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INTERVIEW WITH ALAN JAMES GALLOWAY (PART I)

by Carla Ehat & Anne Kent

April 14, 1977

INTERVIEWEE #1: Alan James Galloway (AG)

INTERVIEWEE #2: Mary Galloway (MG)

INTERVIEWERS: Carla Ehat (C.E.) and Anne Kent (A.K.)

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CE: Today is Thursday, April 14, 1977. We are here in Carmel Valley, continuing the oral history project of the Marin County Library at Civic Center, and we are going to have the pleasure shortly of talking with Alan J. Galloway. Alan Galloway is an internationally known geologist and scientist, born in London, England, on February 7, 1904. He was educated at Harrow and King's College, Cambridge University, and received his B.A. in Natural Sciences in 1925. That same year Mr. Galloway joined Shell Oil Company and was sent to California. His first job was Junior Geologist doing field work in micropaleontology at Bakersfield. While at this office, Mr. Galloway and his Shell associate, Mr. Edwin Roy Weston, became involved in botany, collecting rare Kern County wildflowers. They worked closely with Alice Eastwood at the California Academy of Sciences, an association that was to last Mr. Galloway's lifetime. He served the society after his retirement in 1958 as a volunteer research associate and trustee, and conducted many field trips for the society. He has given entirely of his time and talents to this organization.

Mr. Galloway's career with Shell Oil Company took him to many places in the world. He has held responsible positions in Oklahoma, Missouri, Texas, and New York, and was for ten years, prior to his retirement in 1958, Executive Vice President in charge of all Shell Oil Company exploration and production in the United States and Canada. He is the author of

many scientific papers, and his monograph, *The Geology of Point Reyes*, will be published later this year as a bulletin of the State Division of Mines and Geology. But let us turn to Mr. Galloway and have him tell us more about his exciting and extraordinary life, and hopefully his years in California and Marin County. Good afternoon, sir.

AG: Hi.

CE: Tell us, Mr. Galloway, when did your interest in geology begin?

AG: My interest in geology began before I came out to the United States and was largely due to the influence of my father, who was a medical doctor, like so many of the founders of the California Academy of Sciences, and his hobby was geology. Many times on vacation in Scotland he took me on long walks which took a look at the geology exposed in the cliffs, and he was also interested in botany, so I learned many of the flowers of England.

CE: Tell me, Mr. Galloway, what prompted your attending King's College after Harrow?

AG: Well, that was largely the financial situation of my family, it was a question of.... I went up to King's on a trial run to try the scholarship examination, and it so happened that I *did* get a scholarship, which in those days was a sum of money which was applicable to the scholarship bills. This was very welcome to my family, so they quickly decided I would go to Cambridge.

CE: Well, I noticed, Mr. Galloway, that you received first class honors in *tripos* Part 1, Natural Sciences, which was a three-year course, which you completed in two years. How did that come about?

AG: Well, that came about this way. The....

CE: Well, while you're thinking of that, would you be good enough to explain to us what *tripos* is?

AG: *Tripes* refers to the stools on which the candidates for a degree sat while they were quizzed by the professors.

CE: Three-legged stools?

AG: Three-legged stools, that's right, hence the word *tripos*, which in Greek means a three-legged stool. And it was necessary, therefore, to get a degree, to pass the *tripos* Part 1, which took three years. And then, if you had a specialty, you'd take the *tripos* Part 2, which you're supposed to take two years in addition. Actually, I completed both of these examinations in three years, which enabled me to apply for a job with Shell.

CE: That was my next question, Mr. Galloway: What prompted you to use your knowledge of geology and go to work for an oil company and Shell?

AG: Well, again, it was just money. It was the worst reason in the world.

CE: Well, we're talking about what, 1926?

AG: Yes. I had been trained as a chemist originally, and when I applied to the appointments board at Cambridge for a job, I found there was one job in chemistry available, and I think there were two hundred fifty applicants for this job. So I gave up any attempt to get a job as a chemist and changed my specialty to geology and very easily got a job with Shell as a geologist.

CE: Mr. Galloway...all right, you made the decision to join Shell, and how did it come about your first assignment brought you to Bakersfield, California...as an Englishman?

AG: Well, I didn't know what I was up against in Bakersfield. I *was* told by the head of geology in Los Angeles that I would be assigned to Bakersfield. When I inquired around among my friends, I found they described it as "the jumping-off place."

CE: Didn't you agree?

AG: I agreed after I had been there for a short time, because summers were extremely hot, and the Chamber of Commerce at Bakersfield would not allow me to say how hot they were. It was before the days of air conditioning.

CE: You were there almost three years, weren't you, sir?

AG: I was there a full three years, yes.

CE: Describe your arrival.

AG: Well, my arrival would have created quite a stir today because I was clad in tweeds, heavy tweeds. The temperature was around ninety degrees in the morning when I arrived.

CE: What month was this?

AG: This was August of '25.

CE: Nobody to meet you there. Were you absolutely without any friends or associates?

AG: I knew no one. Exactly no one.

CE: They might just as well have sent you to Africa.

AG: Yes.

CE: Well, I understand your responsibility there was a Junior Geologist, and also you were involved in micropaleontology. Could you just tell us briefly what that is?

AG: Micropaleontology was just starting in the valley, and it is connected with the fact that when you core a well for oil, you get only a very small piece of rock back in the instrument, and so you have to be able to tell from the nature of the rock and the fossils therein what the age of it is, and *that* you can only do with a very small microscopic animal. Actually, when I arrived in Bakersfield, it was a very good moment; micropaleontology was just starting, and I had sufficient knowledge of paleontology to be able to pull my weight in the office there in Bakersfield. And I also, at that time, very shortly met Dr. Hanna, G. Dallas Hanna, who was on leave, I think, at the time from the Academy of Sciences, and he had made the decision to work on a microscopic vegetable called a *diatom*—it's part of the plankton of the sea, from which oil was supposed to be derived at that time. And he encouraged me to work on the *forams*, which is a microscopic animal, again of the plankton of the sea.

CE: So you really were in on the beginning?

AG: I was right in on the beginning, yes. Later on I had four men working for me in Bakersfield, and some of them, later on, became famous, like Perry Rikkey, who wrote the geology of the mountains inland from, the Santa Lucia Mountains inland from Carmel. And so I have trod in his footsteps later on.

CE: Well, wait until your monograph is published on the geology of Point Reyes Peninsula, and there will be many men looking to your experience. Would you tell us about your second interest, at the moment in Bakersfield, of botany, and how did you and Mr. Weston get acquainted, just by virtue of working for the same company?

AG: We were acquaintances by working with the same company and because he was engaged in....this was bootleg times, remember, Prohibition times, and he was engaged in making fig wine, which I appreciated. We had a large vat in the drafting room at Bakersfield, which was....

CE: Was he the draftsman?

AG: The draftsman at that time, yes. So by buying a sample of his wine, he and I became acquainted.

CE: And then you decided to botanize a bit around that desert area.

AG: Well, he was acquainted with Miss Eastwood. I was acquainted through a letter of introduction with Alan Chickering, who lived in Piedmont. He was also acquainted with Miss Eastwood, and he was trying to grow desert plants in his land in Piedmont.

CE: His garden there....

MG: Especially *calochortus*.

CE: *Calochortus*. You would go on field trips on your off-hours, then, with Edwin Weston. And I brought with me some letters that he wrote beginning 1926, for three or four years, to Miss Alice Eastwood, explaining some of your trips, and you're mentioned very frequently, of course, on these sorties. Did anybody else help you? Did you have any feminine companionship or assistance?

AG: Well, two girls mentioned in Roy Weston's letters to Miss Eastwood, and.....

CE: Do you recall their names?

AG: No.

CE: Well, didn't you actually discover several rare new species that you sent to Miss Eastwood?

AG: We discovered a new *calochortus*. We also discovered a new *fritillaria* and discovered a number of rare plants, like *fritillaria brandegeei*, which hadn't been seen for a long time.

CE: Are these plants now in the herbarium at the California Academy?

AG: We sent them to Miss Eastwood to be deposited in the herbarium of the California Academy of Sciences.

CE: I understand there is a story about tea—a tea story, didn't you tell me? What is the famous tea story in your Bakersfield period?

AG: Well, the tea story, which I repeated elsewhere, was that I felt the lack of good British tea in Bakersfield. Bakersfield was a very different place in those days to what it is today. I think it was a maximum of thirty thousand people; today there is probably more than a hundred thousand. Anyway, it was a small town, and I decided one day to contribute some tea, for some reason, to everybody in the office, including the roustabouts, scouts, etc. I have a picture of this episode when I donated good China tea and Goldbert Brown (?) biscuits.

MG: Lapsang....

CE: That must have been a great day for Bakersfield.

MG: I'm sure they appreciated it.

AG: I think they enjoyed it....anyway, the boys in the office.

MG: Well, Alan told me that some of them got tight on it, and that *is* possible, because we noticed later on, when we had children of our own and had a big family tea, that they would get quite tiddly, so I think the roustabouts probably did get very tiddly on it. Six cups of good Lapsang.

CE: Oh, Wonderful! Well, Mr. Galloway, after your three years there, then you were sent to San Francisco, I believe, is that correct?

AG: Actually, I found myself, like most young men, asking where I was going after about three years.

CE: I hope I'm not going to spend the rest of my life in Bakersfield!

MG: Where's the future in this company?

AG: As a result of all this, was that I was moved from Bakersfield to San Francisco with the thought on the part of the company that they might take advantage of my chemical ability.

CE: Use all talents.

AG: Yes. They were just starting the research office up at Emeryville, and they offered me a job there.

CE: Was it during this period in San Francisco that you met your lovely wife, Mary Menzies?

AG: Yes, it was.

CE: How did that come about? Did you go to the city with letters of introduction?

AG: We went to the same cocktail party.

CE: That'll do it!

AG: Actually, I arrived in San Francisco with a pocketful of introductions to most of the hostesses with unmarried girls, given to me by Lady Palmer, the mother of an old friend of mine at King's, and she was a Californian and a Kappa from Cal. And Mary was not on the list; however, I met her while going through the list. And she, of course, was of Marin County, which wasn't included in the list at that time.

CE: And when did you marry Mrs. Galloway?

AG: We got married in November 1930.

CE: 1930. And you have three daughters, I understand. Would you name them for us?

AG: We have three daughters: Ann and Jeannie and, as an afterthought, nine years later, Kathy. And we had the advantage of seeing our grandchildren and one child, Kathy, during this last week.

CE: Tell me, Mr. Galloway, when did you first become acquainted with Marin County, Bear Valley, Point Reyes Peninsula?

AG: I first saw that country from the back of a horse. Mr. Alan Chickering took me for a weekend to Bear Valley Country Club, which was then more or less of an outgrowth of the Pacific Union Club, and as a guest at his house he took me on a Sunday ride. We went all over the country on horseback. I decided this was a great place, wonderful country, very attractive, and, as a result, we rode all over the country.

CE: It is a geologist's paradise, isn't it?

AG: Yes, 'tis. So later, thirty years of my services with Shell, I collected all the books and maps that were available in this country, and found, to my surprise, that nobody had worked on it since....oh, what's his name?

CE: You mean William Brewer, who wrote *Up and Down California*?

MG: Possibly.

AG: No, it was....

CE: Well, we can insert that later. What is his name?

AG: His name is ...Andy Lawson wrote the first geological guidebook to the Point Reyes Peninsula. That was April 18th, *Report of the State Earthquake Investigation Commission*.

CE: But there had been nothing written definitely about the Peninsula itself until you started that, is that correct?

AG: Well, that is just about correct. There's nothing general has been written on the subject from that time to this, and so I found the geology of Point Reyes lying untouched since the time of Andy Lawson.

CE: All right, now, what I would like to do is get the map of the Point Reyes Peninsula on the table, and we'll go into that. Didn't you find it strange that no one had done this?

AG: It was strange. I later found out that this was very normal, particularly when the early geology was done by some of the heroes of geology in the area. Then the subsequent students would tend to think all the geology had been done, and they didn't want to differ with their heroes. But the fellow that got me started on this work was really John Crowell of UCLA. He gave a great talk at a geological meeting, which inspired me to do the work along the San Andreas Fault. He said all of this work has to be done before we can really understand the San Andreas Fault.

CE: All right, now, let's study the map here for a moment. You know, Mr. Galloway, I have a copy of the land use survey that was prepared in preparation for acquiring the Point Reyes Peninsula for...to make it the National Seashore, and this was prepared by the National Park Service, United States Department of the Interior, in February 1961. Now, I think it is an excellent document; it covers the history, climate, and geology of this area, and there is an extraordinary chapter that you have written on the geology, and it is accompanied with a map much simpler than the one on our card table. But I wonder if you would be good enough to tell us a little bit about it. What did you find so extraordinary, for example, about this part of the world—or unique, if I may say—that does not exist anywhere else?

AG: Well, the important thing about the Point Reyes Peninsula in the geology of California is that it is separated from the mainland by a long valley which contains the San Andreas Fault, and therefore I found it very interesting, as the geology of the island—of the peninsula, rather—of Point Reyes is entirely different from the land to which it is attached. And my interest was much enhanced by the fact that Mrs. Galloway's parents owned a summer home in Bear Valley, which is across the fault from Olema.

CE: You mean west of Olema?

AG: Yes, west of Olema. And so my inclinations and work both brought me to this area.

CE: Well, the San Andreas Fault, the epicenter is approximately where, somewhere west of the Golden Gate Bridge, out in this area?

AG: Well, the epicenter of the 1906 earthquake lies *under* the fault, and the place where the greatest movement was measured is up north of Inverness, at the south end of the Tomales Bay. However, many of the well-known phenomena of faulting are to be seen in this stretch of twenty miles of fault north of Olema—northwest of Olema..

CE: Well, does the fault more or less parallel the road that goes from Bolinas to Olema today?

AG: Yes.

CE: Up this valley?

AG: That's one disadvantage of faulted country of this kind, and that is that all the roads tend to run up the fault trace; this is the only flat piece of land you see, and consequently most of the exposures are hidden by the works of man.

CE: Well, I understand, looking at this map—the one that you prepared for the land survey use—there seems to be three distinct categories of rock here. I was unaware that there was granite, or what you call loosely granite, that was at the extremity of the Point, and then the ridge of Inverness, and then you have this vast area of other material. In your article you divide the rocks in three main categories: igneous rocks, sedimentary rocks, and metamorphic rocks. Is this a peculiarity of the peninsula?

AG: No, this is a worldwide characteristic of geology. But the interesting thing here is that granite is observed on the west side of the fault but not on the east side, and we know more about that kind of thing today than we did in 1908 or 19....

CE: Well, certainly, when you started.

AG: When I did work here, yes.

CE: Well, is this area, has it moved, as some people indicated, has this whole peninsula moved north from Southern California?

AG: This whole peninsula has moved north from Southern California, and I have told many meetings of residents that if they sat here long enough, they would see Disneyland come by.

CE: Actually, of course, the time frame for that would be how long? I mean, what are we talking about, in years?

AG: The time involved would be of the order of millions of years, so they'd need an unusual amount of patience to see this happen, but it does underline the fact that the Point

Reyes Peninsula is moving northward on the Pacific block as compared with the mainland, which is moving southward, relatively.

CE: At comparable speed? I heard once that it was about three inches.

AG: Two or three inches.

CE: A year.

AG: Given enough years, it amounts to millions of feet.

CE: Of course. Are there evidences today, Mr. Galloway, of the schism caused by the earthquake of 1906?

AG: Oh yes. The evidence of the 1906 earthquake is very clear and stands almost as it used to in 1908 as it was described. Many people then thought it would be quickly wiped out by the effects of erosion and climate, but, in fact, today it is almost as clear as though the earthquake happened yesterday. And you can also see evidence of many earthquakes in the past, which tells you that many earthquakes will happen in the future.

CE: Well, you know, that's a point of conversation with every newcomer to California. They say, "How can you live in this part of the world?" and, "Aren't you frightened?".... and I have yet to meet a native Californian who gets excited over earthquakes. Can you explain this attitude?

AG: I think the reason for the attitude is that they have mostly lived through many earthquakes, and nothing had happened to them. This evidence can be seen all the way up the Tomales Valley, and many of the houses standing there today were reported in Andy Lawson's survey of the area as being untouched by the earthquake of 1906.

CE: Do you have any theories about when we might have another earthquake in the San Andreas Fault, sir? Have you put serious study to this?

AG: No, I have not because I have doubt that people will pay much attention to it. In fact, I see great political difficulty in handling a forecast of an earthquake in this area because people tend to move out, and nothing happens, and they have grounds for a damage suit. The same also applies if they don't take a forecast seriously and an earthquake takes place and damage ensues, then there's trouble again. So, I think that, politically, it would unlikely that, in my lifetime, anybody will actually make a forecast of an earthquake happening.

CE: But as a scientist, do you think that there *is* a likelihood of the San Andreas acting up again?

AG: Oh, yes. As a scientist, I can only feel resigned to the situation. Undoubtedly, the area I work in tells us unequivocally that an earthquake can happen any moment, and we know now that earthquakes happen when a sufficient stress accumulates underground, but how fast it accumulates, we don't know. We can only guess. An earthquake might happen during the coming night. And all we know for certain, all we can be certain about, is that another one *will* happen.

CE: People are talking, as you know, about our drought that we are currently involved in. In Marin County; it's very serious. I imagine it's growing serious in your area here.

AG: Yes.

CE: Would the absence of rainfall have any effect upon a subterranean outbreaking?

AG: I think the answer to that is no. The effort to tie earthquakes in with rainfall and climate, generally, has so far been unsuccessful. However, much of the damage cause by earthquakes is cause by landslides—and this is country which is particularly subject to landslides—so that if there is an earthquake at any time when the country is wet, and therefore the force of friction is reduced, we can expect damage in Marin County, in this same area. And, in fact, a lot is written about this by Andy Lawson in his 1908 report.

CE: I understand, Mr. Galloway, that you and your wife bought a ranch in this area we are talking about; was it near Bolinas Lagoon? Mary, would you like to tell us when that occurred?

MG: Well, yes, because it really was an extraordinary story, sort of the answer to a dream. We were living in St. Louis, and it was a period when Alan was terribly overworked and tired, and I was quite worried about him, and told a friend who came by the house that morning, and she said, "Why doesn't he take a weekend off?" And I said "Ha! try and get a weekend off from Shell!" And when Alan came home for dinner that night, I said, "Ha, ha, ha, Helen Hockaday came by and said, 'Why don't you take a weekend off?'" And he said, "Well, it sounds like a good idea, I think I'll ask Frazer," and he *did*, and he was given the weekend off, and there we were, plunk in Missouri. Where were we going to spend it? We wanted ocean. Well, we thought, we'd never been to Long Island. We heard of a place called Montaque, so we called up there...no, they were full up. And then we looked at each other—remember, this was back in '40, when you didn't zoom across the continent the way you do now—and we admitted to one another we really wanted to go home, to San Rafael. So I called up my mother and said, "Can we come home for the weekend?" And there was sort of a gasp and then a welcoming, "Yes." And I said, "Alan's terribly tired, and we don't want any parties, we just want to come home and, well, we might even look around for some land—you know how we've been talking about it." She said, "Fine, I'll meet you." And she met us at the plane, looking very pleased with herself, and said, "I have two ranches for you to look at!" I said "Oh goodie!" Well, one of them we used to call the Golden Bow—one of

the Nicasio Valley ranches—and then she said the other was the Bjorn Ranch. And I said, "Oh, *that* I would rather have than anything in the world, but Alan gets the sniffles and he doesn't like the fog"—with which Alan spoke up and said, "Well, let's look at it anyway." So we went over on an absolutely gorgeous day and walked all over. It was all very familiar to me, of course, and....

CE: This was pre-Audubon Canyon Ranch days.

MG: Yes. This was owned by only the second owner after the Spanish grant. And so we walked all around, and I looked at Alan and he looked at me, and I said, "Well, what about the fog?" and he said, "Well, I'll just wear a sweater most of the time."

CE: Is that true, Alan?

AG: That is true. Even today I took my sweater off

CE: Well, then what happened?

MG: Well, then it was a running dairy ranch owned by a very strange character who couldn't.... Well, first of all, Leo was the tenant, wasn't he? It was owned by a man called Squire, and his tenant was Leo—one of the, I think, Marin County Portuguese families—and it was running as a dairy ranch. Well, we went back and thought about it. And then we returned to California for our twenty-fifth wedding anniversary, and I think that was the point at which we bought it.

CE: I see. But that weekend you saw it and....

MG: The weekend we saw it was earlier, and so then we bought it, and then we.....

CE: How large a ranch was it?

MG: Eight hundred and -odd acres, and a running dairy farm—with nothing but the old ranch house.

CE: Bill Miller ...had taken that....

MG: Leo, yes, he was our first good tenant. We kept the original one for a while, and then he had to leave, so then we were *very* fortunate in getting hold of Bill Miller, and he and Violet moved over with the girls and Captain and Mrs. Peetar.

CE: And, you know, he tells us about delivering the milk over that road back to the other side of the mountain with no lights during the blackouts.

MG: Then we held it as absentee landlords, thinking that we shouldn't—oh, we had all kind of dreams. Alan was going to retire and be a dairy farmer.

CE: Just like an Englishman, get back to the land.

AG: Well, one thing I learned was that when you retire it is time to retire from dairy farming too.

MG: And so we went on as absentee landlords, and all this time we were spending our summers renting, all and any—I mean, I think we rented every house in Bolinas. And the first year we owned it, we camped on it. It was a very original camp because I read an ad in the *Independent*...somebody had a trailer for sale, and I went and looked at it, and it must have been the original of the present trailer; it was a box-like thing with double beds that pulled out. Anyway, we set this extraordinary affair up in what's now the Garden Club of America Canyon and....

CE: Is that north of where the Bjorn ranch house is?

MG: Yes. And we ran a hose down from the ranch water line and had solar heating, hot water all summer, just from a hose, and had, I guess, one of the best summers we've ever had on the ranch there. Then the subsequent summers we rented in Bolinas, and then finally.... We felt we should build the house we wanted to build over there. By this time we had given up the idea of being ranchers ourselves, until our youngest could drive a car, and this was a great mistake, because she loved it more than *anybody*, and would have been very happy before she could drive. Anyway, we did finally get around to building.

AG: The war intervened, and it was impossible to build a house during all the wartime. We would have built before 1945 or '46....

CE: Where were you during the war?

AG: We were in Houston. I was producing oil, and I think doing a more useful job than if I had been in San Francisco.

CE: All right, Mary, do you want to continue with this?

MG: Well, the house....

CE: When did you build that home? I've seen your house there. The Point Reyes Bird Observatory people, I believe, use it as their headquarters, don't they?

MG: Yes. Well, I put myself to sleep for many, many years, in all the Midwest places we lived, building that house, mentally, and finally when the time came we thought we could,

we got our old friend Ed Page and told him what we wanted to do. And I said I wanted a house I could sweep out in twenty minutes and I didn't want a drop of paint on *anything* and we wanted a view of the lagoon and to be by the stream. Well, he produced something so much better than anything I'd ever dreamt of that it was absolute bliss, and *nothing* wrong with that house, it was everything that....

CE: Well, I saw it last year for the first time, and that main living room, I presume, is a library—and it's beautiful.

MG: I don't want to hear anything about it.

CE: But it does have the atmosphere of country, and it is a beautiful thing. I was unaware you could see the lagoon from there. Then you kept that and went....

MG: We had twelve years there. We cleared....did an awful lot of clearing. Alan put in the water system. We had our grandchildren there and horses—they all learned to ride there, and they would come out from the East, and we'd have to set up more camp for them, but it was a very happy period.

CE: You know, I'm beginning to think, in life, the more I interview people, that nothing you have is forever, is it?

AG: No.

CE: And everything is alone, and if you learn to release something gracefully, it's about the only chance of even keeping the memory. Well, thank you, Mary, for telling us about the house. Mr. Galloway, I think we should get back to your career with the Shell Oil Company. We sort of skipped around. In your judgment, what were some of your most rewarding assignments or responsibilities? Would you care to share any of those with us?

AG: Well, I think the most rewarding assignment that I had from Shell was when I was Vice President in charge of all exploration and production, because that was the period after the war when getting more oil was very important. And I had a wonderful gang of people working for me, and was able to decentralize the work almost entirely from New York.

CE: Continuing that thought for a moment, Mr. Galloway, it seems to me an awesome responsibility to have that kind of a job.

AG: It was a tremendous responsibility, but I was able to have other friends of mine who I knew would do exactly what I wanted and take the responsibility and run with it. That taught me a tremendous amount about people and also about how to organize an enormous corporation, to decentralize and give responsibility down the line, and it was a fine, smooth-

running operation, which I thoroughly enjoyed. The only problems I had with it were with my wife, who heard me give these large authorities over the telephone at night and....

CE: Millions and billions of dollars, and then what?

AG: Well, she always said, "Well, how about a little more house account?"

CE: Well, you're obviously a man of great integrity, Professor. Tell me, Mr. Galloway, after your many years of association with the company, have you kept in touch with some of your staff or some of the executives at Shell?

AG: Well, the answer to that really is that they've kept in touch with me and....

CE: When, over the holidays or what?

AG: Well, particularly when they heard I was sick this year, many of them called up and just said they were thinking of me, and it was a wonderful experience.

CE: It is not difficult to understand their interest in you.

AG: Well, their interest in me was largely, I think, that I let them do what they wanted.

CE: That's a rare talent, that's an executive ability that many men who say they are in that category never fulfill, to pick your staff and let them assume responsibilities, and delegate.

AG: Well, they wanted to do what I wanted to do. That's the great secret, and as long as one can assemble a staff that does what you want them to do and doesn't know it, that's the thing.

CE: Yes. You would have been excellent in the military. This intangible ability, I've seen it in some Navy men of flag rank. They have people doing things for them that they had no awareness they were ever going to do them; they think it is their idea, etc. I must ask you, apropos of this oil situation, now, since the oil embargo of 1973, interest in this country has, of course, accelerated on oil and the scarcity of it. I have heard—and I think it was a source from your own Shell Oil Company—that we will be out of oil in thirty years. Do you think this is an alarming projection?

AG: I don't think it is an alarming projection, because it's one that all of us in the oil business have known about for many years.

CE: And it's not been a particular secret that has just come upon us?

AG: It's not been a secret. There was a fellow that worked for me, called King Hubbard, who wrote a very scholarly article on this many years ago, and he has been sent around by the government to make talks on it recently, but it's nothing new to me.

CE: Why, in your judgment is the American public, and perhaps other countries in Western Europe, unable to accept the idea? Is it because of two generations of being spoiled by the American motorcar, or what is it?

AG: I think it's largely due to the fact that they do not *wish* to accept it.

CE I have also heard recently, Mr. Galloway, that Great Britain, with its oil discoveries in the North Sea, hopes to be self-sufficient in three years. Do you know more about that?

AG: Well, I don't know much about the English situation as far as the oil is concerned, but I've been over there enough to realize that I think they have overestimated the amount of oil they have and are overoptimistic as far as the problems of finding oil are concerned. I faced those problems personally for many years, and know enough not to be disappointed, but the average member of the public does not know enough not to be disappointed, so he probably hopes for the best.

CE: In your search for oil throughout the United States and Canada you have had your expertise and the experience of other men and talents to assist you. Can you see any new source of oil within the continental United States, for example, other than Alaska, that might be on the horizon, or do you think this country will go for the exploration and development of any new areas?

AG: Well, I don't think there is any underground source of oil that we know about that hasn't been exploited or that there is very much chance of finding it. It *will* be found probably, accidentally, by...as you probably know, nearly all oil is found by an independent who drills a chance well without the best of advice.

CE: I didn't know that.

AG: It's a very hard business to find oil with the *best* of advice.

CE: I have heard that this Alaska oil that they talk so much about is going to save our situation, is not so, and that actually it could be used up within a year, and would you care to comment on that?

AG: Well, the situation with the Alaska oil is that it's going to be very hard to dispose of in California. When the line is opened up, there's going to be a great surplus of oil in California, and the main problem at the moment is how to dispose of that temporarily and get it back later. That hasn't been solved yet. It's been proposed to make an exchange with

Japan, but politically that is very difficult because the oil will have to be exchanged outside of the United States, and many people in Congress are against that.

CE: If oil comes from Purdue Bay down to Valdez and is off-loaded, it has to travel on American merchant bottoms (?), I understand, to go to another American port, and some people in the Bay Area are concerned of this influx of freighters, oil freighters and tankers, into the Bay and up the rivers.

AG: I think that the chief difficulty with that is a business difficulty—it is that each vessel would be carrying a large amount of oil, so that any accident that happens will involve much larger quantities than in the past. But accidents can be avoided. As far as the oil from Alaska is concerned, it's only a drop in the bucket, it won't carry us for many years. We need a factor of many times that amount of oil to have an effect on the reserves in the future.

CE: Would you care to offer any possible alternatives to petroleum to meet the energy needs? I'm certain oil companies have thought and planned in this direction.

AG: Well, I have a very high opinion of the oil companies' expertise—which is undoubtedly prejudiced, because I was part of it—but, anyway, there is nothing I think that they cannot do. And the oil companies have turned themselves to alternatives to oil to a large extent.

CE: What alternatives?

AG: Well, the main alternative is coal, of which there probably is something like three hundred years supply, and that's a figure which would calm everybody down if we had a commercial way of making oil products and gas products from coal. But so far that hasn't been done commercially.

CE: With the growth of technological expertise, do you envision that this might happen?

AG: I certainly do, because everybody knows what is required, and the oil companies have the expertise to do it. One reason alone, if people are taking it without alarm, is that the oil companies have always rescued them from any problem of this kind, and they will probably do it again.

CE: Mr. Galloway, you seem to me to be a man who loves this earth of ours, and all of its natural resources. Would you care to share your thoughts on how man can protect the fragile interrelationship between himself and his environment? How can we slow up the destruction of our environment?

AG: Well, we can only do it by paying for it through the price of oil, as I see it.

CE: Will you explain that?

AG: That is, the protection of the environment has got to be included in the price of oil. Oil has been too cheap over all these years. We've had price fixing of oil by the government, and we have price fixing of natural gas. We've already run out of natural gas, and it looks as though we're going to run out of oil for the same reason. The oil price fixing by governments is subject to this kind of miscalculation.

CE: How has the posture of the United States, in your judgment, been affected since the OPEC nations were created in this control of oil? Do you envision a lessening of the tension on this in the future?

AG: I think the great disadvantage that I can see, from the future, is that the people will not be willing to pay for what they require, and what they require is a method of handling oil which will not be destructive of the environment. And my experience is, people are not willing to pay the necessary price to do this.

CE: Well, we've seen the rise of the price of gasoline, of course, but it's relative to everything else. I think our President is considering now taxing cars that are high horsepower, etc. Do you...can you envision any plan that would be equitable to apportion out and equate the use of gasoline, for example, amongst the people?

AG: Well, that's a political question, and it depends on whether the people are willing to pay and what it takes, and my experience is they're usually not until they are actually faced by the crisis. This has been the problem with shale oil, for instance, for many, many years. When I first came out to this country, shale oil was being discussed as a way of taking care of the shortage of oil that was then expected after the First World War, and shale oil lands were at a premium. Then there was a long period of silence during which shale oil was not mentioned until the Second War. Then after the Second War, the question of shale, producing shale oil, was again brought to the floor, and today it is again brought up, and meanwhile it has died down, and many oil companies have invested in shale oil lands. I remember one company which invested in shale oil lands to a great extent in 1926 and somehow kept their foot in the door since then, but that's a long, long time to hold land.

CE: Mr. Galloway, I want to thank you so much for sharing with us today briefly your extraordinary career and your optimism for what the oil companies can do for us in the future. It has been a most pleasant experience and perhaps we can meet again.

AG: Well, you'll have a hard time stopping me because this is my favorite subject.

CE: Thank you both.