Mālama o Mānoa

Beatrice Krauss Oral History Interviews

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ORAL HISTORY INVERVIEW I

with

Beatrice Krauss (BK)

January 7 and January 14, 1994

Manoa, Oahu

By: Lila Gardner (LG)

Tape No. 1

SUMMARY

Beatrice Krauss was born in Honolulu August 4, 1903. Her parents were Frederick George Krauss and Elizabeth Hilmer Krauss, first generation Americans of German descent. Her parents moved to Hawaii from San Francisco in 1901 and 1902 respectively. Her family eventually settled on Parker Place in the College Hills tract where Miss Krauss still resides today.

Miss Krauss was educated at Punahou School and on Maui, returning to graduate with her class from Punahou. She continued at the University of Hawaii, receiving her degree and going to work for the Pineapple Research Institute where she remained for forty-two years. After her years at the Pineapple Research Institute she taught ethnobotany at the University of Hawaii for six years and then, at the invitation of the director, moved to the Lyon Arboretum where she worked as a full time volunteer from 1974 until 1992. She is still associated with the Botany Department at the university and the arboretum.

In this tape Miss Krauss discusses the Lyon Arboretum: how it was founded on land given by the Hawaii Sugar Planters' Association to the University of Hawaii Foundation; how it operates; the founding of an association for volunteers; the conferences, workshops and classes that it offers to the public; the Manoa History Project which was started by Miss Krauss and developed into a just published book, Manoa, The Story of A Valley; and the many special features of the arboretum, including its taro collection and taro lo'i.

LG: This is going to be an interview with Bea Krauss. I'm Lila Gardner doing the interviewing. It's going to be at Bea's home on January 7, 1994.

BK: I had retired from the Pineapple Research Institute in '68. Then I went and worked six years at the University of Hawaii Botany Department. That would have been in 1968. In 1974, Dr. Sagawa, who was Director of the Lyon Arboretum, asked me if I'd like to go and work there. I worked there from '74 to about two years ago, full time as a volunteer. Since then I'm still associated with them and do some teaching and lecture work. Now while I was up there ... (phone rings). Oh, I was going to say what I did up there. The first thing Dr. Sagawa and I did was to form a support group and we called that the Lyon Arboretum Association, rather than "Friends Of"; we decided everybody had "Friends Of". That gave us a chance to offer classes. You see, as a branch of the University, they could not offer classes there, so the first thing we did with this association was to get members with very modest fees and then to start classes. We started with just a few classes until now we have many classes, concentrating on plants and Hawaiiana, and then we got into cooking. In plants it was propagation of many different kinds of plants, anything to do with propagation, care and things like that .

LG: There wasn't anything else of that kind at this time, right?

BK: No. This is the way Lyon Arboretum started --- you see the land belonged to the Sugar Experiment Station [Hawaiian Sugar Planters' Association].

LG: Right, could you just recap that briefly.

BK: Well, the Sugar Experiment Station was interested in getting a piece of land that had been denuded through poor management. And they looked around and they found this 124 acres which they

were able to get hold of fee simple; I think there were several owners. The idea was to try out trees which could be used to reforest, to use in reforestation, because sugar depends on water and water is associated with forestation. Trees would die and so forth and they would have to replant. Dr. Lyon, who was the head of the Experiment Station, was traveling around the world picking up plants that could be used for reforestation, especially going to tropical countries. The reason they did not replant with native trees was because they are slow growing. Now they would plant native trees because of the present interest in restoring native vegetation. This was a piece of land where they could try them out in nurseries before they actually grew them to plant in the forests. They also grew imported sugar cane varieties there, away from sugar growing areas, so in case they had disease or something, they would isolate them. Later that type of thing was moved to Molokai. The function of the arboretum was primarily to try out imported reforestation trees; to try out new foreign varieties of sugar cane, away from the commercial fields; and to try several crops that might have been supplementary to sugar. When they had fulfilled all these functions, they felt there was no reason to keep it [the land], so how should they dispose of it? Of course, it would have made wonderful real estate property up there, but they decided to give it to the university. The university had no way to accept land like that so the University of Hawaii Foundation was created . You know that's a million dollar business now, but it was created so they could accept this land.

LG: The Foundation was developed to accept this land; it was sort of its beginning.

BK: It was the beginning. Few people realize it.

LG: I have a good friend who works there. I'll have to tell her that. She probably doesn't know the history of it.

BK: When it was turned over to the university, it was put under one of the departments and a half-time director was appointed. There's been a succession of these. They would be mostly from

the Botany or Horticulture Departments . Half the time they would be teaching and doing research down there [the university] and half the time up here [the arboretum]. They built up a small staff, a manager for the grounds and one research person, and they started to get volunteers from among the members. Dr. Lyon negotiated this. He was head of the Sugar Experiment Station and could convince the Board of Trustees to do this. He put quite a bit of his own money in it. That money is kept separate for certain programs. Of course it's under the university budget, but a very low budget. We've always suffered. I think it was a case of "out of sight, out of mind". We're separate in a way, from the university and that can be both advantageous or not. Dr. Lyon made three specifications: that it be used for public service, education, and research. If at any time, any one of these specifications were not followed, the land would go back to his estate.

LG: Even now they have to be on their guard to continue those requirements.

BK: The public service part is tours, guided tours. The grounds are open to the public at all times, during visiting hours. Also as public service, we put up exhibits. We furnish plants, we furnish flowers, we give demonstrations. Education is a whole series of classes that we give, including -- we have thousands of school kids come up there. That could be either education or public service. The research -- we're doing tissue culture work, creating new varieties. In one big research project we were appointed for over a period of ten years by NIH [National Institute of Health] to gather plants that might be used for cancer. We had a contract of two five year periods. It's been given to somebody else now. During that time we would have to gather materials -- this is in the whole Pacific area, not only in the Islands -- and send the material for testing. Six of the plants, gathered over those ten years, show promise. I can't name them because it's a secret.

LG: That's very good. I was going to ask you to be a little more detailed about that. I'd heard that there was some cancer work.

So, that's as much as you can say.

BK: That was a designated function and how it was carried out. So, then I go up there in '74; Dr. Sagawa said he wanted me to come up so he could implement some of the ideas he had: the creation of this support group, creating classes, and having special functions, like festivals. I was involved in that and I was one of the first teachers. We got more and more people so that we have a very wide range of people now.

LG: Did you go to the meeting they had with the Secretary of the Interior?

BK: No, that was ...

LG: I notice they got some press. I don't know if you saw that.

BK: Yes. Well what happened was I asked the person who is now educational coordinator if he was on it. He said no, it was something on the spur of the moment that was created. It was on a Sunday and the only person of the staff that was there was Dr. Lamoureux who's the director. By the way, beginning with this director it's now a full-time job.

LG: While we're talking about Lyon Arboretum, I would like you to talk some about the group that you worked with that developed the lo'i, taro lo'i.

[The following is not about the lo'i project but the history of Manoa project.]

BK: Oh yes. I forget when it was, let's see. What would be thirteen years before - about eighty [1980]. Around 1980, Dr. Sagawa, who was then director, said to me, "You know we live here in Manoa and you keep telling me what interesting things happened. Why don't you start (it was called a seminar which was wrong) a project to write the history of Manoa." So he got hold of a reporter -- I forget which paper, we still have the original article -- saying that this idea had come forth and we were

asking for volunteers, for people who had lived here long and were interested to be involved. So we had this write-up and I think about fifteen responded. We had our first meeting up there. That sifted down to eleven people. And for the first five [years] -- it must have been the first five-- we met every week. What we did first was decide that each one would choose some aspect and we divided it up into the Hawaiians, the Japanese, the Chinese, the Filipinos, then churches, schools, dairies (because there were eleven dairies up here)...

LG: Uh huh, I'm going to make a note of that . Churches and schools..

BK: Yes.

LG: Plus dairies. And there were eleven dairies up here? Isn't that amazing.

BK: So each one chose. We let people choose because we thought they'd have more interest. So on that first meeting --- and then the idea was each one of us, with our subject, would do all the research we could. We named places like the Children's Mission Center which has lots of material within its archives; university archives; the state archives; and the Bishop Museum. All right, this is your assignment now. Each week people would report back in turn what they found and oh, were those exciting! We felt like detectives. And then sometimes when, say if I had dairies and I was reading up on dairies, but I came across another reference while I was doing that, I'd jot it down and give it to the person that was researching it, so we were all adding to the information.

LG: Cross-referencing each other, helping.

BK: Yes. So each meeting was two hours. We met from nine to eleven [AM]. So reporting was exciting because we'd get more and more material and we ran several more articles and people sent in pictures and we interviewed. We did oral histories on about eighteen people. For instance, I didn't have a car anymore. I would get a taxi driver from Pawaa, and for some reason since

I always talk to my taxi drivers, I found out he had lived in Manoa and so every time I saw him he would have these marvelous stories. He was a Japanese growing up in Manoa. Later we did an oral history on him. We want to give everybody credit, but he agreed to do this with the stipulation that his name would not be revealed. I said "Tony: why not?"

He said, "Well, all my friends would say I said wrong things or they'd tease me for being interviewed or something." So we have to list him as ...

LG: Anonymous.

BK: So this goes on for five years and sometimes we'd have a full complement of people who'd go on trips. Then after five years we met once a month.

LG: Okay, so for five years, that's a pretty long time to keep that kind of energy going.

BK: Yes, and then six years once a month, because we worked on this eleven years and we've been in hiatus two years since. We got pictures and everything we got, we xeroxed. Then a group of us went down to the state archives and had them pull out everything on Manoa and we had copies made or xeroxed. At first we just had xerox copies so we had an indication of where we got it. We went out to Bishop Museum, not the whole group, but a small group, and went through all of their photograph archives. And as people heard about us, they'd send in pictures or they'd tell us somebody who we might get photographs on the Mainland who had lived here. That's an accumulation. Then towards the end we began to coordinate these and sort of make it into a book with all the pictures. Well the University Press heard about it and they said, "Give us first chance. Don't let anybody else see it." So we took it there -- they had it about a year (University Press is known to be slow). Finally I guess they realized how long they'd had the manuscript and they called and said they were sorry -- it was very interesting but with each chapter written by a different person in a different

style, it was something they couldn't publish. If we wanted to get an editor and put it into shape, they would consider it. So it was sort of lying quiet, and I was just about to do this -- in fact the University Press told me the names of two good editors-- and I was going to ask the group if we could submit it, when suddenly I found out, indirectly I hear that Charles Bouslog has taken the manuscript to Glen Grant of the Mutual Publishing Company. Now Glen Grant is not an editor in the publishing business. He does things for them.

LG: Is he an actor? Isn't he an actor?

BK: Yes, he's an actor and he leads those tours, but he has, if you look in the Mutual Publishing Company's list of books published several books too. And he said he's interested. His idea was that the publisher as a Mainland man (his name is Hymer Bennett) is interested in sort of guidebooks for the different districts. Now we have exactly the material. When Glen Grant came on to it, he didn't want a running account --- he wanted to divide the valley into lower, the east , the west and upper districts, with all our stories fitting into this framework .

LG: I see, a geographical basis...

BK: Yes, whereas we had it chronologically arranged. I was against this geographic because I didn't want it to seem like a guide book because that wasn't what our story was. But finally I came around because he came around too. And I agreed to it . So now we're having troubles. We hope to resolve them when we meet on Wednesday.

LG: The chronological is a more democratic approach in the sense that when you start upper and lower you also begin to develop kind of hierarchy of class. I mean as a way of interpreting the writing. So I mean you could get into that kind of thing.
(BK: By upper and lower we meant <u>upper and lower parts of the Valley</u>.)

BK: Yes, it could, but I can see his point. People in the eastern part of the Valley, the section over there, are pretty much like at the University, St. Francis and the Catholics. And over here they are sort of related to the region. Of course there are rich people in both. There's the Cookes on one side and Castles on the other so you can ...

LG: So it's mixed.

BK: Yes, and there's no--- I mean all people are treated equally. And as I said everybody was assigned a subject or area but for some reason --- I don't know why we just took upon ourselves to write personal stories. We [Margaret Young and BK] were the longest living ones here to write our personal histories. And we used to tell the others how it was when we were children because the others were all Manoa residents but had lived here for a shorter length of time. Why don't we just tell our story. And so she decided to write "Growing up on Kamehameha" and I wrote "Ruralnook". And those were the only ones that were treated this way. All the dairies were there, so that goes on the east side, and things like that. But what he's done is to put Margaret's chapter and my chapter in between chapters on other subjects. It works out very nicely. In other words, you have a continuous story of one person. But I bring in all the old customs and such things, and so did she. Her upbringing was a little bit different than mine so there's enough difference. I would tell about the trolley, because I have marvelous stories about the trolley, and she had some. The trolley was put into a chapter by itself because otherwise the material became redundant. There was a chapter on the trolley as such, trolley in Kamehameha Avenue and Kamehameha Avenue itself. We made that adjustment. And where there was a repetition in one area and another, we put them together where it was most appropriate.

LG: So this is still --- this is the story that we're talking about on the phone --- that you were talking about. That's still up in the air? This book.

BK: Yes, it's just in the process of preparation for publication. And of course all along we felt that pictures were very, very important. We've collected them from all over and we really have some wonderful ones.

LG: Does Lyon Arboretum have a photo archive?

BK: No, just of plants up there. They have good slide collections of all kinds of plants.

LG: So that a person interested in plants can go there and look.

BK: Yes.

LG: So looking back to just Lyon Arboretum...

BK: Well, I did teaching. I led some tours. Dr. Sagawa said, "Since you use so many of the native plants in your classes," -- because I was teaching only ethnobotany I should start an ethnobotanical garden. Oh I should say I had a lot of workshops for children because I felt there was so much in nature for them to learn and so, and I also had workshops for adults in Hawaiian artifacts and things. We had Mary Prichard, who is a famous Samoan tapa maker, come up and do a three-day workshop up there. We had an ancient Hawaiian medicine and medicinal herb all-day conference. We had paper making conference. These are workshops and conferences. We had the first lauhala conference which meets now every year elsewhere.

LG: And there is a growing interest in it.

BK: Yes, so we would have a Christmas party for volunteers and things like that . Not that I was responsible, but these were created in those first years. And then of course my main thing was to do research with the Hawaiian plants and teach. Also it ended in my going out to all the schools and giving lecture/demonstrations. Another thing that was developed while I was there: the Kaimuki Regional Library got a sum of

money to have someone talk on Hawaiian medicine/medicinal herbs to all the senior citizen groups and I did that over a period of two years. They wanted something to hand out to them, so I prepared a pamphlet of twenty plants. Those were given out to all the people that attended these. I don't know how many hundreds of those were given out. And this was part of the grant. Then when that two year project was over, they gave us that book, and now we publish it, (well it's mimeographed), and it's sold up at the gift shop. Now people can have this little pamphlet.

LG: Okay, so the pamphlet is sold at the gift shop.

BK: Yes, that's on Hawaiian medicinal herbs, twenty of them. And then I prepared a series of syllabuses that I passed out in my classes on Hawaiian plants.

LG: You mentioned before that there was a group that developed the taro. You know you developed that Hawaiian section. Could you talk about that a little more in detail? That was on the other tape and I wanted to recapture that.

BK: Oh yes. All right, let's see. In 19 -- I think it is in the 1920's, Dr. Handy, an ethnologist at the Bishop Museum, went all over the islands and collected old taro , ancient Hawaiian taro varieties, and/or information about them. This is published in his book, The Hawaiian Planter. When he determined, between what he heard and actually found, in isolated areas still being cultivated, plus the report of old Hawaiian growers, that there were two-hundred, seventy-five varieties of taro, of which he was able to collect, I think it's forty-nine, and after he'd studied and wrote about them, he brought them and gave them to the Lyon Arboretum to preserve because this would be the only collection of old Hawaiian varieties together and some of them were disappearing. They were maintained there as sort of germ plasm pool as they call it. A director came to the Lyon Arboretum, whom I will not name, who said to (not named) -- told him to get rid of that collection because it was useless. This man had the title of Curator of Taro, the only such title in

the whole world. He said, "Oh but Dr. So and so, these are so valuable. You know these are the only ones that exist and since these were collected, some of the original ones are gone."

He [Dr. So and so] said, "I don't care. It doesn't belong here. Get rid of it." (the collection)

This man said, "Could I take one huli (that's a cutting) and plant one huli of each in my yard [which was away from the Lyon Arboretum] just to maintain these taro varieties?"

And he (the director) says, "No". Now I was brought up not to be insubordinate, myself, and I adhere to it. But I'm glad the arboretum employee became insubordinate because at night he stole one huli of each variety and planted it at his home. Next day Dr. So and so came and said, "You haven't destroyed those things yet. I want it done today." So he did because he knew he had saved samples. When this director -- I guess maybe the maximum years were only five years -- when he [Dr. So and so] was gone, he [the employee] brought the taro plants back and planted them. Oh, I know, he sent these huli up to Kauai to the experiment station and they were taken care of by the director of the experiment station. Then when this Dr. So and So left, the collection came back here. This time "our man" played safe and left one set up in Kapa'a where it had rested in safety, and got these varieties planted in several other places. That is fortunate because the wild pigs often come down from the Pauoa Flats ; the main thing they like is taro and they destroyed several varieties which fortunately are safe elsewhere.

LG: They don't eat the leaves right? Just to get the roots.

BK: No. Well you see they destroy the corm (underground stem) where the growing point is. See the planting material, if this is the so-called root and then the leaves come out of here, this is the growing point so what you do to make a cutting, you cut it off just below-- here-- and part of the leaves and that is a cutting. They call it huli. [Showing action with hands]

LG: And that's for starting a new plant?

BK: Yes, but you see the pigs would come down and destroy the whole thing so we lost several varieties that way. The rest, what's left, is being taken care of up there and where it's planted elsewhere, just for safety. Now as I said, sometimes when I was teaching ethnobotany I had to go all over the island to get specimens, Dr. Sagawa said why don't we start a garden of native plants, and now that's the ethnobotany garden there. We have had such a shortage of help that keeping up the ethnobotany garden was difficult after I left (because when I was active I could take care of it with some help -- with volunteers). It has had low priority and it's getting into pretty bad shape. But a halau called Halau Kalama has asked to take care of it for the use of some of the plants in their hula. So they go up every Sunday. They're going to put a halau up there and build a house.

LG: That is commendable. I'm so happy to hear that.

BK: Oh it's been our salvation. Now the university, in the section that deals with fiber and fabrics, wants to work with wauke from which kapa (tapa) is made. They're planting wauke in a big field up there. That will be away from the garden because everybody would be going up there and swiping it.

LG: This (wauke) is paper mulberry isn't it? That's pretty exciting isn't it because there used to be a lot of it growing around, but not anymore.

BK: Oh yes. Actually it was cultivated. It's one of the few crops other than food crops that they cultivated. Other things they gathered wild.

LG: Where did wauke come from?--- was it brought with the Hawaiians?

BK: Yes, they brought it with them. And then they found here a very

close relative called mamaki from which they also made tapa.

LG: So that [mamaki] was here?

BK: Yes, so they recognized it as a relative and tried to make tapa from it and found it made good tapa --- the only thing is tapa made from wauke can be washed but tapa made from mamaki cannot .

LG: Isn't that interesting, very important feature.

BK: Yes, so they could use it (mamaki) when it needn't be washed.

LG: Can you eat the fruit of the....

BK: Well, it's - I would say it's edible but not palatable.

LG: Ah. Because I was just reading something in which someone said that they rushed to get the mulberry. What is this?

BK: Yes, but remember, all right, there is a cultivated mulberry here. It has a berry about this big and it's black/purple and it's delicious. Delicious eating raw or-- in fact I have a tree out here-- eaten raw or in jams, made into jams or pies. Almost every family used to have the edible mulberry.

LG: And that's different from either of these two?

BK: This is in the same family... Yes, remember they call wauke paper mulberry: whereas this one is grown for the berry and is also the one fed to silkworms-- the leaves fed to the silkworms. With wauke you would -- the birds will eat it-- but you would never grow it for its berry. And the Hawaiians, maybe in times of famine would eat it, but never otherwise.

LG: So how did this cultivated mulberry get here? Was that brought?

BK: We call that Polynesian --- oh you mean the edible one?

LG: The one with the fruit.

BK: Oh that was brought in with some other fruit trees. I can't remember who brought it.

LG: I just wondered, maybe Europeans or someone brought it back.

BK: Yes, sure, just like many of the other things that we have today.

LG: And that's separate and different from either the mamaki or the wauke.

BK: You wouldn't call mamaki a mulberry because, although it's a relative, it isn't that close. So you have the paper mulberry or the edible mulberry. And of course the edible mulberry is post-contact. You see we divide native plants into endemic: grown only here; indigenous, grown here and elsewhere but are distinct; and then Polynesian-introduced -- that's up to 1778 ; and then we have post-contact introductions such as mango, papaya and all of those things which some people call native.

LG: But they came later.

BK: Yes, they came after foreigners came.

LG: So, trying to keep on to this issue of when you were asked to go around and collect the materials for the garden and then you developed the garden at the Lyon Arboretum -- before you spoke about the group that was formed and how you met and things like that.

BK: You mean to make the garden. All right, well then Dr. Sagawa said, "Why don't we have an ethnobotany garden?" So then again we said we were going to create an ethnobotany [garden], had a reporter interview us and asked for volunteers and (laughs) fifty people came. And it shook down when they knew they had to work hard (laughs) to about nine. (We met once a week.)

LG: Fifty people at the beginning? It is hard work.

BK: Yes, as a result of that appeal in the newspaper. And they filled a whole room. I thought later if we had had all fifty instead of taking ten years to develop the garden it would have taken one year. Well, anyway, it shook down to about nine, mostly women and a few men. The first thing we did, we looked around, Dr. Sagawa and I, and we chose this area. And the first thing we did was to dig a lo'i [taro patch]. That took a long time because we were using shovel and pick, whereas, of course, if we'd been real Hawaiians we would have just had the o'o (digging stick).

LG: Is that the digging stick?

BK: Yes. So we get that dug after we marked out the size we thought we could do. Then when we got to the right depth, which was down to subsoil, what we did was what we call puddling. You put a little water in the dug out lo'i and then you walk back and forth and you've changed the consistency of the soil to a clay which can hold water. This is what you do by walking back and forth. For some reason the day we were going to puddle there were only women --actually it shook down to I think two men and seven women-- and I said you just have to walk back and forth, that's what the Hawaiians did. After about fifteen minutes they got bored. And then they said, "Let's form a chorus line." I have a picture of it. They formed a chorus line and danced back and forth. And I said that is not pre-contact Hawaiian. Well they said at least it isn't as boring as just walking around. Then one of them ...

LG: Don't you maybe think that Hawaiians if they were doing that might have done dances or some kind of ...

BK: Well anyway they said, "You think they chanted?"

"Well," I said, "Maybe they chanted."

And they said, "Well, what would they chant?"

And I said, "I've never found a chant." And then I don't know if you know Amelia Bailey, she's the wife of a doctor and she's Hawaiian and she's famous for making leis.

But she said, "I know what they chanted, one puddle, two puddle, three puddle." And we laughed so hard, her taking this off on the "One paddle" that we just all fell down in the mud. (laughter) So they made a little puddling with that chant and by that time we'd puddled enough. And then we planted taro. Then we went to the rest of the garden and began planting other plants. Finally, they gave up. Well, we had established it (the garden) pretty much. In fact we even dug a second lo'i because we wanted to show how water entering one at a level below another one got its water - how they ran the water.

LG: I'll bet, that would be good. So does that still exist up there?

BK: Well, it got overgrown when I wasn't getting enough help but the Kalama Halau have reestablished it and have replanted it.

LG: So you actually have two [lo'i] that you developed there.

BK: And then we planted all the Hawaiian things in there over the years. And it had its ups and down. As long as I could work on it and had people, I had it real neat. If the schools wanted material about ethnobotany or ancient Hawaiian, they would concentrate on that garden. It's looking pretty good again with the Kalama people.

LG: Can I go up there sometime and see that? Is that something that you can just go to the office and go walk up kind of thing.?

BK: Sure, I think they have a guide for it with actual names. Yes, there are labels. I had them do that (put in labels) while I was still up there.

LG: Bea, maybe we should stop. This is a good place to stop. It's almost eleven. Is there anything else that you think of about

Lyon Arboretum that you want to mention.

BK: No. I must say my time there was among my happiest years. I mean not only the people I was working with but we were creating so many things. I was in the midst of developing it to what it is today.

LG: Right, and it was just the beginning, right? It was all the beginning of the way it's grown.

BK: Yes, well, Dr. Sagawa had these dreams and he couldn't do it on his own and I don't know why he thought I could, but of course -- well, I did something. We got wonderful volunteers to do all kinds of things. We really have such a wonderful group. You see we have a board of-- don't know whether it's called directors, trustees or what--a governing board and directors ex-officio. Then each person is responsible either for the newsletter-- you know we have a newsletter--or membership, and one of the most important ones is hospitality. When they have any kind of function they take care of refreshments, decorations and everything. And we have several plans where, you know, they have three guided tours a month. You have to make reservations for that and this is besides the schools. We have several schools come a week during the school year. A certain number of teachers and mothers have to come along and they have these tours. The docents or guides meet every single week. They have a training period before they're allowed to take out a group alone. They meet every week to keep up.

LG: I think they're very good. I went to one when they had the, I think it was the herb fair, and I went around with one of the guide groups and I was just stunned how much information just the guide knows.

BK: I know. Imagine meeting every week to keep up on it. All right. So we have a good core there and that of course is a group of trained....

END OF SIDE A OF TAPE

LG: This is Lila Gardner. I'm interviewing Bea Krauss today. This is January 14th, 1994. The interview will take place in her home.

BK: Have you listened? (to our tape made in our last meeting)

LG: I did. Last week was good. I listened a while and I said okay, this is all right. We're on the track again. I do want to check it from time to time, make sure our batteries are working.

BK: That's better than most of those little ones. I think it's a more substantial tape recorder.

LG: Now Bea, we want to continue with the Lyon Arboretum discussion that we had and as you know we sort of set up an outline for ourselves last week about the volunteer groups. You said you wanted to discuss the volunteer groups, the different groups. And I wrote down things like jam, crafts, hospitality, apprentice and memorial gardens and maybe there were others. So let's kind of review that.

BK: All right. What is the first one?

LG: Well you had mentioned the jam and jellies.

BK: Oh yes, there is a group that periodically make up jams and jellies and preserves. They're a group of about a total of ten and they come up and do all of their jam making up there in the classroom where there are cooking facilities. They're well known throughout the town for the quality, especially their mango chutney --- people like to buy Lyon Arboretum chutney.

LG: Oh the chutney.

BK: Yes, and they also try to get exotic fruits and they've built up quantity recipes.

LG: How do they get their recipes?

BK: Well, I remember I gave them eight different chutney recipes, and they got others, and from those, they created their own. They have people's mango trees listed and people do give them the green mangoes because it's the procurement of fruit that causes a problem. But there are people that tell them when their mangoes are at the right stage for the chutney. Then they make a lilikoi jelly and that's usually made from lilikoi sent by my nephew from our old farm at Haiku, Maui.

LG: What does lilikoi look like? Could you describe that?

BK: A lilikoi is --- I want to say water lemon, but it isn't water lemon.

LG: Is it a round fruit?

BK: What is the English name for lilikoi?

LG: Oh, passion fruit.

BK: Yes, passion fruit.

LG: But I still don't quite have a picture in my mind of what they look like.

BK: Well, they're about this big and the wild one is purple but they don't use the wild one. What they use is a cultivated one which has a yellow rind.

LG: Oh, okay. Is the outside green?

BK: Yellow.

LG: Outside is yellow.

BK: Yes, and then the lilikoi jelly is very wonderful. And they make

a guava jam and a guava jelly, again asking people to send fruit. Those grow wild, of course, and they have volunteers who pick them out in the wild. Then they have combinations like pineapple and papaya marmalade, and I think it's called jacoby [jaboticoba], it's a little fruit that grows on the Lyon Arboretum grounds. It's a little black berry about the size of a big, black cherry and it grows right off of the stem. It's rather exotic. They like to get exotic fruits whenever they can. And they have their own special labels with a kukui fruit logo which we use on everything.

LG: It's a nice label. I bought a marmalade, a ginger marmalade.

BK: Oh yes, that's something exotic.

LG: And, of course, guava, I always think their guava is quite good.

BK: I do too. Of course everything is sterilized. They do not add wax, you know, like most home cooking. They don't wax because everything is in sterilized jars. And the jams and jellies and preserves are a popular item in the gift store. Sometimes people who give gifts, like at a convention or something, will make a special order. All right, I think that takes care of jams and jellies. Oh, they also make a red pepper jelly that's famous. That's to be eaten with meats. That's very good.

LG: When did they develop that kitchen? Was that always there with the house?

BK: Oh no, formerly a lanai, that classroom, is actually an addition, after we started having classes there. There was just a little balcony there. We enlarged it into a classroom. And we very soon, once we started, this is back in.... When did I say I went up there, eighty-six [1986]? No.

LG: Sixty-eight [1968].

BK: Seventy-four, wait '68, '69, '70, '71, '72 '73, '74. In '74 when we started classes, you see one of reasons for starting the

association--I think I said that before--was so we could give classes. So we had a few lecture classes to start with but very soon we began to have cooking classes. The installation of a mirror so that people can see in back like they do in cooking classrooms, was maybe fifteen years ago when we did all that installation of stoves and ovens and cooking tops. And of course we have so many classes of cooking where the demonstration--you know we have that series of.... Well now wait, that's not a volunteer...

LG: Okay, that's a different story.

BK: All right, so they used the facility, in other words the jam and jelly people used the facilities that we had installed to give our classes.

LG: And then you mentioned also crafts. That's a volunteer thing.

BK: Oh Yes, a group of people started doing crafts and that is primarily-- she should get a lot of credit-- Laura Miyashiro. One of the old cottages that belonged to the employees of the Sugar Experiment Station was turned into a craft shop, craft house or craft cottage. They wanted a name so they asked me and I said Hui Hana. That means a working group. So that's their name and it's on the outside. It's a group that meets once a week. All their craft work is associated in some way with plants. That's one of the stipulations. Well, they make all kinds of attractive things. They use seeds, plant seeds or tree and bush seeds. They make necklaces or leis out of them. They use tapa for making address books, frames, picture frames. They make nice cases with lei needles, which are made out of piano wire. These simulate the old Hawaiian needle which was, of course, made out of a piece of bamboo, or the midrib of a coconut leaflet. And you can't usually buy these wire needles--so that's a big thing. They make oshibana cards, those are with the pressed flowers. They make all kinds of note cards and greeting cards.

LG: So these lei needles, they sell them up at the bookstore?

BK: They got little tubes that they cover with tapa with a little stopper and there are usually two needles, a long one and a short one. And of course the jams are sold in the shop. Also they carry a wide range of books on plants and gardens, and also cookbooks. And they also take, on assignment, certain products. For instance, there was a pottery group that met in the basement of the first cottage, and we carried their pottery products.

LG: But the craft group has the books, the little shop.

BK: No, no. I'm getting ahead of myself. The products of the craft group, the Hui Hana group, are sold in our shop. That should be part of the story when you describe what happens at the Lyon Arboretum-- the shop would go in there rather than here. But you could say that all the products of the craft group, Hui Hana, are sold in the shop. They also have a lot of products when the Lyon Arboretum has its big August sale, and its Christmas sale in early December. This craft group also make leis, what they call haku leis, on order, and they get lots of orders. They'll get an order for a bride and all of her attendants; graduation; and so forth. They make beautiful leis, and they are reasonable. Those are made on order and they always have some on sale at the craft sales. They also-- this craft group, give demonstrations at Liberty House and Liberty House branches only. That's the craft group. Actually there are two groups I think that meet. Oh they also do--- well they make all kinds of greeting cards. They make the oshibana and stenciled ones.

LG: It's very nice work.

BK: Yes it is. I think that takes care of the craft group. Now what's another one?

LG: Let's see, the next one on the list is hospitality.

BK: All right, hospitality provide refreshments and flower arrangements for any function that the Lyon Arboretum puts on.

Now the Lyon Arboretum also offers package arrangements, such as a tour plus light refreshments, or a tour plus a luncheon. These are package deals that you pay a certain sum for. They also serve lunches for special conferences up there, for workshops that are put on, either by outside organizations, or by university departments.

LG: So the hospitality committee would handle the food for all of those events.

BK: And those lunches are famous because they make them ethnic and provide a lot of fruits. Then they are also in charge of decorating the place with flowers. Any reception, any function at the Lyon Arboretum, that the Lyon Arboretum puts on itself where refreshments would be involved, simple or elaborate, would be taken care of by the hospitality committee. And these are all volunteers.

LG: That's pretty amazing, that part, when you think about it because some of those gatherings involve a lot of work. About how many do they have in the hospitality group, do you know?

BK: I would say about ten. And of course with bigger functions, they'll call others. What they do is try to have the membership state what committees they'd like to work with, the core that works at everything, and then there are others that can be called upon.

LG: And you mentioned the "apprentice system".

BK: Oh, that's not a volunteer. That's a function of the university.

LG: So that's different, not a volunteer. Are there any other volunteer...

BK: Oh, the volunteer group in the gift shop-- gift and book shop. People sign up for a half day and they like them to come weekly. In other words, people will come every Monday morning, or every Monday afternoon, and so forth, and sometimes volunteers

will only come once a month, but we like to have them sign up for a regular time. This is the department where we're lacking enough volunteers.

LG: For the bookstore.

BK: We call it books and gifts shop. And that, by the way, is the old garage from the time that this was a house.

LG: Oh okay, I didn't know that.

BK: An attached garage. Oh, and then the volunteer group, the volunteers who work in the garden, on the grounds; those are people that come fairly regularly, or irregularly, to work in weeding, planting, pruning. The first Saturday of every month is a specific day for volunteers to work with Ray Baker, who is in charge of the grounds. That's either half a day or a whole day. Then there are the volunteers in the greenhouse. That's separate from these. This is on the grounds. That first one should be volunteers on the grounds. That means outside. Then there are the volunteers in the greenhouse, who plant seeds, clean seeds, and work in the greenhouse. They pot and take care of plants in the greenhouse. That's a small group, at the most four probably, four to five. If you include the ones for grounds, and the ones that come the first Saturday of every month, plus the ones that come occasionally, there might be a total of ten to fifteen. All right then, there is the...

LG: Is that a pretty stable number? Is that kind of what it's been though the years?

BK: Yes, over the years.

LG: Hasn't changed much. Okay.

BK: Now there was one more volunteer group. There have been, off and on, volunteers in the library. And that's one or two. That's to give out books, take care of periodicals, and things like that. That's down in cottage one, "A" I mean. Then we have a

volunteer in the herbarium. That's, you know, the specimens of dried plants. We have one volunteer in that. Then we have one volunteer who works with the staff member who is doing the meristem culture work. That's, you know, where they reproduce plants from single cells. These are the endangered species. We have one volunteer there and that's once a week too. Most volunteers are once a week except those that come occasionally. But we couldn't, absolutely couldn't, get along if we didn't have our volunteers. You can see because we have such a small paid staff. See: there's only now a director that we have full time. At one time it was only half time. We have Bob Hirano, the director's assistant; Ray Baker who is head of the grounds; we have this meristem culture person; and we have, I think, a single groundsman. The others are student help. Now this would be a part of the organization, of what I've told you already. The student help is used both in.... (BK makes call to arboretum, to Ranjit.) They call them interns instead of apprentice and they get two thousand dollars from the Lyon Arboretum Association. They had this girl from Canada; this year one from New York and one from Germany during the summer. That was the first set, and now they have a girl from Scotland. She's not getting anything because they just had the summer interns. So that's, what did I say, intern...

LG: So it's the intern program and not the apprentice. But as we're talking it works like an apprentice system, right?

BK: Yes, it is an apprentice system. They train them in everything that would be available in an arboretum or botanical garden. That work is, of course, practicum; the interns also attend my lectures, which is on ethnobotany, as part of their training. That's still part of the structure of Lyon Arboretum. I told you that it was set up to give education, research and public service. I think we've covered all those phases didn't we, in a former interview?

LG: And we did mention last time, we mentioned memorial gardens and trees.

BK: Anyone can select a tree already growing there or have a tree planted in honor of someone. We have had, maybe over the years since this has been started--and actually there's a flier about this-- about twenty trees that have been--which people have asked to be made into--memorials. The only charge is to put a plaque. If it's a bronze plaque, it's more expensive than just, you know, a wooden one.

LG: I think it's plastic or vinyl, or something like that.

BK: Yes, vinyl. Because we have beautiful trees there and they're already there, you can imagine that that is a first choice, but we have had a few planted in honor of people, but mostly trees already there are chosen. These are both for living people and for members of families or friends who have died.

LG: How long has this program been in effect? This part to the Lyon?

BK: Maybe fifteen or twenty years-- fifteen years I would think. And then we have memorial gardens. There's a patio right next to the main building that's a memorial to a former volunteer, full time volunteer; she was a greenhouse volunteer, Mrs. Stemmerman, who was the wife of Dr. Stemmerman. And then there's the Japanese garden, a memorial for Marian Okimoto Mapes.

LG: How did this get established? Is this by the families?

BK: You know how when somebody dies money donations are made and someone suggested.... Let's see I think Mrs. Stemmerman's was the first one. She was a volunteer and everybody loved her so much that they wanted to give money. And someone said, because she was so interested in plants,why not do something with plants, and, at that time, we thought a patio would be nicer. That patio was built by the Manoa Lions' Club. The Lions' Club do this type of public service all the time. Manoa Lions' have helped us out several times. The members of the Lions' Club do the actual work. We paid for the materials, because it's

all paved, and benches put in. We paid for the material and they did all the work. Once that was set up, when other people made contribution we said to them: would you like it just to go into a general fund or a special fund or have a.... Once we had this precedent, then the second one was Marian Okimoto Mapes, that Japanese garden that goes down the back of the building. Then the next big one, of course, was Hongyip
Young's Chinese garden, the gazebo and the lily pond.

LG: So that whole thing was a family contribution. I find that just really beautiful.

BK: Oh, I do, and the woman that stays here--I'm sort of taking care of her until she finds another job and she does a little work around the house--walks up there every morning and sits there and meditates.

LG: I was thinking that's a wonderful place to meditate.

BK: And people bring their lunches there and we like that too. Oh I know what the first one was. You know the patio in front of the building? As you go in the main entrance, that patio. I don't know if I said part of the function, or setup of the Lyon Arboretum, was that the Garden Club of Hawaii has their office there. And the first memorial was that patio that was built in memory of one of their members. That's the first one and then Mrs. Stemmerman was the second. That sort of set a precedent. The Youngs thought of this right away. Of course being Chinese, they wanted something Chinese. So there's that. I forget what the woman's name is [the garden club memorial]. There's a bronze plaque there on a stone that gives her name. That was number one, then Mrs. Stemmerman's and then the Mapes and then the Youngs.

LG: The upper garden, the one that has the lotus pond?

BK: Yes, and the little shelter there are part of the general garden. That's all, plus some of the trees that were planted. I know part of it (the Young garden) is to have Chinese herbs. I don't

know if that's been planted yet.

LG: So like the design for these contributions, would that come from the family? Or would that come from the Lyon Arboretum?

BK: Well, people would say what they wanted and then we would get the designer. We didn't have a professional person for Mrs. Stemmerman's patio. There was a woman within the Garden Club who had some plan for a design -- what she said she wanted -- a patio where people could sit with some benches. So we just got a contractor to do it and they paid for it. Let's see, as for the Stemmerman memorial, I think there was somebody again within the organization that offered some design. It wasn't elaborate. But the Mapes Japanese garden and the Young's Chinese memorial were done by a professional. And that is a young man who lives in one of the cottages and is a professional landscape architect who studied in Japan and China. He was paid to make up the design and supervise the installation and is maintaining it.

LG: That's very fortunate.

BK: And we always have a dedication ceremony when one of these projects is completed. Then this is where the hospitality committee would come in, unless the people who gave the money for the project wanted their own caterers as was the case with the Youngs. For the Mapes' one and the Stemmerman's we used our hospitality committee: it was much more simple.

LG: So I wanted to go back to one other thing about the Lyon Arboretum, unless you have something else. Do you have anything else?

BK: No, we've done the functions, the classes. We've done all the classes, haven't we; and the workshops and things like that, and the volunteer group and these other programs, like memorial gardens and memorial trees, and the apprentice system and the workdays? We call the last Saturday, volunteer workday, or Ray

Baker's garden work day. Oh, then we did take up tours didn't we, I think.

LG: We haven't talked much about the tours I don't think. So we could elaborate on that subject.

BK: Now at one time the gardens were not open to the public except for guided tours. Of course that includes thousands of school children a year. At the beginning of the school year, schools call in for reservations. Oh, one of the main volunteer groups, of course, are the docents.

LG: We didn't talk about that. That's good. That's a lot. Quite a few details.

BK: Oh yes. They are very well trained. These are all volunteers and they undergo a long apprenticeship of training because they have to learn the names of plants; they meet every week. Even the trained ones meet once a week to keep up. We have a wonderful core of docents. All of these docents are used for the school children's tours, as well as for tours for specific organizations like Senior Citizens. We even do deaf and blind children. That becomes a "feel thing", a texture thing-- texture and shape of course. Ray even learned the sign language so he could talk to the deaf kids. For the blind ones, it's a texture thing. They train several people just to do those kids. They didn't realize how many plants there were until they were trained. And their (the blind children) favorite is to hold the seeds of impatiens because if you hold them in your hand, like this, the warmth makes them pop. And they like that feel. In fact, they always take them to those plants the last thing because pretty soon, after a while, the supply is gone. They can hardly drag them away until the supply has been exhausted. And so you also have some docents for specialized tours, like ethnobotany tours. So we have school kids; we have for organizations, and then we have tours for the general public. Those are all by appointment. The children's groups, and the special ones are all by appointment. Now they have three guided tours each month-- as I said already, the grounds are now open

to everyone-- from nine to three, six days a week; at one time they were restricted.

LG: What is the time-frame of the period in which they weren't open? Can you just give me the history of that.

BK: Oh, up to, I think, ten years ago. It was because we had so many valuable plants. Then we realized we're "government", and we can't do that. We allow people to roam through it and to have picnics there; not large groups however. Well, no, we shouldn't say that, because school kids bring their lunches. But individuals can come there and we just say: no debris. And do you notice how clean the gardens are?

LG: Seems that nobody bothers in terms of leaving any mess or anything. That's great.

BK: No, there's very little debris: I think it's remarkable. People have a respect. All right, so now because it wasn't open to the public we had these guided tours and there are three guided tours a month and people have to register for these because we have to know how many docents to have. So the docents take care of the school kids and organized groups, plus these three visiting days. So that's an important group of volunteers.

LG: The tours per se are connected to the docents. That program is connected to docents.

BK: Yes. Well, I should say the docents are connected with the program, tours.

LG: So the docents fall under the volunteers.

BK: Yes, this program is "tours", since volunteers are associated with different projects or programs. I mean you have all these programs which are carried out by volunteers. Now among the instructors of our classes, there are also volunteers, but most of the instructors are paid an honorarium out of the fees collected for the classes.

LG: Has that always been the case? From the beginning, when they started the classes? The instructors were paid?

BK: Except if you're a member of the staff, then you volunteer. And some of the other instructors, you know, gave their services free, but otherwise they've been paid.

LG: Now when you came up there, when you started work, did I pick up on this, that you said you were not on salary, you came as a volunteer? Can you discuss that?

BK: At the Pineapple Research Institute I worked forty-two years till I was sixty-five, the mandatory age for retirement. Then the university asked me to come over to teach, where I taught for six years. Now if you teach at the university you had to sign a loyalty oath. That was a demand of the state. Of course that's now been lifted. And I wouldn't sign it.

LG: What is the circumstance for that, can you discuss that?

BK: It's just on principle. I...

LG: I mean I just want to go back over that cause I don't think that's - we haven't discussed that.

BK: I believe you live your loyalty to your country. That you don't indicate or show your loyalty by signing a paper. And a person that was disloyal could sign a paper if he did it. So it was just principle.

LG: And what year was this? What would be the time frame for this?

BK: '68.

LG: '68. So you came on board and said you wouldn't sign.

BK: "I'm sorry" Dr. Kefford said, "I'm sorry we can't pay."

And I said,"I don't care. I'd like to teach and keep on the work. I got paid during my career and I think after you finish your career you should be involved in volunteer work." This is my feeling about everybody, that when they retire, they've earned either good or poor salary but they've worked for pay. That after that retirement, your retirement ...

END OF INTERVIEW

GLOSSARY

haku	a type of lei, lit. to arrange, compose
halau	hula school, lit. long house for hula instruction
hana	work
hui	club or association
huli	taro top
kapa	tapa, made from wauke or mamaki bark
kukui	candlenut tree
lauhala	pandanus leaf, used in plaiting
lilikoi	passion fruit
lo'i	irrigated terrace for taro
mamaki	small tree whose bark yielded a kind of kapa
'o'o	digging stick
oshibana	pressed, preserved flowers
tapa	kapa
wauke	paper mulberry, bark used to make kapa

ORAL HISTORY INTERVIEW II

with

Beatrice Krauss (BK)

January 14 and February 11, 1994

Manoa, Oahu

By: Lila Gardner (LG)

Tape No. 2

SUMMARY

Beatrice Krauss was born in Honolulu August 4, 1903. Her parents were Frederick George Krauss and Elizabeth Hilmer Krauss, first generation Americans of German descent. Her parents moved to Hawaii from San Francisco in 1901 and 1902 respectively. Her family eventually settled on Parker Place in the College Hills tract where Miss Krauss still resides today.

Miss Krauss was educated at Punahou School and on Maui, returning to graduate with her class from Punahou. She continued at the University of Hawaii, receiving her degree and going to work for the Pineapple Research Institute where she remained for forty-two years. After her years at the Pineapple Research Institute she taught ethnobotany at the University of Hawaii for six years and then, at the invitation of the director, moved to the Lyon Arboretum where she worked as a full time volunteer from 1974 until 1992. She is still associated with the Botany Department at the university and the arboretum.

In this interview Miss Krauss discusses the invitation to teach ethnobotany at University of Hawaii/Manoa after her retirement from the Pineapple Research Institute in 1968. She discusses how she developed her curriculum, her teaching philosophy and the growth of the program over the six years she taught at the university before moving to the Lyon Arboretum. She also talks about career expectations as a child, student and college graduate, and the impact of family influence on that choice. She goes on to discuss the research activities in which she was involved at the Pineapple Research Institute and the general work climate for women during the span of her career there.

LG: Let's go back to talking about the Loyalty Oath and also this period, that which you considered yourself semi-retired. You had retired from that one profession. Really, you started another.

BK: Yes, starting another career.

LG: Let's discuss that a little bit more in detail. So that was in '68. [B.K. retired in 1968 from the Pineapple Research Institute and went to the University of Hawaii at Manoa.]

BK: Yes, and I was about ready to retire from the Pineapple Research Institute when Dr. Kefford who was chairman of the Botany Department -- you see we were located right next to the university, there was a close association -- he came down and said the man, Al Chuck, who had been teaching ethnobotany was leaving and would I take his place. And I said, " Oh I'm looking forward to my retirement. First thing of all, I want to travel and then look around for volunteer work."

And he says, "Well think about it. You have all summer." This was in June and I would start teaching in September. "You think about it and let me know."

And I said I would, "But I doubt whether I'll take it." Soon as he left the office (laughing) I got the dictionary to see what ethnobotany was. It's a new science.

LG: Sure and at that time it was really new, huh?

BK: So I looked up what it was and so I thought about it. Oh I asked him, "Why do you choose me?"

He says, "First of all you're retiring from this job and you're still young at sixty-five and you lived here all your life, that provides the Hawaiian part of it, and your major was botany and is a part of Ethnobotany.

And I said, "No I really want now that I've retired, I want to travel a little and then think about volunteer work."

And he said, "Well anyway, think about it. You have three months."

So as I said, I looked it up and it sounded interesting and I thought, oh well, it's an entirely new career. I think, I know nothing about Ethnobotany as such. So what I did, I called him back and I said I'd like to try and so I spent all summer studying Ethnobotany. First of all the concept of Ethnobotany which of course is --- actually it's a bastard word made up from Ethnology, which is the study of native people, and botany, the study of plants, and if you put this together then you have the interrelation of native people and their plants. Or another concept is the reliance of native people on plants. And of course I realized right away that --- and of course this in a framework before native people have contact with any of the Western world. And I realized as I was reading, that the dependence of Hawaiians was especially great on plants because they had no metal and knew of no ceramic material. There was ceramic material but they did not realize it. They were not pottery workers. So the more I read, the more interested I was and so I had to prepare myself, do a lot of reading, learn a lot of Hawaiian names of plants and so forth during those three months. I really studied. Of course I wasn't working at PRI so I could spend all day. And I thought one way of doing it would be to prepare syllabuses. And this was a one semester course and I realized through timing -- it was an hour three times a week -- that the way I would handle it is handle one plant each lesson. Describe the plant, how the Hawaiians grew it, the cultivation, preparation and uses and any legends maybe that were connected with that plant. I decided to handle it that way and I had enough...

LG: Sounds like a good approach.

BK: Well you know, you figure out how you're going to handle this

first...

LG: Kind of make it up yourself, Yes.

BK: All right, I decided to handle it that way and of course I had to find out all the plants and these would be the endemic plants, the plants that grow only in Hawaii. An example of that is Koa. the tree Koa. The indigenous plants, plants which grow here and in some other place but have grown in these areas so long they have taken on their own uniqueness. Now those two plants are what the pure botanists call native plants. But I decided that the Ethnobotanist would add one other type of plant and that would be the Polynesian-introduced plants. In other words when the Polynesians came from the Marquesas here, they brought plants from there and we call those Polynesian-introduced. So I broadened the category, native plants, to include that. So then I had to get all those plants and then I decided as a handout I would prepare a syllabus with an illustration of that plant, plus a common name, native name, and the scientific name, a description of the plant, a botanical description, cultivation, uses and any mythology. So weekends I would go down to my office, and I had an office in St. John Building, and prepare these syllabuses, three for the coming week. And then they were mimeographed and I gave these as handouts. Eventually when the course was over, these were prepared and actually sold later after my course was over, sold as a unit and people have those. Students could have collected them. I don't know how many --- students still come up to me and say they collected them and have them. Others, I'm sure, just threw them away. So over the semester there were forty of these syllabuses. In other words I took up forty plants. Most of them were what I call native plants. A few were introduced plants after the coming of Western people, just for interest purposes. Now I did this over six years. At first I had a small class but afterward it was considered a cinch course because I didn't give any finals and what I asked them to do instead, to do a project, write a paper on some phase of Ethnobotany, on some particular plant or produce an artifact. And at the end those people who had prepared artifacts of --- some of them did

little--- like one --- three of the students in one class, one year, made those gourd masks and did a hula with that mask. The leader of the three came to me and he said, "Miss Krauss I have to tell you that the hula, one of the hulas is a naughty hula. You think it's all right?"

And I said, "Sure, this is part of education." Of course it was in Hawaiian and only those people who knew Hawaiian knew the naughtiness of it. And then three women one year made Hawaiian puppets, the Hawaiians had puppets. They made them, and they put on a performance. And then a student said he wanted to make these, what we call, the stamping pipes, those are the bamboo that they strike. Depending on the diameter of the bamboo and the length of bamboo is a different note. Well he said he wanted to make one. And I said, "That's not big enough, just to make one of these is not a project in my mind."

Well, he said, "Let me think about it. What if I got a group together and each of us made a different note and then put on a performance?"

I said, "Yes, sure." I didn't mind if people got together. So one day I came back to my office and in the hallway outside were all these students testing their things, obstructing traffic of course...

LG: And making noise too, right?

BK: Adding noise and they were testing it and putting a note on it. And it happened that a music student came past and said, "What in the heck are you doing?" And they told him and he said, "May I see what you've put the note on that?" And it was all wrong. They just guessed. I think they were making it up. "I'll help you guys out." It happened to be all men. And he sat there with them and gave them the true notes. So for the --- as the end of submitting this as a project, they had to put on a concert. And they did several pieces rather, just thrilled the group.

LG: I think that's a wonderful idea actually.

BK: I think it was wonderful...

LG: It grew, it grew from that one...

BK: Yes from that one...

LG: Into the correct notes.

BK: Just as one student that was going to make a gourd mask decided to bring in two of his friends and put on this hula. And one decided to make kulolo which is a pudding that the Hawaiians make out of taro and coconut and made enough...

LG: Kulolo?

BK: Kulolo, k-u-l-o-lo. And she made enough for the class and brought it to class. And this is over a period of six years. At the same time my last year there I also gave a class out at Radford for teachers after school, on ethnobotany, for a semester. For teachers, so that they could teach a class in ethnobotany.

LG: Where is Radford?

BK: It's out toward, well, it's in the direction of Wahiawa but it's not as far as Wahiawa. I would say beyond Pearl City. [Radford High School is on Salt Lake Boulevard, near Pearl Harbor.] I had to go out there one day a week for a semester. And I think they got credit for that too.

LG: So in a way you brought the university out.

BK: Yes, so between the class --- oh I started with one class, small enough to be housed in St. John Hall in the basement, that's 011, and that capacity there is a hundred and it wasn't filled first semester. By the time I ended at the end of six years, I had to have five successive classes to accommodate, no, Yes five, because let's see I had fifty --- when I started I

had maybe twenty-five students the first semester. By the time I ended, with Radford, I had five hundred students. And I could have done the four hundred fifty down in Varsity, you know the big classes they gave in Varsity. I refused to talk to a mob so I limited to St. John 11 and five successive classes, one right after the other, that's right through my lunch hour too, because I did not believe in that mass teaching. And I even had students bringing their babies to class.

LG: Bringing their babies?

BK: Babies.

LG: So this number that you were teaching was all doing volunteer. You were a volunteer.

BK: Yes, plus I did research. And the research work was on --- research I brought from the Pineapple Research Institute which I hadn't finished and that was the importance of the chemical boron, b-o-r-o-n, in the nutrition of the pineapple plants. So I did greenhouse work with that.

LG: So did you publish material on that. You must have published something on that .

BK: I never finished it.

LG: But you must have wanted to.

BK: I have a manuscript which would have to be brought up to date. Maybe I'll find it in all these boxes of things and finish it up. (laughing)

LG: So all the time that you were teaching five classes toward the end and you were also doing this work on the boron. That's pretty intensive, isn't it?

BK: Well you see, the first year I got all of my syllabuses finished, my first semester. You see Ethnobotany at that time was just a

one semester course and it consisted of one hour three times a week. In that first year I got all my syllabuses, I had forty - two syllabuses finished, so after that I would continue to do research but I had my fundamental syllabuses.

LG: So you didn't have to do a lot of work on the teaching preparation side cause you had that together, but you still had those five classes which is pretty intense in dealing with all those students.

BK: Yes, because I had --- well, they'd have to come and tell me what their project was going to be. We had to give a test midterm, a midterm test and I forgot what I did. Maybe had a conference with them instead for their project. I announced that there'd be no exams. I didn't believe in exams. (laughing) Of course, I got called on the carpet constantly for being an unorthodox teacher. And so I announced to the head of the department that instead of the midterm, I was going to have a conference on their project which would take the place of a final exam. And I gave everybody either "A" or "B", and that was unorthodox. And so the word got around that it was a cinch course, so after that is when the attendance, the registration increased up to four hundred and fifty. Or, at least --- I couldn't have had fifty teachers out at --- I think I had twenty-five or thirty teachers out at Radford. So the difference between --- because it went up to five hundred or five fifty, I forget what.

LG: So at Radford you were teaching teachers, training teachers?

BK: Yes, training teachers. I should say giving a course in Ethnobotany to teachers at Radford. Now at Lyon Arboretum of course I went out to the schools a lot too. Teaching students ethnobotany and also giving seminars for teachers. But that was after I went up to the Lyon Arboretum.

LG: Do you want to elaborate on any particular things you remember about being called on the carpet for being unorthodox. Just something that you maybe haven't talked about.

BK: Well, I think one time you were going to -- maybe we've covered it already -- women employment at that time.

LG: We're going to go back over that because remember that's one of the tapes that...

BK: One thing is I remember, the staff had a meeting every Friday, in the botany department. Now I actually worked for two departments there. I taught under the College of Arts and Sciences, botany was under the College of Arts and Sciences and I taught under the department of botany, but I did my research work under the department of Physiology which was in the College of Applied Science. So I was teaching in two colleges, teaching and doing research under two departments, two colleges and two departments.

LG: Okay. Same university, two colleges. And you didn't get two different paychecks.

BK: No I didn't. In both I was a volunteer. But it widened my association with faculty and administration too, which I liked.

LG: I think that would be more interesting.

BK: Also, now let's see, the department of botany had a staff meeting every Friday. I remember distinctly there were only two women on the faculty in this department. This was during a period where gender was being --- the recognition of women faculty was being stressed, and so Dr. Baker and myself were the two women in botany and one Friday morning she said, "Now I can't come to staff meeting. Be sure you're there to represent the female contingent."

And I said, "Okay, I can go." And I tried to go to meetings because sometimes they were awful boring and tiresome, I thought it was still important. So I walk into the office. The meetings were held in the office of the chairman. The men were already seated because I was a little late.

They all stood up and said, "Hooray, we have our female representation so we can proceed." (laughing) It was neat, because I told you about what happened at the Pineapple Research.

LG: We're going to go back to that. I don't want to get too much...

BK: That was a time when women were being very much discriminated against. This was a case where...

LG: The opposite.

BK: Well, because it was being emphasized you know, that this discrimination...

LG: I'm going to guess this must be 1970's or something. Probably. When things started turning around. Is that right?

BK: And they knew that it was important to have female representation. This was a demonstration of that (laughing).

LG: Cheers. Bea, it's eleven. I think we should just stop at this point. How does that sound?

BK: All right.

Side A Continued, February 11, 1994

LG: We're going to be discussing the issues of the world of work for Bea. Let me just kind of go down some of the questions. Let's back up. Did you have anything else about the Lyon Arboretum. Were there any other points that we didn't cover?

BK: I think I told you all their functions and what they've accomplished so far.

LG: I wanted to just throw that out if you've thought of anything else.

BK: Well, I have the last newsletter and there's several new things they're into that I'll let you have that you can pick up.

LG: I got the newsletter too, and it's odd because this morning I was reading it and I thought I should bring this over and we should discuss it on tape.

BK: Yes, well that director's report there. What they're planning to do to restore the native planting I think, as he says, it's a long, ongoing process but it's important that it's started. That's one of things they're working on. Interns, all the different volunteer groups, I think I told you about.

LG: Well then let's move on. We're going to back up to an area we did cover once before but as you know that tape didn't work too well. So we're going to discuss your expectations for work when you were growing up. That's the first question. How old were you when you began to develop career plans and what were your career plans? That's the first question.

BK: Let's see what was the first part of that question?

LG: The first part of the questions was to discuss your expectations. Like as a young girl, you know, what were your expectations for the world of work?

BK: I guess I went through all the different choices of careers as every child does. I think probably being a teacher entered my mind, being a nurse entered my mind, which enters everybody's mind. But growing up with my father who was in science, I began, certainly before I got --- while I was still in high school I thought I would go into science. And then of course when I registered at the university, that would have been in 1922, the fall of 1922, I was --- it was definite in my mind that I wanted to be a, not a teacher of science, but a research person in science. And I don't think any other field than botany entered my mind because of both my father's and mother's love of plants, and having grown up with plants and on a farm with

plants and all that. Zoology or chemistry did not enter my mind. I think that was very definite, it would be in botany. But what field of botany I wasn't --- actually at that time I think I wanted to go into agriculture because that's what I registered in. It wasn't really botany, it was agriculture. But agriculture because it was concerned with plants too. Having grown up on the farm and loved it and knowing we had the land --- actually I could have gone back to the land and run it without going to the university, but of course our family was very...

LG: This is your farm.

BK: Yes, that I had grown up on as a child, the homestead. I think I had that in mind that I would like to go back and farm it. And as I say I could have gone back to farm because I'd had all the practical experience, but in our family there was no question you went to college. So I go to college and I know I'm going to have four years of college so why not take up agriculture and get some more technical and scientific side of it. So I --- they did have a course in agriculture. I don't know if they have it anymore. So I registered for that. And the classes for that were very specific. I could take only a few electives, very few electives.

LG: So it was sort ofall laid out for you.

BK: Laid out. And lot's of science and then the practical aspects of agriculture. It was a very broad term in that it took up animal husbandry, and growing of crops and general farm management. So, well, you don't want to go into what I took up.

LG: I want to go back a minute. You said that when you went in 1922 that you saw, you considered being a research person in science...

BK: No, I should eliminate that. No that should be erased.

LG: I wanted to get on with that because I wasn't sure how you came to that conclusion. So you didn't really...

BK: I went in because I was supposed to go to college and looking over what I could take of interest, it would be in agriculture and as I said there was a curriculum specific for agriculture and I took that up. And then during my four years there, I decided that instead of going back to the farm I would like to do research and I would like to --- Yes, it was during my college career that I wanted to go into research and that would be in the field of botany. So actually some of the courses I took were wasted. They weren't, but as far as a career in research in botany.... Then, of course, in botany there are several fields; there's taxonomy, and pathology, and microbiology. What else is there, and physiology, and that's the one I chose. And so I took a lot more chemistry and physics than I would have just taking plain agriculture. But I got all my agricultural courses too which I shouldn't say were wasted in those fields, things would come up that would be of value in my....

LG: So wasn't it kind of unusual for you to be in chemistry being a woman? Were there very many?

BK: There were a few and those classmates went into chemistry as a career. In the straight agriculture courses I was the only woman, but in chemistry and physics the women were certainly in the minority.

LG: So moving on, when you finished your degree and came out, can you talk about your selections?

BK: All right. I had the offer of three jobs. It wasn't what it is today. It wasn't that competitive. The first was at the Honolulu Dairymen's as a bacteriologist in their testing, in their control laboratory. I had had bacteriology and enough chemistry and everything to qualify, all right. The second job was at the Experiment Station of the Hawaiian Sugar Planters Association, called HSPA. And the third was at the Pineapple Research Institute.

LG: HSPA was on Keeaumoku?

BK: Yes then. And in there, I would have been in their botany department. And at the Pineapple --- I guess they (HSPA) had a physiology department and the Pineapple had, so I would have gone into the physiology department in either one of those. The Dairymen's offered me $125 and the University and HSPA offered me each $100. I considered all of them but only seriously the Pineapple one, primarily because it was so close to home. That is not primarily, that was one of the reasons. Probably primarily because Dr. A. L. Dean was president of the University of Hawaii and part-time head of the Pineapple Research Institute. And he was president of the university at that time and since they were just starting the Pineapple experiment they had him be director, acting director. I don't know if you know about the famous Heuer case at the university.

LG: Not really, let's talk about it. Expand upon that.

BK: All right. The Heuer case was --- she was Minna Maria Heuer, Frau Heuer was a teacher, taught German at the University, and when the First World War broke out they made teachers sign a loyalty oath and she refused to because she was a German citizen and there was immediate cry and this great wave of patriotism to fire her. And Dr. Dean stood up for her. This is what they call the Heuer case and you know there's a lot of material about it. And I think --- and there was a lot of talk against Dr. Dean, although Dr. Dean was very much respected here. He came down here as a chemist and he was one of the ones that originated the use of <u>chaulmoogra</u> oil for leprosy. While he was director he was still doing research work here. But...

LG: How do you spell that word, <u>chaulmoogra</u>?

BK: C-h-a-u-m-o...

LG: g-r-a?

BK: Something like that. It would be I think in the .... They use sulfa

drugs now but this was a thing that was used.

LG: In those days.

BK: Yes. So I'm just saying that because of how highly he was respected and so forth. I think he came from Yale or Harvard. And I think he was the second president, Yes he was the second, Gilmore was the first president of the university and then Dean. And that sort of rankled, maybe rankled isn't the right word for it, but it bothered him that they had treated her this way and the way they treated him. So soon after that he became full time director of the Pineapple Research. And of course here's a personal friend and we thought a great deal and that certainly must have influenced me going to the Pineapple. And the proximity...

LG: Family personal friend?

BK: Yes. And a new research institution and a lot of --- and I got to work under a marvelous man there. He was Greek. His name was Christo Plutarch Sideris (laughing).

LG: How's the last name spelled?

BK: S-i-d-e-r-i-s. We always said Sideris (long i, emphasis on second syllable) but in Greek it's Sideris (short i, emphasis on first syllable). I think we had gotten to know him by then and that also had some influence. So there I stayed for forty-two years, under I don't know how many directors and how many different department heads. And I went into the Department of Plant Physiology.

LG: Can you talk about this issue of discrimination in work. You were going to talk about that sometime. And how it's changed...

BK: Yes, all right. The position was opened for plant physiologist and I went in. I had my B.S. and I went in at the lowest scientific level which was assistant plant physiologist. And I'm sure at no time --- I got to know Dr. Sideris. They became

very good family friends. He never mentioned it, nor did I ask him, and I wished I had asked him now -- he dead -- whether he had any hesitation hiring me because I was a woman, because there were other applicants. And I don't know. He never showed it, I mean in all our close research work together he never indicated that he was prejudiced, that I was in any way inferior because I was a woman. There was no indication even subtly you know. Whether there was or not I don't know.

So as I said I don't know what swung him in my favor or not, whether Dr. Dean recommended, and I hate to think that there was any personal support. But years later I got a little idea of why he may have chosen me or may have chosen anyone else. He said he felt that his ideal research assistant would be someone that came out without knowing anything and that he would teach them in doing. And whether my credentials were not as high as others would have demanded because they scrutinized all you vita so carefully nowadays. But with that maybe in mind there was something, I don't know. Maybe (laughing) I don't think there was a matter that he thought he could control a woman better or that she would be more subjective or not, but certainly all through the years, he never showed it. I always felt on an equal level with him. He being only my boss, he would direct things and then, but he always knew that I would carry it out, and that I was thorough. I don't want to toot my horn but that was just the way we were brought up and this is what I did in my research. And he knew if he assigned a task that I would do it and do it thoroughly and that's, of course --- he couldn't do everything.

LG: Uh huh, like jokes or teasing or stuff like that. It goes on in some offices right?

BK: I don't know if he ever did have any prejudice against me because I'm a woman, but I know I respected him greatly for his work and he appreciated what I did, you know, because I was a hard worker. And I was very much in support of what he was doing because he was suggesting entirely new scientific theories and then we went out to prove it. And I always

encouraged him because it was exciting for me to see because now I was really in the world of science that had been nebulous before, to know what research is and all the things that happen in research besides the pure accomplishments in science, you know in research, the results of research.

LG: It's challenging.

End of Side A

Side B, February 11, 1994 continued.

BK: The department grew to about eight. That included technical help and I must say I couldn't have worked --- now I didn't work the whole forty-two years [for Sideris]. He retired and then I got another wonderful boss who was a type of man that told us what he wanted done and he didn't want us to bother him with little details. He said, "if you're employed here and I accept you as my assistants, I give you instructions and we talk it over and then I expect you to do it." I remember the first time I asked to have a little time off to go to the dentist and he said, "For goodness sake, please don't ask me if you're going to do things like that. Go and do them. All I want is to have the work done. If you go off maybe you'll have to stay later in the afternoon. But you're adults and you don't have to ask me permission for things like that." And he was also a brilliant man so I couldn't have worked under better people.

LG: That's very fortunate. Who was this second one?

BK: The second one was G.T. Nightingale who was a famous American physiologist and he had wonderful ideas. I was in on all these new discoveries that they made in pineapple culture and quality and things like that. I was so fortunate.

LG: Could you expand upon some of those for this oral history?

Can you think of some in particular?

BK: Well let's go back to Dr. Sideris who did a lot --- we did a lot of work with the nutrition of the pineapple plant. What were essential elements, now this is pure research physiology and then I have to tell you that this was all applicable to field culture because when you find out the nutrition then you translate that into fertilization. And he also did a lot of work with what we call minor, or micro-nutrients. You see the main nutrients are nitrogen, phosphorus and potassium, and plants to a certain extent will grow on that but you have all these micro-nutrients like iron, copper, boron and a lot of those that the plant needs in small quantities, but are essential and so we did a lot of work with that. And this involved growing plants in water culture, we had this big greenhouse and I was in charge of the greenhouse. These plants were grown, pineapple plants were grown in glazed pots and every week these had to be --- we make up the solutions in large quantity and you see everything was done by experimental plan so that you got the proper amount of replicates and everything so your results could be considered valid and then what we would do is take samples out of what was left in the pot and analyze it and I did a lot of analytical work. Then the difference would be what the plant had absorbed. Then at the end of the experiment we would have to take the plant, divide it up into leaves and the leaves into sections and the fruit and the roots and everything and analyze them to see what products had been produced from the nutrients we gave them. This is absolute control you see. Everything was controlled. We knew what we gave them, what they put out, and what they made out of it. And this was all translated into recommendations for fertilization. And then we'd get the yield, weigh the fruit, take the quality of the fruit in each one of these experiments. When I think of hours and hours of --- you know sometimes I'd work until eleven o'clock at night because when harvested, the plants had to be cut up and put into the dryer right away so they wouldn't change. My years with Dr. Sideris were mostly connected with the nutrition of the plant which in turn could be translated, transposed into fertilization to get the best yields and the best quality. That's

the practical side of it.

LG: Fertilization to best yields.

BK: To obtain the best yields and the best quality. We were always working for superior fruit, of course. All right then, my work with Nightingale was very exciting because we were beginning to work with growth, well, now we --- he proposed a way instead of doing it by this sort of academic way, to do your fertilization, we skipped that part but we used all different kinds of fertilization in the field and then he discovered if he took, pulled out one leaf and analyzed that, he could tell how the plant was responding. You see we were cutting out what we call water culture series and by just looking at it we got so we could estimate the weight of the plant, we got color ranges in the plant because the color of the leaves reflects the nutrition and so we go out, we do what we call leaf sampling. And actually you see it was cutting out one series that was the more orthodox way that Dr. Sideris was doing.

LG: Okay, so that was the water culture.

BK: Dr. Sideris was water culture. This is now eliminated in this. We start with our variables in fertilizer --- the water culture told us how to fertilize. Now we're going into the field and giving all kinds of fertilizer and seeing how they responded, which series of fertilization schedules gave again the best yields and the best quality. So that was a whole new concept and now it's used in many, many plants. And so again by looking at the physical qualities of the plants and analyzing that one leaf you could get the response to these different fertilizations. So I was in on that whole new procedure.

LG: When Nightingale came aboard what year are we talking about approximately? You know it doesn't have to be exact.

BK: I'm awful bad. Let's see. I started with Sideris in '26, maybe in the '40's. And that may be way off, I don't know. Yes, I guess maybe '40's because after all I retired in '68. All right, the

other big thing with Nightingale was the use of growth regulators, also called hormones. In plants we call it growth regulators, in humans or animals we call it hormones. It's the same thing. And with this we were able to make pineapples flower at any time. Yes, because otherwise they just...

LG: Must have been exciting.

BK: Oh it was. We tried many, many different new...

LG: I think that'd be real challenging.

BK: Yes, and so there was a lot of experimentation in that. Then let's see, so that covered many years too. Then let's see, finally now we have Cushing as a director, Robert Cushing.

LG: So approximately when did he come in?

BK: Maybe the mid '50's. And then let's see Cushing is director, not head of the department. Now the head of the department is Sanford. See the first director was, when I went, was Dean, and then whom do I have after Dean, or don't you care about directors?

LG: Well I do. I think it's kind of good to get the context of these folks. The first was Dean.

BK: Dean...

LG: And Nightingale we don't have someone [as director]. You didn't give me anyone.

BK: Auchter was director after Nightingale.

LG: And could you spell that.

BK: A-u-c-h-t-e-r, and he was a big shot. He was head of the Research Division of the whole Department of Agriculture in Washington. Now under Cushing, we have Cushing as director,

and head of the department is Sanford. [Sanford was promoted to director after Cushing left. He was the last director of the Pineapple Research Institute.] All right now under Sanford, and there may be an overlap there, the chemistry department, part of the chemistry department joined with part of the physiology department and we were assigned to work on nothing but quality of fruit. And that was maybe even the most exciting of all the work cause there are so many factors that go into.... First we had to define what constitutes quality and what was desired in quality and then we did all kind of experiments to get differences in those things and we got out eight great big, well reports or the results of our research, that became very important. And in that we discovered something very interesting: the processes of maturation, maturity and ripening. And we found something that became---even one time when I went to France -- I told you about these scientific leaves where I would go. I had this paper published and it has the most dramatic graph on it because the pineapple -- they found this afterwards. I remember going to the Sorbonne and visiting a professor in plant physiology and talking about it and he was so excited. You know how the French are, half the time he was talking French and half the time English. Through maturation the cells are building up, but I'm talking now only about the fruit, and this quality work was done only on the fruit. I should say the ideal --- oh, also under Dr. Sideris was rather an interesting thing. He found that the ratio of sugar to acid in the fruit is what makes it sweet or sour. There's a more or less normal, but if anything interfered in the nutrition, the acid would be higher than the sugar so that fruit would be called sour. If all conditions are ideal, especially nutrition, the last five days of the fruit on the plant determines its quality as far as taste goes. And if people, you know how people say -- I mean maybe you don't know this, we knew every story there was about pineapples -- how the normal person, the consumer picks out a sweet pineapple is to pull at the center leaves.

LG: So you just tug it. You don't try to pull them off.

BK: Yes pull, but this is just an old wives' tale because the first

person that pulls it, it doesn't come out because it's pretty solid. So that's sour, he or she leaves that. By the time the fifth one, it comes out because it's been tugged by four other people. Now it's suddenly sweet. Actually it's just as sour. I don't know where that wives' tale ever started. The other thing is if you pick a pineapple from the market, always let it stand a couple days because then it gets sweeter. What happens is that acid breaks down so that the ratio is such that the sugar is higher than the acid and now it appears sweeter.

LG: But it doesn't get more sugar?

BK: No, no it doesn't. That's why the last five days on the plant are important because that's when the sugar gets pumped in. Like a banana is pure starch. As you let it stand it turns to sugar and then it's sweet because it's an actual chemical change from starch to sugar. We used to have these scientists come down from the Mainland and they always had these wonderful ideas of solving problems that we had worked on for years. I can still hear this young man just out of college, doctor's degree, and he says, "You know the early fruit is full of starch so you put it in ethylene or something because that's what ripens them." You know how to ripen bananas fast. Put them in a paper bag and tie it. They exude ethylene and the ethylene ripens them. So he got this big tank that he was going to fill with ethylene, put these pineapples in and then he expected the starch to turn to sugar. Well, we were kind enough not to laugh at him or anything, but nothing happened because that does not happen in pineapple. It has starch in its process of maturation but it gets all of the sugar, not from breakdown of that little starch but it's pumped in from the leaves. That's why all the sweetness of a pineapple comes from the plant. The ideal thing is to leave the fruit on the plant till it's ripe cause it's been pumping in sugar all the time. That's why we used to, you know we could pick all the fruit that we wanted that weren't in experiments. And I used to bring a carload back and distribute all over and they said, "These pineapples are so marvelous compared to what you buy in the market." It is because sugar kept on pumping into the fruit until the time you picked them. Now they pick them so

green.

LG: Terrible.

BK: The only thing is you can let them stand a little and the acid will break down and will seem sweeter, but there's only that same limited amount of sugar that was [there] at the time, which is limited because it's a process of the sugar building up.

LG: I see. So it doesn't get any more sugar later.

BK: I forget what we were on.

LG: No, that's good, very good. We're on examples of various things that happened to you during the work process as you were coming along and we're at Nightingale, who was the person that you worked with. Were there any others?

BK: Well then during Sanford's directorship is when several people were chosen from chemistry and several from physiology and we spent all our research time on quality. What we wanted in studying quality was to have fresh fruit withstand shipping. See everything else was canned. And we already knew the quality we wanted for canned fruit.

(Interruption as visitor arrives.)

BK: They formed this new fruit quality department taking people from chemistry and physiology and, as I said, we finally identified the qualities we wanted in a fruit for the canned and for fresh which was a new market coming up. And they were quite different. And we worked, I think, five years on that. As I said we got, I think, eight, big, thick reports out on it. Oh I was telling about maturity. The fruit is mature, everything is formed there, but the pineapple is not at it's best quality when it is mature, it's when it is ripe, and a ripening is a process that goes on post-maturity. And there you have chemical changes. And that's when we found out, we analyze all ingredients and up to maturity. Well we started with a little

fruit like this and analyzed it and then we found when it was mature you know, you have a whole fruit ready to pick, that we went wrong and there was a big drop in acid and a standstill in sugar and things like that.

LG: Oh that's interesting. But they didn't know any of this before. So it's like a process.

BK: No. In fact they didn't know about it in any fruits so when this was published it was quite a sensation.

LG: And this would be in the 1950's? Approximately sometime in the 1950's?

BK: Yes '50, well maybe '55 to about '60 maybe.

(Interruption)

LG: You had said that Sanford was the director.

BK: The last thing I was doing before I left-- Sanford was Yes-- and there I worked on boron deficiency. Those were my last years.

LG: This is new too because people aren't aware of this. This is like the trace elements, aren't these trace elements?

BK: Yes, these are trace elements. They're called either minor trace or micro, and minor is wrong. We began to find these very peculiar symptoms in the fruit where they were misformed and had <u>puka</u>s in them and everything, and we traced it down to boron deficiency. So that was what I worked on until the experiment station closed in 1968. That's when I went over to the university.

LG: Okay we're going to take that in one segment, this part. Let's just kind of glance back at this kind of an overview. You give me an overview as you're coming along in terms of women in the world of work up to this, 1968, do you have some

observations or ...

BK: Well I was the only woman in the scientific research department and then we had another one and as I said I knew I was being discriminated against by not advancing as fast as the men did, and also less pay there but it didn't worry me too much because I made enough so I could pay my parents something--I was living here--and take my scientific leaves and travel. And you know I didn't have any ambitions to have a --- dress elaborately or anything that was....So I was quite content, I'll say I was content . Maybe it rankled once in a while in my mind but then this other woman comes into the chemistry department and it really rankled her. Well, because I guess she was a new generation coming up and they were becoming women-conscious you know. So she kept grumbling to me about this discrimination and she said, "Don't you resent it?" I explained to her why. And she says, " Well, I resent it and I think something should be...."

I said, "All right. I'll make an appointment with the director and we'll go in." And this is how I report it. "Dr. So and So," I don't want to identify him, (laughing). I mean what's the difference. He's still living. When he's dead you can put his name in. "I brought Martha because Martha resents the discrimination she's being shown as a woman." Because she was the same, she wasn't being advanced and she wasn't getting as much. She was in a different department.

And he said, I can still see him, "Well Bea, that's a situation, and as far as I see, it'll continue. Goodbye."

Unnamed visitor [V] participates in conversation for rest of interview.

V: Wow, I bet that didn't make Martha happy!

BK: Oh Martha, I just sort of looked at Martha out of my.... I said' "Thank you, Doctor." And we went out and she could hardly get out of that room. She was fuming. I said, "See Martha , that's

the situation. She said, "I resent...." I said, "Martha, there's only one thing to do is to quit and go somewhere else, but I'm afraid this is the situation." Of course things were getting a little better, and certainly by now....

V: What year was that Bea?

BK: Well, with Martha? Maybe '50, Yes about '50 I would think. I'm awful bad on dates.

LG: Well, that's still very early when you think about it.

V: We've come a long way since 1950.

LG: Oh, yes.

BK: Oh, I should say.

LG: That would be a tough time and the fact that there were just two of you and all the rest are men.

BK: Now as I said I was fortunate in my bosses and I know, in some departments they didn't even make an effort to improve the conditions as far as --- because the department head had more to do [with] what happened to you. He would make recommendations and then, you know, the director would take it up with the trustees and it would be done or not. Now I know Dr. Sideris made an effort and got nowhere. He was talking to deaf ears. I don't think Nightingale but --- none of those men ever within the research looked down on what I was doing, or anything, or made me feel inferior in any way. In that way they were ahead of their times because from what I heard about. Because there were several --- not many scientists in my class at the University of fifty-six. Of those fifty-six I would say about ten went into science but some went into engineering, one went into engineering and did she have, she had a harder time than we did because not only was she discriminated as far as position and pay went, but the snide remarks they would make.

A woman doing engineering you know. And some of the best engineers now are women.

V: Sure. Bea do you think your good treatment was due in part to your really fine attitude.

BK: It might have been. You see it didn't bother me. I wanted to do research and I had every opportunity and I had all these men who were doing all this innovative work. But I think maybe as much as anything is that I worked so hard and I don't want to toot my horn, and I was reliable and research has to be so particular. And you know I would work sometimes until eleven o'clock at night to finish up an experiment. Now whether it was that, but I know there were attitudes because when some of us women got together. Now most of my class were teachers which was the case in '50. And of course women dominated the scene there, so there was no discrimination, you know. Maybe a with a profession there is discrimination but not within the profession, because there the poor men suffered, you know, the few men that were teachers.

LG: I think also probably you were very absorbed in your work. So there might have been things that others would have picked up but you were just focused on your work.

BK: Well sure,yes, I don't know what some of my -- you see in our department there were eight or ten-- what they would say about me. Sometimes I think they were a little bit mad because I worked so hard. And you know sometimes the head of the department could give me some specialized work because he knew he could rely on me. Maybe they said some snide remarks about that, I don't know. I have no idea, but I never felt that I was being --- I knew I was discriminated, but it didn't bother me.

V: Well, then you were also fortunate enough to be able to live with your parents and not have to pay a big rent or have ...

BK: Yes, I started at a hundred dollars a month, but and that went

up gradually but not as fast as for those men, but as I said to Lila, if I could pay my parents something and I could travel on those scientific leaves and have enough to eat and enough to dress fairly simply, what more did I want?

V: My mother was teaching school and when she started out she earned a hundred dollars a month and she was the head of the household and didn't get any discount tax wise or anything.

BK: Aren't we about contemporaries? Your mother...

V: She's eighty-eight now.

BK: Yes we grew up in the same ....

V: Exactly. And it was a hundred dollars a month for a long time. And she didn't get any tax breaks or anything like that, even as the head of the household, teaching in the Los Angeles City School System. So it was about the same time.

BK: Yes it would have .... because that lasted for ten years or fifteen years on either side.

LG: So I also wanted to ask you about sexual harassment. Did you have any...

BK: There was none...

LG: Nothing that we talk of today as sexual harassment that you noticed?

BK: No, the only time I got pinched on my okole was in Rome.

V: Oh God, if you hadn't gotten pinched on your okole in Rome...

BK: I would have felt bad because everybody gets pinched in Rome. (laughing) I don't think there was any of that at all except I think there was a little love affair on the side of one of the married scientists and his secretary but it was very discreet

and there was a little bit of whispering but .... That is not harassment.

LG: It may be the field that you were into, if you were like a factory worker or in some other type of work, you know that may be more prevalent in those days even than it is in the field of science at that time. I don't know that but I'm just ....

BK: No, you know you never heard about --- well of course again I think they're trying to define what harassment is. Does it mean, well it can be two, it can be physical and verbal.

V: It can run the whole gamut, can't it? Just putting pressure on a woman because of the male/female difference I suppose might be one of the ways of defining it in a broad sense.

BK: And they couldn't say that, you know, I was a weakling because I was a woman and I had to have help, because I used to pick up those big, how many gallon demi-johns there are, and carry them around and make up my solutions. I waited for no man. (laughing) Maybe they didn't like that but they didn't express it you know.

V: That probably kept them at their distance. (laughing)

BK: You mean they think I might hurl it at them. (laughing) I don't know if I --- looking back I feel no feeling of, I mean having no real emotion about discrimination but I don't think I had it at that time. I think I would remember...

LG: That's what I was wondering, at the time, feelings that you might remember having had. But I think in an earlier tape we did discuss the fact that because of this not being able to get ahead in terms of being passed over that it has affected some things such as, like your pension.

BK: It had done what?

LG: You know you mentioned before in an earlier tape that because

of the job differential, that type of thing, that you didn't get the advancements you really worked for and could have gotten, that men were getting beside you. But that didn't bother you because of some of these other things. But in later years you might have ....

BK: Yes, you see acquisition of wealth never was a part of my nature, and I felt, in those days you know you lived so cheaply and traveled so cheaply.

LG: That's true.

BK: And of course my parents said I could live here for nothing, but I would not do that you know. I paid towards my board and lodging, I thought that was only right. But it certainly was a lot less than if I had taken an apartment.

V: And all the individual expenses...

BK: Cause I did a lot of work for them. I felt that it wasn't just that I was getting something for nothing, cause they were getting older too.

LG: I guess my question was more do you wish that today, do you have any thoughts about that, that perhaps if you had gotten better pay for your work that might have been a better thing. That was my question. Did that ever...

BK: Well, I always thought I wouldn't have to stay in the cheapest hotel in a town when I traveled in Europe. But on the other hand I would always say I had so much more fun in the cheap ones and so many more experiences.

V: Or sit in the lobby. Where were you on the Big Island when you sat in the lobby with the rug on your lap that night because you missed the manager?

BK: That was in Kamuela. No, I mean in those days I knew how to travel very reasonable. I would go everything third class.

Boats, in those days you went by ship, and you know, third class on the railroad things and everything, and I don't know that I specially thought it'd be nicer first class or not. But I know I -- one time I went to Japan on one of the Empress boats, they came from Canada, and I went third class. Well, it was very simple but it wasn't unbearable you know, you spend most of the time out. And I had a local friend here from a fairly wealthy family and they were first class. And we met --- once in a while they let third class go up to first class to see a movie on certain nights and I met her on the stair and she says, "Oh are you having a good time?"

I said, "Wonderful," because they'd have the most fun down in third class. They'd had little evening festivals like they'd fix it up like a cafe and people would sing or something. And I said, "How about you Betty?"

And she said, "I'm bored stiff. Do you think I...."

And then I said, "Oh it's too bad. I don't know why. I would think they had everything here for you, food and everything."

And she says, "No I'm just bored stiff."

And I said, "Oh too bad you aren't in third." And I told her everything.

`And she said, "Do you think I could come down?" But you know they were forbidden. We were forbidden to go across, this is a British ship, to go across classes.

V: They were forbidden to gather with the riffraff right. (laughing)

BK: One night they let us go to the movies and they herded us up so we wouldn't digress.

V: And that shows you the difference between then and now. Now everyone travels, no matter what class. If they have the money, they travel first class and you never know what class.

BK: I got into some awful funny hotels. I could write a book on funny hotels.

V: What's the funniest thing that comes to mind Bea about a hotel when you've traveled. You know a funny incident besides the Silver Sword Inn.

BK: Nan and I went up to the Silver Sword and that was the funniest thing.

LG: Where is that? I don't know about the Silver Sword.

BK: It's on Maui, in Kula. It was the most casual thing. It had once been a nice hotel. Well that's another story.

LG: I'm going to need to stop right now if that's okay with you all. We're up to 1968 and we'll pick up on that at the next time.

BK: That's when I went over to the University.

LG: Right so we'll discuss that some more and any other things you want to discuss. That will be the next interview.

BK: That's when I really got discrimination, but again didn't worry because I hadn't signed a ...

LG: That we want to talk about in more detail, the loyalty oath.

BK: I met the man the other day. We have a wonderful department in the University called Biography.

LG: Yes, I've been to those sessions, lunch sessions.

BK: They have these luncheons, brown bag. I must let you know about them. They are absolutely marvelous. You just sit around and I met the ---I went to one the other day and I met the man that got the bill introduced ...

LG: For that little cottage and everything, to get the cottage going.?

BK: No, that introduced the bill that eliminated the loyalty oath.

LG: So who was that man?

BK: All I remember is his first name is Richard. I'll have to look at the attendance record. [Richard Thompson]

LG: So we want to talk about that some.

BK: He said, "Now Bea why don't you go and sue 'em for back pay?" I said, "I don't know the statute of limitations."

LG: It's probably run out.

BK: Oh, I'm sure it has. And they said you could even have them add interest to it.

LG: You would suddenly become very wealthy. For a woman today it's very funny.

BK: It would seem strange to be wealthy to me (laughing).

V: Would your lifestyle change very much? If you became very wealthy, if that were to happen?

BK: Oh, no. I'd give it away.

End of side B

END OF INTERVIEW

GLOSSARY

Chaulmoogra	An oil from seeds of the Chaulmoogra tree, formerly used in the treatment of Leprosy.
kulolo	Pudding made of baked or steamed grated taro and coconut cream.
puka	hole