The Ford Foundation grant funds supported the group in convening weekly meetings to discuss specific topics and also purchased selected books for each participating professor. These funds also brought periodically eminent scholars such as Aldous Huxley and Paul Tillich to meet with our group for hours of discussion, an especially enriching component of the Ford-financed program. This extracurricular activity, over and above my regular teaching and research, brought me an added opportunity to broaden my outlook much as I experienced with the IRAS group in Boston.

Within a year of joining the faculty at Redlands, I was contacted by the California Heart Association and invited to serve voluntarily as the chairman of the Student Research Committee of the association. In that capacity, I worked with the members of the committee, 6 or 7 medical doctors and cardiologists, achieving the principal objective of

the committee, namely, to select each year a number of outstanding college students and award them grants to spend their summers in research with leading cardiologists in California. For the 10 years I was at Redlands, I served in this position, meeting with the committee members a full day once a month, either in Los Angeles or San Francisco, all expenses paid by the association. Each year, I was asked to address the annual meeting of the association and report on the work accomplished by the student grantees and also present my own paper discussing advances in the chemistry of protein. For my work with the California Heart Association, I was given the Distinguished Service Award.

In 1958, an officer of the American Heart Association headquarters invited me to New York to discuss the proposal of a television program. The plan included my travel to New York once each week over a three-month period, each time to prepare a televised interview with a leading cardiovascular research scientist. They also asked me to write a small booklet entitled "Careers in Research," which they published for distribution with copies of the televised interviews. I wrote the booklet, but fate intervened when American Airlines refused to provide the heart association funds to meet the cost of my many trips between Redlands and New York. Fate intervened again even in a more saddening way. When they realized they were not able to have me carry out the interviews, they contracted with one of the most famous television stars of that time, a man who had a television program interviewing individuals enclosed in a booth, presumably in complete isolation. In reality, he was secretly in contact with the person in the booth. When this fraudulent situation was exposed, the American Heart Association destroyed the entire series of televised interviews, for they were inacceptable for use in schools throughout the country.

These mind-stretching opportunities I was having at Redlands enabled me to respond favorably to several invitations to present lectures, especially on the subject of science and its relationship to human knowledge. The professor of the humanities course at Redlands invited me to lecture on this subject a number of times each year. I also began to receive invitations to present the commencement addresses at community colleges throughout the state of California. At the national level, where I had been serving as the Member-at-Large of the Committee on Chemical Education of the American Chemical Society, I was frequently asked to visit chemistry departments of other colleges in the U.S.

Kenneth Brown of the Danforth Foundation also continued his contacts with me, asking me to join the Advisory Council of the Associates Program of the foundation. In this capacity, I carried out visits to liberal arts colleges to discuss the Danforth Foundation program of faculty support. I also spent each summer at the foundation's encampment at Lake Miniwanca in their month-long seminar for faculty members of liberal arts colleges and one summer presented a lecture on science and religion. In 1961, the Danforth Foundation informed me that I had been chosen to receive their Faculty of the Year Award, providing a small grant I could use for any scholarly purpose of my choosing, including buying books, subscribing to periodicals, of paying registration fees at workshops.

Q: How did you find the students at Redlands?

MAYBURY: Redlands was a well-respected liberal arts college of a thousand students, similar to Pomona, Whittier and Occidental. Faculty-student relations were very good and I found many opportunities to talk to the students in small groups in their dormitories. I found the students to be genuinely open minded and inquiring, with wide interests in national and international issues of those times. In my 10th year, I was voted by the students as the faculty member of the year.

Nearly all the students majoring in chemistry science engaged in research with one of us in the chemistry faculty, including with the post-doctoral scientist associated with me and, as a result, most went on to graduate study at leading universities in the country. To show you what I believe what the impact of this undergraduate can be, let me tell you a recent incident. About four years ago, I was reading a scientific periodical and saw a research article written by a Joel Habener, Senior Endocrinologist at Harvard Medical School and Massachusetts General Hospital. Not being sure my memory was right, I decided to write him and ask if indeed he was the Joel Habener who was one of my students at Redlands in the 1950s.

He replied at once, saying yes indeed he was and invited me to visit him on my next visit to Boston. So a few weeks later I did visit him. When I went to laboratory, he opened the door and greeted me warmly and asked me to have lunch with him. We hadn't seen each other since he graduated from Redlands in 1959, but he said he was always grateful to me, saying his first scientific publication was based on the research he had carried at Redlands working on the ultracentrifuge I got under one of my grants.

Most of the research projects of my students at Redlands were generally on the chemistry of proteins, but let me tell you about the most memorable one that was on a different subject. While attending a national meeting of the American Chemical Society, I heard a lecture by Willard Libby, an eminent chemist in the field of radioactive isotopes, urging chemistry professors to familiarize their students with radioactive isotopes. I spoke to him indicating I would like to have my students work with me to develop laboratory experiments based on radioactive isotopes. He agreed to assist me, so he first invited me to his home in California to discuss his ideas more fully and give me relevant documents. Next, as an officer of U.S. Atomic Energy Commission, he requested them to award me a grant of funds for the work with my students at Redlands. With this grant, one of my honor students and I developed a series of experiments for secondary school students to perform.

The experiments were to be carried out using micro-curie levels of radioisotopes and a small Geiger counter made from a plastic tube with a wire running through it and connected to a battery and voltmeter. This could detect very low levels of radiation at the micro-curie level. In fact, ordinary potassium chloride is radioactive and gives enough clicks to calibrate the voltmeter. At that time, chemical supply firms were able to sell micro-curie quantities of radioactive compounds like radioactive sulfur and radioactive calcium compounds. My student developed a full series of experiments also pointed out

that which radioactive compounds are available in micro-curie amounts. He and I then wrote a paper entitled "The Use of Micro Curie Level Isotopes in Chemical Education," and published this in the Journal of Chemical Education .

In addition to getting my students at Redlands to engage in research with me, I also had freedom to try innovative approaches to my courses and held my examinations as oral exams, meeting each student individually in a one-hour session.

Q: When did Sputnik occur?

MAYBURY: In 1956.

Q: Let's go back say during the '50s, Sputnik really got things going in the States. Did chemistry benefit by this?

MAYBURY: When Sputnik went up, the reaction among Congress was not specifically focused on it, but it was soon focused on the academics. A physics professor by the name of Jerald Zacharias at MIT went to see his senator in Washington and said, "You people in Congress have got to allocate big bucks now to reforming American teaching of sciences in our high schools. We are in a deplorable state in this and we can't be that way and have the Russians putting things up like Sputnik." Zacharias was a well-known person in his field and had such force in his pleading with Congress that they allocated the National Science Foundation multimillions of dollars. In fact, the word among scientists was a 'Zach buck' – meaning a million dollars. From that money, the National Science Foundation funded curriculum reform programs in the sciences - - not only chemistry, but in physics, biology and mathematics as well.

Q: Maybe it's not possible, but was there sort of an unofficial rank order of sexiness, student accumulation, something between the four sciences?

MAYBURY: No, I think they were all equally energized. Each curriculum reform program proceeded in more or less the same way. Each selected a group of writers who met over a period of two or three years drafting a text book and teachers guide. They then held teacher training institutes which were held at universities for the three summer months. Each program also had specialists who were skilled in analyzing student responses and student learning in order to follow the course as the students used the texts and teaching aids of the program. Most of the programs also incorporated such teaching aids as 8 millimeter film loop, the technology of that day. In fact, programmed instruction was also given a huge boost through those programs. Materials were prepared in all these different teaching aids. Most important, all the programs then had their books adopted in high schools throughout the country.

In the case of chemistry actually two chemistry programs were set up, the Chemical Bond Approach program under a group of chemists at Reed College, Amherst, Brown University and Tufts University, and the Chem Study program under the American

Chemical Society. I was involved in one of the summer institutes of the Chemical Bond Approach program held at Earlham College in Richmond, Indiana.

The physicists did the same. The physics group was called the Physical Science Study Committee and was headed by Jerald Zacharias at MIT. He had brought Albert Baez to MIT from Redlands to head up the film making of the PSSC program. Baez also worked with Encyclopedia Britannica Company and built a large number of films, in fact movie films, actually, cinema. Baez also developed 8 millimeter film loops. Film making was his forte in addition to being very good physicist.

Q: Did you take an interest in foreign affairs during your time at Redlands?

My answer is definitely yes, but I should probably explain this in some detail. I don't recall having any big interest in foreign affairs when I first arrived at Redlands, although as I mentioned earlier, in Idaho I had taken part in the Model UN program, driving students to Los Angeles for the week. But at some time later in the 1950s when I was at one of the national meetings of the American Chemical Society to report on my research and serve as the member-at-large of the division of chemical education, I was talking with some of the chemists about the problems the scientists in developing countries have to face. I must have been quite expressive about this, because I began hearing some of my friends mentioning "Maybury's Peace Corps." This was probably because the Peace Corps was being set up about that time and was in peoples thinking.

Again my memory is no help, because I simply can't recall who must have taken the step of initiating a formal proposal for a mission by a group of scientists. I presume it may have been one of the scientists to whom I had been talking about the problems of scientists in the developing countries.

Anyway, around that same time, since I had been at Redlands since 1954, I was thinking about taking a sabbatical leave. I therefore applied to the National Science Foundation for a faculty fellowship to begin in September 1961, again with John Edsall at Harvard University. I learned in mid-summer 1961 that NSF had awarded me the fellowship, so Helen and I with our five children left Redlands for Cambridge, Massachusetts. After renting an apartment, I went to meet John Edsall and discuss plans for the research project I would pursue that year.

Q: Your research, what particular field were you working on?

MAYBURY: The research plan I presented to John Edsall was again on the physical chemistry of protein molecules. Because he had moved from the medical school campus to Harvard's chemistry building, he arranged for me to have an office and laboratory space not far from him in the Radcliff College building at Harvard Square, a building that Radcliff College had just vacated and turned over to Harvard. The plan for research I presented to him was based on my reading an article on the ultraviolet spectrum of lysine (an amino acid with a NH 2 group). My idea was to interpret the spectrum for

information about the hydrogen bonding of the lysine when it is dissolved in various solvents. So I got busy building the apparatus for this experiment.

One day on campus I ran into one of my own students from Redlands who was then a graduate student at Harvard. We exchanged greetings and he then said to me: "Dr. Maybury, you really ought to be getting on to linear algebra. In your lectures back at Redlands I don't remember you ever brought up this topic in our physical chemistry course." I admitted I had not and was regretted this, but I never did follow up his suggestion. I now wish I had for I would have been prepared to handle the newer approaches to quantum mechanics that were becoming accepted. I was basically competent in quantum mechanics, but had not learned any of the matrices and mathematical techniques that are now commonly used.

While working in the Radcliff laboratory one day, my phone rang and the caller was Albert Baez, my former colleague at Redlands. He had been invited in 1960 to the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Paris and set up a science teaching division at UNESCO's headquarters. He called me to invite me to consider joining him as the chemist of his team. I promised him I would discuss this with Helen and give thoughtful consideration to such a move, but would first return to Redlands from Harvard to complete the following academic year.

Well, when I went home that evening, I said to Helen: "Al Baez called today from Paris and said he would like me to come there and work with him. Shall we do that?" Helen replied: "Why not? Let's do it." When I returned to Redlands in September 1965, I informed the president that I had accepted this invitation from Baez and would leave for Paris at the end of the academic year in June 1966.

The mood in those days had been set by John F. Kennedy's inauguration address, in which he said: "ask not what your country can do for you, ask what you can do for others." I am paraphrasing this a bit, but that gives an idea of the mood at that time.

My thinking at that time was along this line: I was becoming increasingly concerned about the needs of scientists in the developing countries, so I recognized being part of Albert Baez's program would give me a way to respond to some of those needs. So why not be part of it? I have so many privileges as a scientist here with opportunities and equipment that I could leave this and do something that seems the right thing to do. Whether I took a really deep moral approach or not, I would be dishonest to say that I know for sure that I did. All I know is, at that time it was a mix of feelings. One thing I know for sure, I was aware of the need, so I felt it was the right thing for me to do. In fact, that's what Helen and I and our five children did.

Q: We are talking about people and I was in the Foreign Service and all, there is a very strong component within the American psyche - -a missionary element- - and if you've got something to pass on, by God you go out and do it. Obviously, you saw the need.

We will pick this up on the UN the next time. You went to UNESCO when?

MAYBURY: June of 1963.

But let me get back to your earlier question about my interest in foreign affairs. Early in January 1962, having been at Harvard since September 1961 to work on research with John Edsall, I received a call from an officer at the State Department saying he was inviting a group of us to convene in Washington at a State Department office to prepare for a one-month trip to Pakistan. As I said earlier, I cannot recall which of my friends may have initiated the approach to the State Department to propose a mission by a group of us to a developing country. I wonder if it could have been Shafquat Siddiqi, a professor of chemistry from Peshawar in Pakistan who was a participant in the summer institute for the Chemical Bond Approach project that I taught at Earlham College in Indiana in 1957. It may well be that at that time, or even later, for I think I may have kept in touch with him for some years, that he suggested I consider coming to Pakistan to see the situation in science there. I am afraid, though, this may be pure speculation on my part.

In any event, the group of us, professors of chemistry, physics, biology and mathematics, gathered in a State Department building in Washington, where we met a State Department officer responsible for planning our visit to Pakistan. He informed us that the U.S. AID office in Pakistan had approved the idea of such a mission and would formally be in charge of all details of our visits to a number of BSc colleges in both East and West Pakistan. He made all arrangements for our travel, including obtaining our visas for our passports and provided each of us funds from U.S.AID Public Law 480 funds. Early in January 1962, we set off for East and West Pakistan, for at that time what is now Bangladesh was still East Pakistan, and we spent that month visiting 20 BSc colleges. At the end, we wrote a survey of our visits to the BSc colleges and submitted this to U.S. AID.

Q: How about when you got to Pakistan?

MAYBURY: We couldn't believe what we saw. Even to this day, I often describe what we saw in these words: "We went into a typical chemistry classroom and there was the teacher with his class and behind his desk a glass case with the door closed and the key in his desk drawer. Inside that cabinet you would see one test tube, one graduate cylinder, maybe one beaker and a bottle or two of chemicals - and that was the "laboratory." It was opened if the teacher unlocked the door and opened it to talk to the students about the equipment. That was the kind of laboratory we saw in a typical Pakistan classroom in a BSc college. What an eye-opening experience!

Q: Okay, the survey is done. What was the stated purpose of the survey? What we can do about it or?

MAYBURY: In asking me about this report, you are revealing something I now realize full well, namely, that at some point in my training, either in my undergraduate or graduate study, I should have had much more training in how to approach a situation or

problem systematically - - what today we would call a systems approach. You look at things as a system, so you see it in terms of its structure and the interconnections among the components. But I never studied or thought along such lines and wish I had, especially as I look back on this international experience I was privileged to have. It would have helped me to have such training because I realize now that, at the time, I did not even ask the question you asked me just now - - "what was the purpose of the survey?"

Q: What was the focus?

MAYBURY: The focus? I recall we were simply interested in getting the data, in describing what we saw.

Q: You have to start with the data.

MAYBURY: I agree, you have to start with the data, but when you begin the process of gathering the data, you should also have some framework in mind. In this way, you then can raise questions about the data that you can begin to give answers to by some approach.

By the way, since we are still talking about my interest in foreign affairs when I was at Redlands, if you agree I'd like to tell you about one more mission I was involved in while I was still at Redlands. When we completed that Pakistan mission for USAID, I returned to Harvard and continued my research with John Edsall until September 1962, when Helen and I drove back to Redlands with our kids and I resumed my teaching and research for that academic year. But in the Spring of 1963, Philip Hemily, an officer at the National Science Foundation (NSF), invited me to join a group of four other scientists and travel to Central America, where we would visit the science laboratories of all five countries, Nicaragua, Honduras, Guatemala, El Salvador and Costa Rica. We would then prepare a report for NSF. I remember this meant I would need to take off for a month from my classes and research.

Q: This was when?

MAYBURY: April 1963. The group of us traveled together, visiting all five of the Central American republics. I remember we went to each university campus and looked up the science faculty members in their laboratories. After discussing with them their teaching and research concerns, we would draft our report for that university.

Q: First in Central America; what were you finding and then what did you find as far as the state of their training?

MAYBURY: We saw their limitations, you know, the lack of up to date journals in their libraries and their isolation from the world science. They were largely focused on just teaching the routine science courses, probably from outdated textbooks and the like; poor laboratory equipment and that kind of thing. We tried to describe this in our report to the

National Science Foundation, called the report on CSUCA - - which in Spanish is roughly the Science Consortium of Central American Universities. Unfortunately, I no longer have a copy of that report, although I am in touch with the NSF officer who traveled with us, Philip Hemily. That was my second overseas visit and, as I said after being in Pakistan, I was deeply disturbed to see the problems scientists live with in developing countries.

Q: This is what you expected to find though, wasn't it?

MAYBURY: I am sure it was, yes, but to experience it literally, to be right there and see those teachers and find them working under such conditions was disturbing. I realized they were scientists who knew their subjects personally but were frustrated by their lack of the means to do what they would like to do.

Q: Okay, so you've got these two reports. What happened?

MAYBURY: To my knowledge, what is worse, I don't know that any of us ever followed up. That's another thing. With a proper framework, I certainly would have followed up. You don't invest your energy into collecting the data and then not follow it up. The report on our visit to BSc colleges in Pakistan was sent to USAID, the source of the funding. Although I don't recall that we included a requirement that there be a follow-up when we first proposed the mission to USAID, I realize now that we certainly should have. For had we done that, USAID could have held us accountable for reporting back a year later on whether any changes had occurred in the situation at the BSc colleges, or for telling them of any follow-up we had undertaken with the colleges. As far as I recall, none of us ever inquired whether there had been any results from our visits to those colleges, obviously because we didn't have a systematic approach to the mission. I certainly realize that now.

As for the report we sent to the National Science Foundation, I am certain that they did follow it up, although I never thought to ask NSF about this. I am in good touch with Philip Hemily, now retired from NSF, so I could check with him, but if I did, I am sure he would say: "Bob, now come on. You know very well that we in NSF did this and this and this, based on that report." That was one of the first missions after the war NSF had fielded. I realize now that in my own mind I simply wasn't thinking about follow-up.

EDITORIAL NOTE: THIS BEGINS THE SECOND DAY OF THE INTERVIEW

Q: Today is the 24th of January, 2013 with Robert Maybury.

Bob, where did we leave off?

MAYBURY: I told you that, after six years of teaching chemistry at the University of Redlands in California, I had a sabbatical at Harvard in 1961 under a National Science Foundation faculty fellowship. While working in the laboratory, I got a telephone call from Albert Baez who had been a professor of physics at Redlands, but had gone earlier

to Paris at the invitation of UNESCO to set up the Science Teaching Division in the science sector of UNESCO. His call was to invite me to consider coming to Paris to join him as the chemist on the team he was assembling in the Science Teaching Division in the Science Sector of UNESCO. The team would have specialists in each of the basic fields: chemistry, physics, biology and mathematics. I agreed to discuss this with Helen and, as I said earlier, after returning to Redlands to complete the next academic year, in June 1963 we took our five kids to Paris where I began my work with UNESCO.

Q: Sort of setting the stage, looking at the world in the 1960s, where were the significant centers of chemical research in the world?

MAYBURY: At that time I would say one of the top centers in chemical research was the University of California at Berkeley. The other top U.S. universities in chemical research were Harvard, Columbia, University of Chicago and several state universities in Iowa, Indiana, Ohio and Washington. Worldwide, Oxford and Cambridge were also important and, to a lesser extent the German universities were coming up, but I can't think of any in particular other than University of Bonn. In Sweden it was the University of Uppsala in sciences. These are the chemistry research ones I can think of.

Q: Japan?

MAYBURY: Yes, Japan was certainly prominent. France, the Sorbonne probably.

I am a little ahead of myself but when I went to UNESCO in Paris, I was invited to have a laboratory at the Sorbonne. One of the professors there came and saw me at UNESCO and he said, "If you are going to be a bureaucrat you shouldn't let your chemistry die so I am going to give you a laboratory there." He did, but I never found the time to go there and use it. I got too busy being a bureaucrat. The Sorbonne was prominent as an international university in chemistry research. As were the ones I just mentioned: Uppsala in Sweden, Cambridge and Oxford in England and to a lesser extent, the University of London.

Q: What was your initial impression of the office in UNESCO you were coming to and what it was like?

MAYBURY: At that time, UNESCO stood high in the world's esteem. It was still close enough the time it was founded by the group of diplomats and world scholars such as Julian Huxley that it was still widely and popularly recognized. The director general, Rene Maheu, was well-known as an international figure. UNESCO's entry into science education was welcomed quite widely, although in UNESCO itself, Albert Baez did face some disagreement from colleagues in the education sector who thought he should set up the science teaching division in their sector and not in the science sector. This proved to be an issue of contention for years.

The head of the science sector in UNESCO was a Russian scientist, Professor Victor Kovda, an academician in Russia and probably one of the leading geologists in the world.

I also remember that the biology division was staffed by several outstanding scientists. Other than myself, there were no other chemists in the science sector at that time; I was the first chemist to appear on the scene there. Since there was no chemistry division, it was not organized like a university, but was organized more along program lines. As the director of the new science teaching division, Albert Baez was held in quite a bit of esteem in UNESCO, including among the educators.

Baez brought in an Argentinean physicist, Nahum Joel, to be the specialist in physics education in the science teaching division. Joel was a good physicist, but not of world class. For that matter, neither were any of the others Baez brought in to complete the staff of the division of science teaching. Hence, in the science teaching division, I met no world class scientists of the kind I had known at Harvard, so I would say the scientists in that division were very much like those I knew in the American Chemical Society, where I was the Member-at-Large of the science education division.

As for the rest of the science sector at UNESCO, I found several scientists who were world class. One was the distinguished biologist, Rita Colwell, a woman who later became head of the U.S. National Science Foundation and is now a leading professor at the University of Maryland. She was one of the most highly distinguished scientists in UNESCO at that time. She was very approachable and I had several opportunities to talk shop with her.

Of course, for me UNESCO was totally unexplored territory. There was a very fine Nigerian scientist, Stephen Awokoya, who had been the minister of education in Nigeria prior to joining UNESCO. At that time, no African country was considered anything other than hopelessly undeveloped, but Awokoya stood out for his qualities of leadership. He had been an Oxford graduate in physics and in UNESCO held a diplomatic position as Deputy Director General of the science sector. He was personally both sincere and friendly and took a liking to me. As the years went on, I was beginning to wonder whether perhaps I should try to get back into chemistry at a university, but he would say to me: "Bob, you are the top chemist here, so remember, bring that to your work and help build the chemistry program here at UNESCO." This describes quite well the atmosphere that I found at UNESCO, especially after Albert Baez resigned in about 1968.

Q: UNESCO later had a problem but at that time it was riding high, would you say?

MAYBURY: It was riding high. The first problem occurred after I had been there for about six years and I think it had to do with Israel. Israel felt UNESCO had mistakenly blamed Israel for damaging one of the holy places in Jerusalem, so Israel momentarily withdrew in anger from UNESCO. Eventually, that got resolved. Since I wasn't working in the front office of UNESCO, I only knew that the various national delegates to the general conference of UNESCO had voted in favor of the UNESCO position, but the government of Israel was unhappy about this and withdrew.

Back in the U.S., events like this always seemed to produce a very negative impression of UNESCO, in part, I believe, because the Jewish lobby here was very strong and pointed

out that UNESCO did not take the Israeli position on this, even though the general conference of UNESCO had voted against the Israeli position. I began to get some understanding of how UNESCO stood in the eyes of the U.S. public, for I had occasion to return to the U.S. on leave every two years. During those visits home, I would present talks to various universities about UNESCO and was generally received with great respect by people who introduced me to the audiences.

As time went on, I became aware that the political position of UNESCO in the U.S. was increasingly, what shall we all it? contentious, not always given top ranking. I remember well how in the spring of 1963, the Los Angeles papers carried an article announcing that Robert Maybury was leaving the University of Redlands to join UNESCO in Paris. That period was at the height of the anti-UN period in California and not only there, but all through the U.S. there were signs reading "Get the U.S. out of the UN and the UN out of the U.S."

Anyway, after this announcement appeared, an organization in Los Angeles called the truth squatters, organized by one of the right wing groups in California, traveled out to Redlands with the intention of warning the students about the "communist" organization UNESCO and accusing me of being a traitor to the country for going to UNESCO. I didn't have to meet with them to defend myself or UNESCO; the students themselves took this group on and, rising up as a whole, told the group point blank that they did not want their anti-UN message on the campus. It was quite a wonderful thing to see the students defend me. They had just elected me that year as the professor of the year, so I was already held high in esteem among them. They recognized with pride my being asked to come to UNESCO. I remember this incident well.

Q: When you arrived in UNESCO, what did you see your immediate task?

MAYBURY: Well, as I told you yesterday, I had responded favorably to the invitation from Albert Baez to come to UNESCO because I saw going there was very much a response to Kennedy's famous words.

Q: Ask not . . .

MAYBURY: Exactly, that's it. I said to Helen, here's a chance I have to live up to the message of those words. After all, in Redlands I had a wonderful situation - - I had received sizeable grants for the research I was doing; I had a very good laboratory and even had a post-doctorate working with me; I had undergraduate students working on research with me. So, as I said earlier, seeing that I've had such a favorable situation, I really should reach out to others in their need. And Albert Baez was offering me the chance to do this.

Q: Did the upper reaches of the UN look down upon you and give orders? Or would you say UNESCO was pretty much on its own?

MAYBURY: No, there is no hierarchical relationship in the United Nations, with the UN considering itself superior in operational power, of for that matter, in juridical status, to its specialized agencies. As for our day by day relationship with the UN, there was no occasion for us as individual scientists and staff members to get orders from a UN official. A specialized agency like UNESCO operates under general policies set by its governing council, a group of individuals selected by its member states. There are of course on-going relationships of each agency with the main UN, but these are determined through periodic consultation and negotiation. In our actual day by day work, we had no occasion to have any contact with the United Nations itself, although as I will mention later, I did have several occasions to work cooperatively with an officer of the UN in planning or implementing a particular scientific project or program.

Albert Baez had been a colleague and personal friend when we were at Redlands, so I enjoyed a very comfortable relationship with him at UNESCO in Paris. He just let me plan the program as I wanted to. When I arrived in Paris, he said, "Bob, I think the main thing for you to do during the first period you are here is to organize a chemistry pilot project in a region of the world you choose. Since I have started the physics pilot project in Latin America, why don't you choose Asia?"

I agreed to organize the project in Asia and spent my first year planning the program in detail. By the way, having a secretary those days meant the lady would come and sit in your office, take your dictation and then go to her room and type the letters for your signature.

As my first step in planning, I got in touch with the Organization for Economic Cooperation and Development (OECD) in Paris and ask the person in their science education office for information about programs for upgrading science teaching in each of the sciences. I also got information about such programs in other countries, including the Nuffield Foundation's program in England and programs in Australia, Czechoslovakia, and the USSR. With Professor Kovda's encouragement, I decided to have the first planning meeting of the pilot project in Moscow and corresponded with leaders of the national chemistry curriculum improvement programs, inviting them to the planning meeting.

In the years I was at Redlands I had been active in the American Chemical Society, so I knew quite a few chemists from other U.S. universities. As word got around about my going to UNESCO, I heard from some of these chemists saying they'd be interested in spending some sabbatical time with me at UNESCO. When I heard from a professor of chemistry at Grinnell College saying he would like to come for a full academic year, I agreed he come and work with me getting the pilot project started. I was pleased that the Assistant Director General of UNESCO, John Fobes, worked out a legal contract permitting a visitor to work voluntarily with me in UNESCO, the contract providing a fee of one U.S. dollar and covering insurance and other technical, administrative aspects. Later that year, a second person (a professor of chemistry from Tufts University) joined me for his sabbatical year under this arrangement.

In preparing for the Moscow meeting, I got publications and aids from all the national curriculum improvement programs that had agreed to participate: the Nuffield Chemistry program in England; two programs in the U.S. - the Chem Study program based at Berkeley and the Chemical Bond Approach program based on four U.S. colleges; a chemistry program from Czechoslovakia; a USSR program on the chemistry curriculum; and a chemistry curriculum improvement program in Australia. All these materials arrived in my office at UNESCO and I loaded them into large aluminum containers to take with me to Moscow.

The USSR National Commission for UNESCO in Moscow then reached agreement with the National Pedagogical University in Moscow that they would serve as host for this meeting planning the pilot project. The professor from Grinnell then helped me to load the large containers of the curriculum materials into the taxi cab to the railroad station, where I boarded the sleeper train for Moscow. I traveled nonstop to Moscow, going first through the Berlin Wall, then into Poland, and finally to Moscow. All these containers with the curriculum materials and also some chemical equipment were with me in my sleeper compartment. On arrival in Moscow, I took a cab to the hotel and then to the university to meet the scientists I had invited to the meeting.

I had requested each curriculum program to send a scientist to the meeting. At the meeting, the scientists asked: "Where will this project take place?" and I replied we had decided to organize it in Asia. When they then asked "Well, where in Asia?", I asked them about their suggestions of places they knew in Asia. However, most knew no more about Asia than I did, so the issue of the project location was left open for the time being. They then decided that the nine Asian countries should select participants from among science educators. Since China was not a member of the UN at that time, this meant Indonesia, India, Pakistan, Thailand, Malaysia, Iran, Korea, South Korea and Taiwan. They also agreed to call it the "Pilot Project on Chemistry Teaching in Asia."

The plan for the pilot project called for UNESCO to convene the project for one full year in a laboratory somewhere in Asia. Each country would select a participant who, after the year at the project, would return to his/her country and take a leading part in upgrading the chemistry curriculum in the schools of the country. The plan also called upon UNESCO to recruit the instructional staff for the project from among scientists who were leaders in improving the teaching of chemistry and place them at the project's laboratory for a full year. This proved to be one of my most challenging tasks once I returned to Paris from the meeting. I eventually contacted individuals I knew were chemists who were leading reform projects in chemistry in their countries. These turned out to be from the U.S., Europe and Australia.

I returned to Paris after that meeting and finalized the draft of the planning document the participants had prepared in Moscow. My next responsibility was to plan my travel to all the countries that would be invited to send participants to the project. On this trip, I would be traveling over the next month or two and spend two or three days in each country. Since planning a trip this extensive meant I would have to contact the national commission for UNESCO located in each country of the countries in Asia, I asked the

Bureau of Member States in UNESCO to help me make appointments with the delegate of each of these countries, who sits permanently there in UNESCO in Paris.

At this appointment with each delegate of an Asian country to be involved in the pilot project, I explained the purpose and plan of the pilot project and then requested that he inform his country's National Commission for UNESCO about the date and purpose of my visit. That purpose, I said, was to meet appropriate science education people and ask them to identify a scientist or science educator in their universities or teacher training institutes whom they would send to the pilot project as a participant.

Thus began my typical life, I would say, as a staff member of UNESCO, primarily working on the planning of this pilot project. This consumed most of my first two years and included the long trip to all Asian countries to explain the pilot project and assist their UNESCO offices to select participants to the pilot project. I also began forming useful links with individual scientists, one I remember well was Pradit Cheosakul, the Minister for Science of Thailand and a member of the executive board of UNESCO. I remember when he was a delegate to the General Conference of UNESCO in Paris, how he came to my office and invited me to join him at lunch. That's when he informed me that Thailand would provide the laboratory and classroom at Chulalongkorn University in Bangkok as the headquarters for the pilot project.

I also remember that another of the first tasks Albert Baez asked me to take on was to arrange a link between UNESCO's program in chemical education and the International Union of Pure and Applied Chemistry (IUPAC). Baez wanted of the science disciplines in the science teaching division to have a link with its respective international scientific union. These unions had existed for probably a hundred years, but most did not have a committee for education in their respective science. Hence, I wrote to the president of the International Union of Pure and Applied Chemistry, who at that time was Lord Todd, an eminent professor of chemistry at Cambridge University in England, and explained UNESCO's interest in establishing an appropriate link between our science teaching division and IUPAC. Lord Todd then invited me to come to Cambridge and sit with him at High Table to discuss this matter. During that luncheon, I explained our hope for a meaningful link between our division and IUPAC and he agreed at once to set up a IUPAC committee on chemical education, appointing its first chairman, Ronald Nyholm, at that time a professor of chemistry at the University of London. Nyholm eventually was knighted to became Sir Ronald Nyholm.

During my time at UNESCO, I got to know "Ron" Nyholm very well. Whenever I went to London to talk about the IUPAC chemical education committee, he would say "Come up the back door, Bob," meaning I should go to the back door at the University of London and use the elevator that came up into his office. The first thing he'd do when I arrived was to say "Come in, Bob" and then he'd pull open his desk drawer and get out a bottle of sherry and we'd have a sherry together as we talked business. I got to know Ron Nyholm very well and he became an exceedingly effective chairman of that IUPAC committee. The committee exists to this day, meeting regularly whenever IUPAC

convenes its annual meetings. That committee has become a very major supporter of improving chemical education globally.

So now the UNESCO chemistry pilot project in Asia was off to a start. I had completed various organizational matters - - selecting the scientists to staff the project, accepting participants from each Asian country, and signing the agreement with the Thailand government for a laboratory at Chulalongkorn University. Finally, I signed a contract between UNESCO and Dr. Lawrence Strong, professor of chemistry at Earlham College in Richmond, Indiana, U.S.A., to be director of the pilot project for its first year and arranged for him and his family to travel to Bangkok. He had been director of the Chemical Bond Approach project, one of the two major curriculum improvement projects here in the United States. Associating with him that first year in Bangkok were several chemists from other chemistry curriculum improvement projects, including Frank Halliwell, head of the Nuffield Chemistry Project in England, who traveled back and forth between London and Bangkok many times that first year, and Yaroslav Zyka, professor of chemistry from Charles University in Prague, Czechoslovakia, who also traveled back and forth many times to be part of the teaching staff at the pilot project.

The plan of the pilot project called for participants to develop audiovisual teaching aids to accompany the text, so I needed to find a specialist in making 8 millimeter films. When I learned about Dennis Seegalor, the top film maker of the Shell Chemical Company in London, I met him and his superiors at Shell, reaching an agreement with Shell to release him for a limited time to join the staff at the pilot project in Bangkok. He spent many, many weeks there working on teaching the participants how to make 8 millimeter films on specific aspects of chemistry. Those films were then sold to chemistry teachers of many countries through national chemical societies.

One other teaching aid developed in the pilot program was programmed instruction, a popular method at that time. It was espoused by a top educator at Columbia University, so I signed a contract between UNESCO and him to spend a month or so at the pilot project working with Lawrence Strong and the participants to develop programmed instruction material in chemistry. This is how the pilot project brought the staff scientists and participants together with outside experts to develop innovative teaching aids as well as updated subject material in chemistry.

Q: What were you finding out in the field?

MAYBURY: In my visits around Asia, especially on that first visit to inform each country about the pilot project, I realized I had made a sensible decision to get involved in promoting the improvement of chemistry internationally. For what I was seeing now just added to what I had seen in those two previous missions abroad that I described to you last time we met: the first in 1962 when I went to Pakistan for USAID, and the second in 1963 when I went to the Central American countries for the NSF, namely, how sad developing countries can be when you get into their science laboratories. That was even true at the research level. They are so out of touch with the main currents of research. They lacked the appropriate periodicals in the libraries. They don't have really

up to date equipment and the general atmosphere of doing research in a Third World country is a very bleak atmosphere to say the best. I had already seen this in both my previous visits overseas.

Q: How in general or maybe in specific terms, how did you in UNESCO push your programs and improve the schools and all?

MAYBURY: As I indicated, I had responsibility for the chemistry program of the science teaching division and carried this out by working along two lines: first, I cooperated with the Committee on Chemical Education of the International Union of Pure and Applied Chemistry (IUPAC) that Lord Todd had created in response to my request. Over the years I was in the science teaching division, I worked continuously with this IUPAC committee. I would go over to London to meet Ron Nyholm, the committee's chairman, probably two or three times a year. One significant way this committee cooperated with UNESCO was for Nyholm and his colleagues, who were themselves scientists from several different countries, to identify an appropriate scientist who could be an advisor to the editor of a new UNESCO periodical entitled New Trends in the Teaching of Chemistry. In turn, I found it useful to participate in the annual meeting of this IUPAC committee wherever they convened. From funds available to our science teaching division, I was able to provide a grant each year to the IUPAC committee for activities they developed in cooperation with chemical educators in many countries.

The second line I pursued in carrying on the division's work in chemistry was to support the chemistry pilot project based in Bangkok. I had to do the early planning and follow-up work and then travel to the countries in Asia that agreed to participate to help select the participants. I then found the staff members of the project, especially the person to be its director. After the close of the project's first year in 1966, Dr. Lawrence Strong, its director that year, returned to his college in the U.S., so I had to find a replacement for the project's second year. This was Ted Watton, an Australian chemistry professor from the University of New South Wales. I had him come to Paris for briefing before he took up his post in Bangkok. I also traveled to Bangkok several times over the next two years to support him in his work there.

After the two-year period with Watton as director, I had to find a scientist to take his place and found Dr. Yaroslav Zyka of Charles University in Prague, Czechoslovakia, who had been active in improving the teaching of chemistry in the schools of that country.

In recounting these different actions of mine in response to your question about how we pushed our programs to improve science teaching in schools around the world, I realize I should have told you right up front - - even before I started describing what we were doing in the science teaching division of UNESCO - - how Albert Baez constantly entreated all of us working with him to keep in focus one fundamental viewpoint on our work: he knew very well that our group of six or seven scientists was the total manpower of UNESCO's science education force, but to think this small group could manage changes in science education at millions of schools and thousands of universities around

the world would be preposterous. Instead, he entreated us to recognize our limited size, especially in view of the enormity of the educational problems we seek to help resolve, and thereby understand our necessity to be "catalysts" - - that is, to influence change by practical steps we can take with others, these steps often time being as little as to raise their awareness of a problem, or to get them to view a problem from a different perspective.

So I believe sincerely that my working along these lines I've just outlined - - cooperating with the IUPAC committee on chemical education, and planning and managing the UNESCO pilot project on chemistry in Asia - - was the catalytic way I tried to place my limited abilities and resources behind efforts to improve the teaching of chemistry, whether in the schools and universities of the Asian countries, or elsewhere in the world. I know from contacts and correspondence I had as the pilot project was concluding, around 1969 and 1970, that there were beginnings of concrete efforts to improve science teaching in several of the countries whose scientists had been involved in the pilot project. Let me mention just one of these - - the setting up of a UN Development Programme (UNDP) project in Thailand to establish the national center for science education improvement.

In addition to what I have just told you about my work in UNESCO, there were a number of other very interesting assignments I had while a member of the science teaching division in UNESCO. In January 1964, I was asked to represent UNESCO at the Pugwash Conference that convened for a week at the Udaipur Palace in India. This international conference is convened every two years with representatives of major international organizations to discuss the hope of disarming nations and devoting their resources to peaceful enterprises. I was assigned to a working group, which included Indira Gandhi, who at that time was still a regular citizen of India. I prepared a report on the conference proceedings for submission to Dr. Kovda, the head of the science sector at UNESCO.

In early 1969, the Director General of UNESCO, Rene Maheu, in one of the staff meetings I attended with Alfred Baez, brought up an Israeli request for a meeting on improving science in the schools of the nation of Israel. Maheu pointed to me and said, "Maybury, you be the person that liaises with the delegate from Israel." Why he picked me I don't know, but he did."

The next thing I knew, David Avidor, the delegate of Israel, came to my office and began a series of discussions we had repeatedly over the next month or so as we planned that meeting in Israel. I gave him a list of scientists I knew from different countries that he should invite to it. I then traveled to Israel for the meeting in the summer of 1969, when I met David Avidor, Golda Maier, Aba Eban, and David Samuel of the Weizmann Institute. I enjoyed a very good interaction with Israeli scientists and Israeli political people and found that UNESCO stood very high in reputation. I had opportunity to present a paper describing the progress of the chemistry pilot project, with an Israeli participant being present.

Another interesting assignment I had over the years I was in the science teaching division was to serve as project officer for several UNESCO projects financed by what are called extra-budgetary sources, these being the United Nations Development Programme (UNDP) and various governmental and even private sources. The UNDP provided funding to UNESCO projects that provided technical assistance to a country's science ministry or universities. One of these for which I was the project officer was the UNDP/UNESCO project assisting the University Grants Commission in New Delhi, India; another was the Science Faculty of the University of Islamabad, Pakistan; and a third was the National Teachers Training College, Teheran, Iran. I traveled at least once a year to India, Pakistan and Iran for discussions with local officials responsible each project.

I served similarly as project officer for UNESCO post-graduate courses in science, financed jointly between UNESCO and governments of the host countries. Each of us in the science teaching division were assigned responsibility for each such course that lay in our particular discipline, mine being in chemistry. Hence, I visited once a year the post-graduate course in analytical chemistry at the University of Lyon, France, and the course in chemical engineering at the University of Kiel, Germany, and the course in organic chemistry at the University of East Anglia, England.

Amidst this busy, but most rewarding schedule of contacts with scientists in many countries, in 1969, I received a message from Dr. James Rutherford, Executive Director of the Harvard Physics Project at Harvard University, asking if I would take leave from UNESCO and serve as the Acting Executive Director of Harvard Project Physics, replacing him for one year, beginning September 1969. He wanted to devote the year to study of the many papers and documents from the laboratory of the Nobel Laureate, Enrico Fermi, an Italian scientist who played a critical role in developing the atomic bomb. Rutherford had visited Madame Fermi in her home in Italy, where Fermi's papers had been stored after his death. Rutherford brought back to Cambridge all of Fermi's writings, photographs and other material so he could develop a film on the life of Fermi for use in training institutes for teachers who use the Harvard Project Physics program textbook.

Since I had been working at UNESCO since 1963, I was ready for a sabbatical leave, so I was pleased to have an opportunity to become involved in a major science curriculum project. Harvard Project Physics was funded by grants totaling some millions of dollars from U.S. government and private foundations. The project is based on a holistic approach to physics, especially the cultural and historical aspects of physics. Its co-founder was Dr. Gerald Holton, a professor of physics at Harvard whom I had gotten to know. He is one of America's leading intellectuals, a lot like Julian Huxley, and quite widely respected by universities and government organizations as a scientist, physicist, and a truly socially concerned person. I served as the acting executive director of Harvard Project Physics for the full academic year beginning September 1969. Not only did I have opportunity to work closely with scientists and educational specialists involved in developing the course text and teaching aids, but also to discuss with secondary school teachers their interest in teaching Harvard Project Physics. Being away from UNESCO

and being at Harvard proved a comfortable respite from my administrative work at UNESCO.

In the fall of 1970, I left Harvard Project Physics and returned to UNESCO in Paris. Meanwhile Albert Baez had retired and an American engineer, Harold Foecke, was now the director of the division of science teaching. Harold Foecke made several very basic changes to the division, beginning with renaming it the Division of Science and Technology Education and altering its goal to include promoting technology education at the secondary school level. He asked me to continue my responsibility for education activities in chemistry. Since the chemistry pilot project was about to close, I traveled to Bangkok to cooperate with the project staff in preparing a formal study of its accomplishments and recommendations for further UNESCO efforts to improve chemical education. As I mentioned earlier, I also cooperated with the local UNDP office in developing the project document for a national science education center in Thailand. This document outlined the goals, working plan and staff personnel for the science education center, which would be supported by a multimillion dollar grant from UNDP.

On returning from Bangkok to Paris, I was continuing to work at UNESCO when I received a call from Dr. F. Champion Ward, a senior Ford Foundation education officer. He was in Paris and asked me to meet him at his hotel to discuss a Ford Foundation proposal. When we met, he invited me to consider undertaking a one year study of Ford Foundation projects for improving science education in developing countries. Ford Foundation would meet my travel and maintenance costs and provide my income for the year. I accepted the invitation and, on obtaining a leave from UNESCO, I traveled to Ford Foundation headquarters in New York to discuss the plan for this year of work. Between September 1972 and September 1973, I was to travel to five countries, Turkey, Lebanon, Philippines, Argentina and Brazil, spending two months in each country interviewing the people who had participated in the science education projects funded by the Ford Foundation over the past 20 years.

Through the courtesy of Fletcher Watson, Professor of Science Education at Harvard University, I established an office at Harvard School of Education and hired two graduate students as my assistants for that year. Before setting out on the first of my many travels, I returned to my home in Paris and discussed with Helen the details of this year of travel. We agreed that she and our sons and daughter would remain in Paris while I traveled between the office at Harvard and these five countries, with week-long rest periods at home in Paris. Helen accompanied me for one month in Turkey and one month in Lebanon.

In each country I visited, I began with a visit to the local Ford Foundation office, which prepared my schedule of interviews and site visits to government ministries and schools and universities. Rarely did I ever find time to be a tourist, the only exception being the two one-month periods when Helen was with me. Even then, she had much greater opportunity than I to tour the major historic or scenic sites, including Petra and Baalbek in the Middle East and Istanbul in Turkey.

In Lebanon, my visits were with the science staff at the Science and Mathematics Education Center for the Middle East at the American University of Beirut. In Turkey, I met staff scientists at the famous Science Lycee founded by Ataturk and described its history from its inception to the present. In the Philippines, I held discussions with staff science educators at the Ministry of Education in Quezon City, in Argentina, my visits centered on discussions with the director of the National Institute for Science Education (INEC), and in Brazil, my visits were with scientists in the Brazilian Foundation for Science Education Development (FUNDBEC), the organization that evolved from the small, but highly innovative Brazilian Institute for Education, Science and Culture.

This one-year period of visits came to a close in late summer of 1973, so I went to the Ford Foundation headquarters in New York and prepared a draft report summarizing the information I had gathered through interviews in each country. This eventually became the book: Technical Assistance and Innovation in Science Education, published by John Wiley & Sons in 1975. I then closed the office at Harvard and returned to UNESCO in Paris. In UNESCO I was requested by the personnel division to negotiate with the science sector administrator my future position with UNESCO. I was offered the position of Deputy Head, UNESCO Regional Office for Science and Technology in Africa, located in Nairobi, Kenya, and accepted this new responsibility. Helen and I arranged shipment of our personal effects and then traveled to Kenya. On our arrival, I found a comfortable home in Nairobi and enrolled our two sons in the international high school. They had been in French schools until this time.

Q: I want to talk about your time in Kenya. You were in Kenya from when to when?

MAYBURY: I was in Kenya from 1973 to 1980. After arriving in Kenya from Paris in 1973, I spent a few weeks completing the writing of my book for Ford Foundation. I would have completed my 30-year employment with UNESCO by remaining in this Nairobi post until the date of my retirement in 1983, but a calamity occurred in 1981.

However, let's not talk about the calamity. It wasn't me. The calamity was my boss who was a charlatan.

Q: What was the problem?

MAYBURY: The problem was that the boss, a Nigerian chief, Olu Ibukun, was a fake the whole time I was there. I was able to work there only because I learned early on to let Olu get all the credit and I would do all the work, so effectively I was the acting director of that office, a regional office that represents the UNESCO science and technology program in all sub-Saharan countries.

Olu Ibukun was a chief, as I said, but he was also a graduate of the University of London in electrical engineering. He was, what I have to admit, a real bastard. We had three Mercedes autos officially assigned to the office, because we had a staff of about eight or ten, I think. But every night he had the office drivers take all three of those Mercedes to

his home, a palatial mansion on the outskirts of Nairobi. We all knew that he used them to run his "girl network".

Whenever the office was to be represented at an official meeting, Olu would go, whether it was in Paris, or in Addis Ababa, Ethiopia, where the UN Africa office was located. He did most of the official travel. I would do all the work, such as drafting any documents required. But I did this without complaining, so gradually he turned over most of his work to me. Since this was the science policy part of the office's responsibilities, I was actually pleased, for it gave me opportunity to deal with the policy area of science and development and meet science ministers from throughout African countries as they'd come to Nairobi. I was now adding concern for science policy to my responsibility for science education.

Olu was a strange character. Once, in 1981, he disappeared, completely disappeared for over three months. So since I was the acting head of the office, I was effectively doing all the necessary administrative work, including hire a new secretary when any would leave.

One day during that period I was in charge of the office, the inspector general of UNESCO in Paris telephoned me and said, "Dr. Maybury, we'd like you to prepare a report on Chief Ibukun." So I commandeered staff, the business manager and others, to write this report. They dug into the office records and found that he was falsely getting a housing allowance even though he owned the house personally. He was getting allowances for cars that were not office cars, and many other kinds of financial irregularities. The report also covered other aspects of his life that all of us knew of.

Q: Including girls.

MAYBURY: Including girls.

Q: Did the girl business extend to the staff of the office, in other words, he wasn't hiring his mistresses as secretaries?

MAYBURY: No, not the office women, only those from outside. I had a wonderful woman, a Kenyan who was very competent and reliable. I knew her family and knew she was beyond the kind of things Olu's girls did.

Q: *Having to write a report on your fugitive leader is not easy, particularly when you've got the goods on him. What happened?*

MAYBURY: I sent the report confidentially to the inspector general, who incidentally never acknowledged it or anything like that. What they did with it, I don't know. All I know is that one day, I think this was about March 1981, Ibukun suddenly appeared. He came into my office and said, "Bob, I want that report." I said, "Olu, I sent the report to the inspector general at his request and I sent it confidentially, so I can't give it to you."

He said, “All right, Bob. You get that to me before the end of the day or you’ll be out of here.” He threatened me like that.

For the first time in my life I got a severe headache. I never get headaches, but I got such an alarming headache that I went home and said, “Helen, something’s wrong with me.” I don’t normally get headaches and it was splitting. She said, “We’d better do something” so the next morning she took me to the UN doctor in Nairobi, a very competent doctor for all the UN agencies. As I sat in front of him at his desk, I started to tell him why I was there. “Doctor Thompson, . . . “.

Without waiting for me to say more, he picked up his phone, called UNESCO in Paris and said “I want you to send a cable immediately ordering Maybury to report at once to Paris and providing him a ticket.”

Q: He knew all about it.

MAYBURY: He knew all about it. In fact, I learned many years later from a UNESCO colleague that Olu had tried to kill the man who was my predecessor by having the tires of his auto damaged so his car would careen over a cliff, for this man planned to drive to his vacation in another part of Kenya.

Anyway, the very next day, I went to the travel bureau in Nairobi and got my ticket for the flight to Paris, leaving Helen there in our apartment not knowing what would happen next.

But if you don’t mind, I’d like to go back to talking about my time in Nairobi between my arrival in 1973 until this fateful day in 1981.

Q: OK. Did you travel much, for example, going to various countries and seeing programs?

MAYBURY: Yes, while in the UNESCO office in Nairobi I did travel, but not nearly as much as my position called for because, as I just pointed out, Ibukun limited my travel quite severely, making most of the trips himself. During the eight years I was in Nairobi, one of my long trips was to universities in Ghana, Senegal, and Liberia to discuss plans for creating the Association of Faculties in Science of African Universities (AFSAU). I also made a trip to Madagascar at the request of the university to speak about UNESCO’s science program. I made several trips to Addis Ababa in Ethiopia to represent UNESCO in meetings at the United Nations’ Africa office, although since these were convened regularly every three or four months, Ibukun usually made the trip to represent our office.

I made quite a different kind of trip in 1977. In June or July of that year, the dean of science of the Open University (OU) in England invited me to come to England as a visiting professor in the science faculty from September through December. When I requested a leave of absence from UNESCO, the assistant director general for science readily approved, for he was pleased I had received this invitation. He indicated that on

my return, he would draw on my experience to enable UNESCO to develop a distance learning program for developing countries.

Off Helen and I went to Milton Keynes in England, where the Open University is located, and from September through December. I worked each week-day with the science course-writing team, professors borrowed for limited periods from leading universities, including Oxford and Cambridge. They never held lectures to students in a classroom, but met together in a room to spend the day discussing a draft of one of the chapters of the science text they were developing. Those discussions could get quite heated and as I learned, there were several professors who refused to come to the sessions because they just couldn't stand to have their "sacred" words criticized.

During those three months I was at the OU, I also spent a day at the OU's educational development center, a group of learning specialists who scrutinized every paragraph of the draft text of each course to make sure each photo was placed in the right place on a page, or that a paragraph of written text was expressed clearly enough, etc., to ensure the educational effectiveness of the text. I also spent a day at the BBC Television studios in London where a studio was reserved for production of the OU courses aired all over Europe. Since every course also required students to have one day a month of direct contact with a tutor, a professor in one of the universities in England cooperating with the OU, I visited one of these tutors and discussed with him the part he played in a student's work in a course. I was very disappointed that, on returning to Nairobi from this wonderful experience and getting quite a full understanding or how the Open University system worked, the assistant director general of the science sector at UNESCO failed to follow through on his plan to utilize my experience.

As long as I am talking about that period I was in Nairobi, I should tell you that I wasn't there long before I wanted to have a better understanding of how science and technology can help these countries in Africa. So I started to go, unofficially of course, to the weekly seminars on economic development policy at the Institute of Development at the University of Nairobi, a short distance from my office. The people who organized these seminars were economists on leave from the internationally known Science Policy Research Unit (SPRU) of the Sussex University in England. They took a special interest in me at first, partly I think out of curiosity that an international guy like me would bother coming to their seminars, but after a while I know they were sincere and wanted to be helpful to me. They'd often ask me to go with them after a seminar and sit down at a nearby café to discuss some specific topic. They also suggested basic books on development economics they thought I should be reading.

For many years, my main concern had been on improving science education in a developing country, but what I was now learning about a country's economy by going to these seminars and reading the books they suggested, as well as other books and periodicals in the development field, shifted my concern to understanding how science and technology benefits a country's economy.

In 1978, a staff member of the science policy division of UNESCO in Paris came to Nairobi and asked me to go with him on visits to some of the African countries covered by our Nairobi office, where we would hold discussions with scientists in policy making positions. Many of these scientists were university professors who had been elevated to ministerial positions where the job was to oversee policies for bringing science to bear on their economies. Our visit was to help them prepare their country's position paper in preparation for the forthcoming UN Conference on Science and Technology for Development, scheduled for 1979 in Vienna, Austria.

Through my discussion with these scientists I soon saw that many were ill prepared for the policy positions they held. I recognized they did not really understand their country's problems in industrial or agricultural sectors and of how science could affect these to benefit their country's economic development. I was also reading an article by Charles Weiss, Science Adviser to the World Bank, describing the relationship of science and technology to a developing country's economy, so I wrote to him saying I found his articles extremely germane to the needs in the African countries. After saying how distressed I was over finding so many African scientists in policy positions who are unprepared to handle these positions, I asked if he could develop an appropriate training course for these scientists. He replied, saying "Maybury, do it yourself and let me know how I could help in any way."

Then a very unusual thing happened - - I received a totally unsolicited cable message from the U.S. It was from a member of the committee preparing the U.S. position paper for the UN Conference on Science and Technology for Development scheduled for Vienna, Austria, in 1979. He referred to my position as a scientist in the UNESCO office in Africa and formally invited me to serve as a consultant to the members of the committee in a week-long workshop that would convene in Vale, Colorado, in the Spring of 1979. The message also indicated all costs of my airfare and hotel would be covered.

I really was astonished, because I hadn't been in touch with any government or UN group connected with the UN conference. Anyway, I got my ticket and flew to Aspen, putting up in a lovely hotel for the week. Each day I met the committee people in discussions of the draft preparatory paper. They were leading scientists the UN had appointed to the U.S. preparatory committee. I shared with the committee members my experiences among scientists, not only in Africa, but in other countries I had worked over the years.

Before I had left Nairobi for this meeting, knowing I would be in the U.S., I phoned Charles Weiss at the World Bank asking if I could drop by on my home to talk briefly about my earlier letter. He responded positively, so on my way back I met Charles Weiss and his colleague, Mario Kamenetzky, an Argentinian engineer, the two of them being the Office of the Science and Technology Adviser at the World Bank. We talked for hours and Kamenetzky even invited me to his home that evening for dinner so we could continue our discussion. I talked about visiting various scientists in the African countries and seeing their limited understanding of their policy responsibilities. Apparently, my grasp of the issues they discussed with me revealed the benefit of my having been spending time with the Nairobi economists and reading the development literature.

All of us felt an instant camaraderie, for they both said "Bob, you are one of us," and asked me to keep in good touch with them once I got back to Nairobi. This was more than a perfunctory sentiment, for they asked me to work on drafting a plan of the kind of training course for African scientists I had suggested in my original letter to Charles Weiss and send this to them once I was back in Nairobi.

Back in Nairobi, although I had a full plate of work of UNESCO tasks, I worked for months on that draft and mailed it back to them in May 1979. Weiss and Kamenetzky wrote back immediately with considerable praise and asked me to continue redrafting it along lines of a plan for a training program on science and technology policy-making. This back and forth correspondence about my draft of the plan for a training course was helping me rethink the part of science and technology in a country's economic development. In the first draft of the plan I had sent to Weiss and Kamenetzky, I called for strong support to science and technology as the way to develop a country's economy. But a sign that hangs on the wall in Weiss's office reading: "Technology is the answer, but what is the question?" describes well the change in my thinking about development. Instead of calling for a large push on science and technology as the way to promote development, Weiss and Kamenetzky explained that the most important force behind development is the demand for technology among a country's productive enterprises and farmers. As I continued work on drafting the training materials, I began to reflect this crucial change in my thinking.

In the summer of 1979, I found I was eligible apply for leave from UNESCO under the "leave under study time entitlement" plan for staff members, I applied and was granted leave to spend October and November 1979 with Weiss at the World Bank. I used the time to study reference material and various World Bank documents that were relevant to my continuing work on drafting the plan for a training course.

Returning to Nairobi, I continued for many months corresponding with Weiss and Kamenetzky about the plan for a training course. When Weiss informed me that he was negotiating with the Government of Kenya to establish a World Bank training program on science and technology policy-making, I wrote unofficially to the senior science officer in UNESCO explaining my continuing interaction with Weiss at the World Bank and indicating I knew he would be requesting UNESCO to grant me leave for an extended period to prepare training materials for the Kenya program. Weiss then requested UNESCO to grant me leave for three months (April –June 1980) and again for the month of October 1980. UNESCO agreed to both leaves, so I spent those periods at the World Bank in Washington. I was drafting case studies based on the research and country economic work of the World Bank economists and engineers. In fact, I had the privilege of co-authoring several case studies with two of the Bank's most distinguished economists, Howard Pack and Lawrence Westphal, both considered leading scholars on technology in economic development.

After these extended periods in Washington, I again returned to Nairobi and over the next several months continued my work at UNESCO, but then that dramatic and fateful day intervened in March 1981.

As I said earlier, on that fateful day, I was ordered back to Paris and, on arriving in Paris, I called upon the assistant director general (ADG) of the science sector in UNESCO. He told me to just go to an office and he will discuss my situation with the Bureau of Personnel. For all I know, he never really did, for I was left hanging loose for days, until a good friend of mine, Jacques Richardson, editor of the UNESCO periodical The Impact of Science on Society, said to me: "Bob, I'd like to take a little time off to study some other things I want to write, so I am going to ask if you could handle the editing of Impact, since you are here and the ADG, the Syrian guy, hasn't been kind enough to tell you what to do. Just told you to cool your heels."

So for the next two years until I retired from UNESCO in January 1983, I was the managing editor of that UNESCO periodical, a very well-known quarterly that Julian Huxley had initiated at the forming of UNESCO.

Q: What happened with your man in Kenya?

MAYBURY: I didn't see him again until after I retired from UNESCO and was in Nairobi in February 1983 on my first mission for the World Bank.

Q: You left UNESCO when?

MAYBURY: I retired from UNESCO on January 31, 1983. That's when I came here to the World Bank.

But let me continue describing my life at UNESCO in Paris during those remaining months of 1981 and 1982 when I was the managing editor of Impact of Science on Society. Throughout that period, I also responded to the requests by Weiss that I take leave from UNESCO and join him and Kamenetzky at the World Bank in Washington to continue drafting the training materials for the training program and also lecture in the training program. So Weiss contacted UNESCO several different times, requesting they grant me leave for the month of November 1981, next for the three-month period March-June 1982, and finally for the period September-October 1982. During the three-months beginning March 1982, the training program involved Caribbean participants, while in the months of September and October 1982, the program involved Kenyan participants. These visits to the World Bank took careful planning on my part for I also had to keep up with my editorial responsibilities at UNESCO.

During my visit with Weiss and Kamenetzky in September-October 1982, Weiss indicated he was requesting the World Bank to have me sign a contract for the period February to December 1983 so I could join his staff at the World Bank and, in addition to continuing editing the training materials, also become involved in implementing the training program. So as soon as I retired on January 1983, I undertook my first mission

for the World Bank, traveling to Nairobi as a World Bank consultant to interview the Kenyans who had participated in the World Bank training program in Washington in September - October 1982.

Q: Was Ibukun still there?

MAYBURY: He was still there. I went up to the UNESCO office to say hello. Ibukan said, "Oh, happy to see you. Come to lunch with me" and he took me to the best restaurant in Nairobi. I just played it cool.

Q: Obviously he had protectors.

MAYBURY: I have to be very careful about what I say now. We know. I would rather you speak to someone not in my position, having been an employee speak to things. UNESCO was corrupt from the core. The Director General himself, a Senegalese educator.

Q: M'Bow enraged the United States.

MAYBURY: We saw it in the UNESCO house. We knew that. He had blocked off the top floor of UNESCO headquarters as his private apartment and he had his girls.

Q: You were a man with part of the old Mafia.

MAYBURY: That's right. I was too naive to know all that kind of stuff. Be careful, I shouldn't say too much.

I was the victim of a lot of this.

Q: Nigerians have tremendous ingenuity and Nigerians here in the United States, Nigerian immigrants have been involved, obviously many haven't and all but many have been involved in bank fraud, confidence games, the marketing of stolen cars, what have you.

I have a friend who is a banker in Baltimore and said that the word sort of in Baltimore if a Nigerian came to the bank you closed all the windows, shut all the doors and had a policeman there. They would have things where four people would appear at the same time at different windows to withdraw on fake things and get out before, I mean.

It was just like the Nigerians came to a place like the United States, looked around and said, "Look at all these stupid and naive people. This is a money tree."

Did you feel the hand of M'Bow as you were working?

MAYBURY: No, not at all.

Q: He was way off in the distance so you didn't have contact with him in Nairobi. Would people come to you with stories about him, I take it when you lived in your own little world?

MAYBURY: As I said earlier, in Nairobi, I was going to seminars on economics at the University of Nairobi and reading books the guys there suggested. They were an outpost of the University of Sussex in England. If you know anything about Sussex the science research policy unit is probably the world's leading graduate institute in science and development. As I look back on those books now, I realize they were largely all Communist books, Marxist books I should say, because those guys were real Marxists. But no more so than many were those days.

Q: My impression and I am not an economist is that the London School of Economics did more damage in the Third World through its Fabian socialist, whatever you want to call it through its pronouncements and teaching than the whole Communist apparatus coming out of Moscow. One only has to think of Tanzania.

MAYBURY: We saw that in Tanzania, it was sad.

Q: In Africa you must have had contact with Tanzania, didn't you?

MAYBURY: We went many times. You could see it.

Q: What was happening there in the science field?

MAYBURY: In science, not much. In fact, I repeatedly rescued the science people I knew at the University of Dar es Salaam. While I was in Nairobi working for UNESCO, I would go down to Dar to see their science set-up. It was pitiful, but I tried to be helpful to them. I got to know Paul Vitta, the dean of science there.

But let me continue, telling you about my activities once I was on the staff at the World Bank with Weiss and Kamenetzky beginning in 1983. Following that first mission to Kenya, I returned to Washington and continued preparing case studies. I also then edited all the documents we had prepared for the training program and prepared a book entitled A Program of Studies and Training on the Scientific and Technological Dimension of Development with Kamenetzky, Maybury and Weiss as the authors. The World Bank published this in two volumes in 1985. It was also published as a special issue of the Bulletin of Science, Technology & Society, published by Pergamon Press in 1984.

In late 1984, Babatunde Thomas, a Nigerian scientist from Nigeria, came to the World Bank and said, "We in the African Regional Center for Technology (ARCT) want to implement the training program that you, Weiss and Kamenetzky have developed here on the role of technology in development. We want to implement this program in West Africa."

We signed a document with ARCT and the next thing I knew, Weiss said, "Bob, you be the West African guy to handle this because you are French speaking. So I had to fly to Dakar in early 1985 and spend two months in Africa cooperating with Babatunde Thomas, the director of ARCT. ARCT was funded by the UN, and this cooperative project was a joint World Bank-UN project. My travel in West Africa took me to Mali, then a week each in Upper Volta, Senegal, Niger, Burkina Faso, and Guinea. In each place, I met the people who would participate in the World Bank training program in Washington. After my visit, ARCT sent these participants to Washington for the month-long training program. The training program used as its text a book on technology in economic development that Weiss, Kamenetzky and I, along with several World Bank economists had written

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The participants were expected to go back to their countries under the ARCT, where each one was to implement a specific change in his or her place of employment, bringing about this change by introducing a technology selected in advance on the grounds that it would presumably lead to economic growth.

Although I was originally scheduled to return to West Africa to cooperate with ARCT in follow-up with the participants, my travel was postponed to January through March 1987, when I was able to meet the participants and discuss their progress in their projects of introducing a new technology. That trip at the end of '87 was my final activity at the World Bank.

Q: And then what did you do?

MAYBURY: In September of 1987, I was working in my office at the World Bank under a contract that extended into 1988, for I was completing the follow-up on the trips to West Africa I had made as part of our World Bank training program. Quite unexpectedly, I received a message saying Glenn Seaborg wished to see me. Glen Seaborg was an American scientist and Nobel Laureate who headed the Atomic Energy Commission under five presidents. I had gotten to know Glenn Seaborg very well because he would look in on me at UNESCO in Nairobi when he was traveling worldwide.

Glenn Seaborg came to my office and said: "Bob, I have formed a small nonprofit organization of chemists that is focused on addressing the needs of scientists in developing countries. Its name is the International Organization for Chemical Sciences in Development, IOCD in short. Our director has been Pierre Crabbe, a very well-known Belgian chemist who earlier had worked with Carl Djerassi in Mexico. Djerassi and Crabbe together get the credit for discovering what is known as the birth control pill.

Glenn Seaborg then explained that, unfortunately, Pierre had just been tragically killed in Brussels when a car hit and killed him - - we just can't believe this. A group of us have been thinking about how to replace him and your name came to our attention. I am wondering if you would consider taking over as our director?"

I said, “Glenn, goodness. I really am in the middle of what I am tackling here, but I will try to be helpful.” I had in mind, I guess, that it would be maybe for a few months or a year. It turns out I have been serving voluntarily as the executive director for the past 23 years. Just two years ago, I asked the group to find a person to replace me, so I am now the emeritus executive director of IOCD. It’s been a wonderful way to spend my retirement years continuing to help scientists in developing countries. Of course, it hasn’t made any money for me.

Glenn Seaborg was a wonderful man to work with. I got to know him very well. Anytime I would go to Berkeley in California he’d give me an office right next to his office in the Lawrence Berkeley Laboratory. He remained IOCD’s president until 1993, when Jean Marie Lehn, a Nobel Laureate and probably the top chemist in Europe, took over as president of IOCD. Everybody knows Jean Marie Lehn. His offices are in both the College de France in Paris and in the University of Strasbourg.

One of my perks for doing this for these 23 years has been a free trip to Paris or Strasburg every year for the annual meeting of IOCD until three years ago. That’s when I told them it’s time to find a younger person, and I said I am retiring. They very graciously asked me to remain as Executive Director Emeritus. But when they asked me to come again to the annual meeting in Strasbourg, I said, “Look, I have retired, you guys have replaced me with a new chap from Belgium and that’s wonderful. You don’t need me.” Those trips to Europe each year for 23 years have kept a link with Europe for Helen and me.

Q: What were you doing with them?

MAYBURY: As their executive director I was responsible for raising funds and also administering the projects carried out by each of the working groups of scientists that made up IOCD, 20 or so scientists from the U.S., Europe, Latin America, Asia and Africa. I didn’t have a staff and that was the one problem. I should have had a full time secretary, but I managed by doing things myself just working out of my home - - but I enjoyed it. I kept my hand in.

I prepared the IOCD newsletter and mailed this quarterly to a mailing list of about 300. But then after about five years, I realized a better way to provide people with up-to-date information about IOCD was to create an IOCD website, so I learned html computer language and created the IOCD website at www.iocd.org . I then contacted a commercial internet organization and asked them to be the host to the website, which they agreed to do as a contribution to IOCD and continue to do to this date. Similarly, I found a UN volunteer to serve as the voluntary webmaster of the website.

One of the most demanding responsibilities, of course, was seeking funding for IOCD projects. Although all IOCD scientists serve completely voluntarily, the projects always involved the costs of travel and hotels for participants from developing countries and these costs were covered by IOCD. I was fortunate in attracting funds from such major funding sources as the U.S. National Academy of Sciences, the Third World Academy of

Sciences, the John D. and Catherine T. MacArthur Foundation, The Aventis Foundation, UNESCO, and many others.

I've now got friends all over the world from this work with IOCD, people that still send me greeting cards and even drop by to see me should they be in Washington.

Q: What sort of projects were you working on?

MAYBURY: IOCD has a wonderful group of dedicated scientists, all voluntary. Let's see, one of the first groups I got to know well was focused on the chemistry of male fertility. That was headed by Josef Fried from the University of Chicago, a brilliant chemist who was given the highest awards internationally for his work. Gus passed away a few years ago, a very outstanding scientist who obtained lots of grant money from the Andrew Mellon Foundation and the United Nations Population Fund. At one point, the World Health Organization acknowledged that the research work of his IOCD group was the most significant in the world.

Q: Male fertility has been going down, hasn't it?

MAYBURY: Yeah, but he was working on very fundamental chemical aspects. Associated with his laboratory in Chicago was a laboratory in Millersville University in Pennsylvania. A biologist there maintained the laboratory full of white rats that they were using to test the experimental chemicals synthesized by scientists of the group.

Another outstanding IOCD group was focused on the chemistry of plants. Its chairman was Kurt Hostettmann, a chemist from the University of Lausanne in Switzerland, is globally known for his discoveries of new plants and identifying their chemical composition. Each year, his working group convened an international symposium, generally in one of the developing countries, on the biology, chemistry, pharmacology and clinical studies of plants in a particular region of the world. These often drew 100 or more participants from many countries, only 20 of these from developing countries provided travel funds from IOCD.

The IOCD group on analytical chemistry convened workshops with analytical chemists of universities in developing countries. These week-long workshops were quite a lot of work for me, because I helped the chairman of that group with all the detailed administrative work of organizing these workshops, including contacting chemists in many countries and arranging the details of their travel to the workshop as well as corresponding with the universities serving as hosts of the workshops. One was in Ecuador, one in Charles University in Prague, Czechoslovakia, and one in South Africa. This working group then changed from organizing the workshops and, instead, cooperated each year with local networks of analytical chemists that convened their workshops, IOCD providing them funds and visiting analytical chemists as lecturers. One was the Southern and Eastern African Network of Analytical Chemists and the other being the East Africa Network of Analytical Chemists.

The IOCD working group on chemistry of tropical diseases was active for many years in the search for pharmaceuticals for treatment of the diseases afflicting millions in Africa, Asia and Latin America, in medicinal chemistry, while the IOCD .

IOCD also has a group on bioprospecting and, in fact, I keep in touch with its chairman even now. Its chairman, John Kilama, is a Ugandan chemist who now lives in Wilmington, Delaware. He actually got his degree in the U.S. - - in Colorado and then worked for years as a chemist at the Du Pont Company in Wilmington. As chairman of the IOCD group on bioprospecting, which is actually called the Biotic Exploration Fund, he and the chemists in his group help a country to examine its plant life and then extract from this new compounds that can be commercially exploited; drugs, personal care products, and so on.

One of the first projects they carried out was with South Africa. I was involved in helping this group make the initial contact with South African scientists and in organizing their mission to South Africa in about 1998. The IOCD scientists cooperated with the South African scientists and government officials in formally establishing chemical prospecting in South Africa. This program in chemical prospecting, or bioprospecting as it can also be called, is now off and running, with products emerging that are also being commercialized to the benefit of South Africa.

Their second project was with Kenya, with the famous laboratory in Nairobi, Kenya, called the International Center for Insect Physiology and Ecology (ICIPE). I knew this laboratory very well, for when I was with UNESCO in Nairobi, I was invited to their board meetings. ICIPE is probably one of the best laboratories in all of Africa, other than in South Africa. The IOCD team worked with ICIPE to organize a bioprospecting program that is continuing to evolve now. The government of Kenya under the Wildlife Service has also established a bioprospecting program and is building a laboratory for bioprospecting at this moment. John Kilama, the Ugandan chemist who heads the Biotic Exploration Fund of IOCD, has been back to Kenya repeatedly under IOCD's funds to meet with the government people in setting up this laboratory. At their request, he is helping them draft a law for protecting intellectual property rights in Kenya. It is their hope the assembly will pass legislation to approve the law. If you have the laboratory with scientists in it working on plants and exploring new possibilities for pharmaceuticals and the like, you better have a pretty good intellectual property rights regime or that information is going to be stolen very quickly by the firms in Europe and the like. So this is moving along very well.

I meet John Kilama quite regularly here in Washington. Working as head of the IOCD Biotic Exploration Fund, Kilama has also worked over several years providing similar help to government officials in Uganda. With some of these he was a classmate in his early school days. The situation in Uganda is not moving along as well there as in Kenya, but they are moving as well as can be expected because there are tribal differences that interfere with the efforts. There are days I will meet John and he will say, "Bob, I just throw up my hands. I can't believe how this could be in my own country there, my own country."

Among IOCD's other working groups, the medicinal chemistry group manages a distance learning program on medicinal chemistry reaching many countries globally and has about 60 participants at this time. IOCD also manages a book development project that collects scientific books from U.S. libraries and distributes them to libraries and universities in the developing countries.

Q: Did you get involved at all in the European controversy over frankenfoods? These are chemical modifications of plants.

MAYBURY: I know the controversy very well. This is a hotly debated issue and is probably political in nature, so IOCD has been careful not to get involved in the political aspects of chemical problems; fortunately, we stayed out of this one also.

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Q: Looking back now, I don't know if you have been able to keep up or monitor, what is happening chemistry teaching wise in Africa?

MAYBURY: There is no measure of this I could use to give you a reply that, to my mind, would be accurate or meaningful. I could give you something that is just anecdotal, for I am in touch with African scientists.

Q: Even anecdotal, did do you get any feel that this is one thinks of Africa as being full of plant life. You mentioned chemistry. Here is this very rich continent and this sort of thing. Is it being taken advantage of by local universities and all or not?

MAYBURY: As I have just described, the IOCD group called the Biotic Exploration Fund under this Uganda chemist, John Kilama, has successfully helped three African countries establish bioprospecting programs, which are potentially able to mine their rich biodiversity and create wealth for their peoples, provided they persist in promoting the necessary intellectual property legislation and have enterprising individuals who can enter world markets with successful products.

Q: You had this horrible thing there. You had the president of South Africa declaring AIDS.

MAYBURY: Before the current leader.

Q: But declaring AIDS not being there, basically, just killing millions of people.

MAYBURY: Of course.

Q: Just incredible.

We have you back at Goodwin House where we both are in retirement. With the internet and all, I imagine it allows you to sort of monitor what is happening.

MAYBURY: The internet is a big help, but I also read a lot. I get Science regularly and read what I can in that, though my knowledge of the field of science I once knew keeps receding more and more. The articles are almost unintelligible anymore. It is unbelievable.

Q: The leap forward you have been involved in, you can certainly take great satisfaction in your contribution to the dissemination of knowledge and sort of the apparatus which disseminates and discovers.

MAYBURY: What I feel a sense of personal satisfaction about is I can see things are going on beyond me now and there are others tackling things and it is moving. It doesn't mean I solved all the problems, but you at least got something started. It is good to see that.

Q: If one thinks back at where the world was chemical wise, you might say when you started this and where it is now, it is tremendous.

MAYBURY: I should add that after I left the World Bank in 1987 and took on IOCD, a colleague of mine at the Bank proposed that I lecture on the topics of our World Bank training program at a management institute in the Netherlands where he is a board member. In 1990, when I was in Europe for the annual meeting of IOCD, I visited the Netherlands International Institute of Management in Maastricht, The Netherlands, to meet its president. He agreed that I return the following year and present a series of lectures in the MBA course based on the training program at the World Bank. For the next ten years, until 2002, I went to Maastricht from the annual meeting of IOCD in France and presented lectures which I gradually adapted to the participants, who were brought to Maastricht from many countries, particularly developing countries.

Similarly, in 1994, another former colleague at the World Bank asked me to present lectures based on the training course at the World Bank to a class of participants from developing countries at the International Law Institute (ILI) in Washington, DC. Again, I have presented these lectures at ILI, in many cases several times a year, until the year 2013. I focused these lectures on the transfer of technology to developing countries.

I mentioned earlier that I had collaborated with Howard Pack, an economist in the World Bank economics research division, in drafting a case study for the training program. After both Howard Pack and I had left the World Bank, in 1992, he invited me to teach a course on technology and development for a semester at the University of Pennsylvania where he is a professor. Then in the years 1999 and 2000, I was invited to present lectures on technology and development at the Saudi National Institute for Industrial Development in Riyadh, Saudi Arabia. In both these occasions, I drew on my understanding of technology and development developed through my association with Weiss and Kamenetzky at the World Bank.

Q: I can't imagine any hostility to what you were doing.

MAYBURY: No. Science has always been a favored group in UNESCO and even internationally it still is. I think at this moment if I went down here at the National Academy of Sciences right now where I have a number of friends, they are all very positive about UNESCO, there is no question about it in the scientific community. You don't have this hostility. I am not saying that most of the scientists are very politically savvy. I am afraid many are not. They tend not to be.

I am sure if I went to a political science meeting, I would run into much more negative sentiment about UNESCO, although that depends too. I am a member of a group here in Washington right now, called Americans for UNESCO. This was formed by the former deputy director general, a wonderful American educator, the moment UNESCO was left high and dry by the U.S. by the Reagan administration. When he formed this group, he asked me to be one of the charter members. I have participated in it since it was formed. One of the members who is an officer is Dick Arndt, a former State Department official who headed the U.S. Information Service (USIS) and worked in many countries. Another member is Ray Wanner, who was the U.S. delegate to UNESCO under several administrations. Our group is certainly highly critical of the decision by UNESCO, but we are also highly critical of the U.S. for abandoning or refusing to pay up.

I have not spent the time to study the political science aspect of the UN organization in world affairs. I am aware there are books on this. There are positions you can take on this. For some years, I was in very good contact with Professor Ernst Haas at the University of California, Berkeley. Any time I'd be in Berkeley, I would stop by his office and he'd ask me to come in and talk with him. He'd ask me "How are things going at UNESCO?" He is a professor in the department of government studies at UCal/Berkeley.

Q: Did you, or when did you, feel the hand of international politics? Or did you feel it?

Later UNESCO got into very much difficulty, indeed, we even pulled out of it.

MAYBURY: Right now we are out of it. We are not out of it but we are not paying our dues.

Q: Was this beginning to happen when you were there?

MAYBURY: I told you earlier that the first incident concerned a misunderstanding with Israel. The general conference took the part of condemning Israel for damaging the support of some sacred temples in Jerusalem.

Q: Abu Simbel or not?

MAYBURY: No.

Q: I know, but because Egypt and Israel were at odds. It wasn't that?

MAYBURY: In fact, Abu Simbel is one of UNESCO's brighter points. It collected funds worldwide to cover the costs of restoring the historic structures at Abu Simbel. In fact, I knew the man in charge of this fund-raising at UNESCO. He's an Italian geologist who was very dedicated to this project.

No, the next big mess in UNESCO was over an international issue and that's more recently. That occurred in the '80s, I think and was over the freedom of the press.

Q: Oh, yes, and many of the countries in the UN wanted to restrict the freedom of the press.

MAYBURY: That's right, and here again the general conference went along with these decisions, but the U.S. government did not. In that case, England and the U.S. government and I think maybe the Netherlands, all three, withdrew. Fortunately, under George Bush the U.S. returned to UNESCO once UNESCO firmly committed itself to press freedom.

But today, we have withdrawn over a Palestinian issue. The Palestinian liberation movement applied for membership in UNESCO and the general conference voted on that last year. Our delegate voted against it along with several other delegates, but they were out-voted by 180 to 5, or something like that, so the Palestinian National Liberation group was granted admission to UNESCO. We have a law that dates back about 20 years under Reagan that said anytime a UN body admits Palestine as a member, the U.S. will not pay its dues to that body. It is a law Congress passed 20 years ago.

Well, Congress invoked that law immediately when this vote took place and our delegate knew that. In the general conference of UNESCO, he had voted against admitting the PLO, but he was outvoted, obviously. He had only three or four other people voting with him, but a huge majority in the general conference voted to admit Palestine.

My position on this is also the position of a man I hope to meet as soon as I can at Georgetown, Professor P. J. Singh. He has written an outstanding book under Rutledge Press on UNESCO, as he has written on each of the UN agencies. His is considered one of the most informative and balanced statements on UNESCO and it gives UNESCO very high marks for what it does, but it also points out these difficulties.

He does say there that the U.S. is not a very good member of these UN agencies. Whenever a group of member states as a whole takes a position that differs from our view, we leave or we fail to pay up. He points out that you can't have a unified body in which members have the right to withdraw if they disagree with the overall vote of the group. I can see the logic in this and he does too. He says let's face it. We need to recognize that the UN is simply an ideal. It should not be taken as the reality it points to,

but should be recognized as much like a guide star. But it's sad - - this is where we are at this time.

Q: The UN went through all sorts of political turmoil at various times. How did this play out? Can you think of any?

MAYBURY: No, I cannot.

Q: Around the 1960s we established science attaches in our embassies. Did these have any impact on you?

MAYBURY: I knew the science attaché in Paris very well. In fact, he was my neighbor in the '80s when we were back in Paris my last three years. He was our neighbor. I got to know him very well. When I came back here to Washington, he was back here and in the American Chemical Society where he had an office there, so I kept in touch with him.

My Washington contacts in the '60s and '70s when I was overseas with UNESCO were generally through the UNESCO National Commission here, a group of American citizens who work through the State Department for UNESCO. The UNESCO National Commission is under the International Organizations section of the State Department. Dick Knobbe, who was the executive director of the commission, I know personally very well. We sit together a couple of times a year on the Americans for UNESCO organization here in DC. He is very active in that.

When I would fly into Washington from Paris or Nairobi, he would always meet me. I have stayed at the Cosmos Club many times, because the national commission had a room there and I could always stay there.

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Q: Would you find when you are going to a country and talking, that you would feel almost obliged to talk up UNESCO?

MAYBURY: I didn't, no. In fact, I recall being criticized once when I was at the UNESCO office in Nairobi. I was editor of the newsletter we sent to all African universities, in which we described various science programs and activities in the region. The assistant director general of science at UNESCO headquarters in Paris, a Syrian professor of physics, once accused me for not pointing out prominently that a particular activity was a UNESCO project. I just smiled and walked away. I didn't let that bother me. I just realized he probably felt I should be doing all I could do when I had opportunity to promote public understanding of UNESCO.

I would have to say, that in that respect, I probably was not sufficiently aware of the importance to an organization of public relations and the need to promote the organization when it is appropriate to do so. I don't think I have ever been hostile to

UNESCO, or ever worked against it openly, but I didn't carry on a campaign, even when I was the acting director of the Nairobi office, which as I have now indicated, I often was.

Q: What about the Soviet Union? Did you have the feeling that, what was your impression of chemistry in the Soviet Union?

MAYBURY: I have known a number of Russian scientists in my UNESCO work. I already mentioned Professor Victor Kovda, the director of the science sector in UNESCO in Paris. I also knew Professor Balazin, a Russian professor of chemistry, who was a member of that planning team of the pilot project. He was the professor of chemistry and head of the chemistry department at the Pedagogical University in the USSR. For all I could tell, in discussions he sounded like a perfectly reputable chemist. There again, I don't think in the field of chemistry that there is any question that competent chemists can come from almost any of these countries and certainly there is no reason to question the chemistry professors I have met from Russia.

Q: Did you have much contact with other units of the UN?

MAYBURY: Oh, yes. I should tell you about the good link I had with the IAEA, the International Atomic Energy Agency, a UN agency located in Vienna. In fact, I actually published a book jointly with the head of their science education division, who later became the personnel director for the UN Development Program (UNDP) in New York. In the '60s when I was working at UNESCO in Paris, he invited me to cooperate with him in organizing a workshop at IAEA for science educators from around the world on the use of isotopes in chemical education. When he convened this workshop, I went to Vienna to participate along with him in the workshop and joined him in publishing the proceedings of the workshop as a book bearing our two names. This was an instance of good cooperation between UNESCO and a UN agency.

Although I had no link with the World Health Organization (WHO) at the time I was in UNESCO, I have had good links more recently through work I have been doing after retirement from UNESCO. So let's see, what other UN agency could I possibly have been involved with?

Oh yes - - there was that week in Aspen, Colorado, where I was invited to serve as a consultant at the meeting of the U.S. committee preparing their paper for the forthcoming UN Conference on Science and Technology for Development in Vienna in 1979. So again, I view this example as cooperation with the United Nations, for the Vienna meeting was convened by the UN director general.

I had a very positive feeling about the UN all those years working with UNESCO because we had good links with bodies in the UN itself. The UN had a committee called The Committee on the Application of Science and Technology, UNCAST and I actually remember meeting members of that committee at the UN building periodically when I would travel back to the U.S.

Q. I want to thank you very much.

End of interview