

GUEST: ISABELLA ABBOTT

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Aloha no and mahalo for joining me for another *Long Story Short*. I'm Leslie Wilcox of PBS Hawaii. We're about to sit down with the first native Hawaiian woman to earn a PhD in science. She's studied, taught and written about seaweed; and has become a world-renowned expert on it. I think you're really going to enjoy getting to know University of Hawai'i Botany Professor Emerita Isabella Abbott.

Isabella Aiona Abbott, the first native Hawaiian woman to earn a doctoral degree in science, did so in 1950 at the University of California at Berkeley. Since then, Dr. Abbott has built an international reputation as a botanist. She is a top expert on limu.

You have a heavyweight reputation as the world's foremost expert on marine algae.

That's not true.

No?

No.

That you have the reputation or that you are the world's foremost expert?

No. [chuckle] I know Central Pacific algae better than anybody, I'm sure, and the algae of California better than anyone, because I wrote the books for these two areas.

Well, that's a few hundred thousand miles there.

Yeah. [chuckle] I would say that if you wanted to say that I am a specialist in the marine algae of the Central Pacific, I wouldn't correct you there. But that's because there's so few of us. There—you know, the thousands of people who work on flowering plants; flowering plants mostly have the same kind of life history, so they become [SIGH] kind of boring. [chuckle] They make pretty flowers, they make nice smells; they taste good, many of them. But they're not like seaweeds. Every one you pick up goes through life a different way. And I suppose it is because they live in a salty environment, and once upon a time maybe lived on marshy places, and therefore, influenced by freshwater, not by salt.

So you like the variety and the complexity.

Yes; m-hm. It's a game; it's a game. I bet with myself the whole time, from the time I cut it on the outside. I say, Oh, I think this might be in such-and-such a family, or something like that. And by the time I get to some magnification on the microscope, oh, no, you're hundred percent wrong. [chuckle]

Well—

So let's begin again, you know. I love my work. I couldn't be luckier or happier than what I'm doing now. But, say, if I could go to the beach and not have to run in and look at the algae that are growing at that particular beach, that would be nice. But I don't do that. [chuckle]

How did this all get started, your interest in seaweed?

My mother. My Hawaiian mother; she used to take us—myself and my younger brother mostly—to the beaches. And for us to run around on the beach, well, that was just her reason.

What beaches were these, where you were growing up?

Well, in Waikiki over by Ka'alawai at Diamond Head, 'Ewa Beach when we were small. And at Lahaina, my Hawaiian grandmother had a house on the beach. It wasn't a big limu place, but it had enough so that—my mother knew every limu that was edible there. And I tell jokes about my mother, because it was easy for her. She knew all the edible ones, and gave you the Hawaiian names; never made a mistake. And so when I grew up, I put Latin names with those Hawaiian names. I never made a mistake either.

Was your mother exceptional, or was that common knowledge at that time in Hawai'i?

I don't know Leslie, that I would say it was common knowledge, but this is a loaded question. The women were the ones who knew the Hawaiian names. When Eleanor Williamson, who was a classmate at Kamehameha School, was working for Mrs. Pukui at the Bishop Museum for many years; she and I went around and interviewed different Hawaiian women on each of the islands. We had a grant to do this. And we talked to some in Hawaiian, and some in English, and I met a Hawaiian man. And I asked him, You know some Hawaiian names of limu? No, he said, go ask my auntie. And then, Go ask my mama; she'll know too, but ask my auntie first.

Is that because women were gatherers?

They were the gatherers because of kapu. There were many things they—on land they could not eat including, and especially, taro. Taro is the body form of the god Kane. Women were not allowed to touch a taro plant in those days.

But at the time your mother was a young woman, there was no kapu system. But you're saying that was a holdover from those times?

Oh, yes. And also, the knowledge pattern. She probably learned from her grandmother, who would be living when the kapu system was on.

So the women passed it on to the next women.

Yes. And to this day, I can meet young Hawaiian men. You know the name of this? No; ask my auntie. And the auntie usually knew. [chuckle]

And so you grew up with this knowledge, but it didn't mean you were gonna become a great seaweed scientist. How did that happen?

Well, I always wanted to work on plants when I was at Kamehameha, I was in the seventh grade class that was the first seventh grade in that campus. Well, the campus was so new that they wanted the girls to work in the gardens which were planted in flowers of the same color, like the Blue Garden, the Yellow Garden, the Red Garden, White Garden, so on. And every Wednesday, every girl had to go out and work in the garden. And the principal of the school, Maude Schaeffer, was very instrumental in shaping my knowledge of Hawaiian names of plants going. And that was the first time anybody told me that the scientific name meant something, just like the Hawaiian names meant something. Limu kala, for example, which is a big brown seaweed, very common. Kala means to forgive. If I brush you as I walk past you, I'll say, Kala mai, which means, forgive me, or excuse me. But kala also means spiny, and the little margins on the leaves of this particular brown alga are spiny. So it's well-named. Culturally, this is probably the most famous seaweed in the world. I have made it famous, because the ho'oponopono, which means to set things right, is based on everybody holding a piece of limu kala. The point is, you are to forgive everybody in your heart, in your head, that's sitting in this circle, where there's trouble in the family, or trouble somewhere. And out of the depth of your heart and your head, you forgive them. So when you leave the circle, everybody loves each other, everybody's not gonna think of this shame you brought to the family, or whatever it was that brought you to this circle.

Dr. Isabella Abbott understands the Hawaiian cultural meanings of plants. She wrote a book, "La'au Hawai'i," exploring links between plants and their symbolism in hula. She has a deep knowledge of "canoe plants," the plants brought here by the earliest Hawaiians. She'd like to see Hawaii plants studied for their healing properties.

I'm very careful not to talk about medicinal plants. I might talk about herbs; I'll change it to say herbal plants. And the reason is that doctors—I am not a medical doctor, and I'm not going to tell anybody that you should use this or that plant, because it's good for this or that. I will tell you, yes, that there are some plants that are useful for various, specific things; but you have to know what you are doing. Let me tell you some examples. I taught a class over at University of Hawai'i Hilo one time, and it was on invasive plants. And there was a haole woman who came, and she was just very eager to tell her story. And she said she came from the Midwest, and she found that she could live on forest plants near where she—where she actually did live. And so when she moved to Hawai'i, she thought surely in this forest around here, I could find things to eat. So she went off without any food herself; she was going to live off the land. Two days later, she was calling for help on her cell phone. She had discovered a tree that had some interesting looking nuts.

M-hm.

And so she broke open the nuts and ate them; they tasted very good. But she had gotten into a kukui nut. And anybody who lives here knows that this is a laxative par excellence.

Absolutely.

And she was put in the hospital for two weeks. She just absolutely cleaned herself out, and all the bacteria as well, so there wasn't anything to help her digest anything.

But if she'd known how to make good use of the plant.

Yes. If she knew how to use that plant, it is the most used medical plant for Hawaiians, for a whole—huge variety of things.

For example?

Cuts and bruises, sore throat. I hated to tell my mother that I had a sore throat, because she would get a kukui nut kernel and burn it, so that it would be black, and make charcoal, and then dip a wooden spatula into this charcoal, and say, Open your mouth. [chuckle] And she would put it in the back of my throat. I had that done to me many times.

Did it work?

I don't know if it worked, but maybe you might say you would hope it would work.

[chuckle]

So I would have to do it again.

You were motivated to feel better. [chuckle]

Yes. And so those are two examples. But kukui has a lot of toxic elements in it. But like many medicines, digitalis being one of them, if you know how to control the dosage, it will work for you. If you don't know how to control the dosage, it might kill you.

What about noni; you hear so many people singing the praises of noni, and selling the bottles to keep in your refrigerator. How good is it?

[chuckle] I can only answer something like that depending on what I know about it. And what I know was either what my mother told me, or some other Hawaiian lady told me about using noni. For the Hawaiians, it was all externally used. Like well, you

have a bruise on your wrist; so you put a noni leaf on an open fire, sort of just scorch it, and then put it around your wrist. As it is cooling down, the goodies in the leaf will leak out onto your wrist, and that's supposed to help you. I never read anything about taking it internally. I don't think that you could depend on it as being useful, and I have no experience with it myself. I'm not trying to get out of answering; it's just to tell you know what I know. Well, Dr. Henry Ayau, who was a Hawaiian medical doctor, and the way he practiced herbal medicine, I would give him a doctor's appellation. He was a very nice man, and very conscientious. But he used some plants that were not Hawaiian plants; they were introduced to Hawai'i as early as 1890. The Board of Forestry keeps records; at that time, they kept records about when different species were found in Hawai'i. And he said his grandmother was the one who taught him about that particular herb. But mostly, he used the ones that the Hawaiians or the Polynesians who became Hawaiians brought with them. And those are the ones I tell people about, when I know about them. Because they are my test; people have been using those since maybe the year 600 AD, when they came.

What are those? What are those ones that have been used for so very long?

They're mostly weeds; what we would call weeds. Something called ihi, I-H-I, which is a little, small creeping little plant; and it's a little acid. And I think the little acid taste is what makes you think it's going to work for you.

Does it?

I don't know, but it can't hurt you; that's my point. [chuckle] They have been tested over these many years, and nobody died from them, that I know about. So they're—to me, I can't say that they're useful, but I know they won't kill you. Whereas, some others might be useful, and you don't know anything about their background, no tests by humans for six hundred plus, two thousand eight years [chuckle]. You would think they're quite safe. Now, what would one of those be? Uhaloa is one of them. Almost any Hawaiian of age that you would meet, you—and you ask them, Do you use any Hawaiian medicinal plants? Oh, yeah. Well, what one? The laukahi, they tell you; it's this little plant thing, about this big, for boils and infected knees, mostly. And, Oh, why uhaloa? Well, sore throat;

And you're telling me there hasn't been a rigorous scientific testing of them to see if they really do have an effect as—

I love the way you use the word rigorous, because that is exactly the condition. People have dabbled at trying to find the ingredient or settle ingredients that make this possible as a medicinal plant. And not really paid strict attention to it, rigorous attention to it. And doing what the scientists do, which is to replicate what you found out, that is the key of science—not once, not twice, but you did it ten times or a hundred times, and it always came out that way. Then it's safe for you to use.

Have you ever put your scientific attention to checking out rigorously those plants?

No. Because I'm not a good enough chemist for that. You have to be a biochemist to do that,

Well, let's talk about what you're good at; which is seaweed.

Yes. [chuckle]

What have you done in the way of seaweed research?

What I'm known for is naming plants, collecting plants, and either putting them into a classification where they're already known; and maybe widely known, maybe known all over the world except in Hawai'i. Or in this case, I might suspect it was an invasive species. Well, it then means a lot of microscope work to try to find out its life history, because how it goes through life history determines where you put it in the system of classification. So it requires microscope work. And hit the books; because the answer might be in the book that you never thought to look in.

Dr. Isabella Abbott, Professor Emerita in Botany at the University of Hawai'i at Manoa and retired Professor of Biological Sciences from Stanford University, has had many opportunities to name marine algae for the text books and for posterity.

Well, I just named one after the captain of the ship, Hi'ialakai, which I named, by the way. It's a NOAA ship, and it's the only biological oceangoing laboratory ship in the NOAA fleet. And its home port is Honolulu. So it goes up to the Northwestern Hawaiian Islands.

Are there limu named after you?

Quite a few, but you can't name them after yourself, of course. [chuckle]

So somebody else named them after you?

Uh-huh. I even have a genus named after me; Abbottella, which means a little Abbott. [chuckle]

And who named these algae after you?

This one was named by a colleague who is the second author of *Marine Algae of California*.

Had you helped him with that particular project?

Mm-mm.

Or he just respected you, and wanted to name—

Yes, the—

--something after you?

The second; m-hm.

Does that make you feel—I mean, do you look it up sometimes and say, Wow, that's my name in the genus?

No.

[chuckle]

Whenever I run into that part of the alphabet, Abbott, Abbottella, would be a genus with that name. And so it'd be first in the slide box, probably. I take it out and look at it; it's such a pretty little thing. You'd never—

[chuckle]

--find it. It's tiny, but it's so pretty.

A consummate researcher, Dr. Isabella Abbott was awarded a highly regarded prize in science, the Gilbert Morgan Smith Medal from the National Academy of Sciences.

In that photo that you have that shows your colleagues and competitors for this very prestigious award that you won in 1997, you are the only woman and you were the only minority among this large group of very distinguished scientists.

Well, I don't think that's surprising. But to get through, you can imagine I could have had my nose out of joint, felt like a second class citizen, and so on, at that point, if I had been brought up differently. But I have a lot of brothers,

That's a stunning visual representation, though; the fact that you're the only woman there.

M-hm.

Everybody else is Caucasian, and male. But that never bothered you, that you were sort of one of a kind?

No.

At that level.

No. What would it gain me? Nothing; I would be the same person I am, and you know, continue to find new species of algae or have a good time in life. [chuckle] That's what I do best, those two things. [chuckle]

Isabella Aiona Abbott, a woman who loves her life's work, was born to a mother of 100% Hawaiian ancestry and a Chinese immigrant father in Hana, Maui.

My father came over as a plantation laborer from South China. And one of the reasons he came, he said, because there were no levies or dams to prevent the water from the rains in the wintertime that would wipe out their rice crop, entire crops, year after year. And they heard that in the north, Peking, at that time, there was an empress who was building a marble boat for a lake. And why were they spending money on something like that, when they could maybe help the farmers in South China. And so it's hopeless, you couldn't fight it at that time. So he left when he had a chance, go to the Sandwich Islands. In Chinese, it's called the Fragrant Islands because of sandalwood and make a fortune there, or just find out what it's like. So he was used to backbreaking labor work in the fields, and he worked on the Kipahulu Sugar Plantation.

He came as a young man by himself?

With his brother, who was twenty years old and my father was eighteen at that time. And they both worked, I think it's five years, then you could pay the planters back for your transportation and be free. You could go do anything you wanted to. He had several colleagues that came over in the same way, and worked in the same plantation. And one of them was Ah Ping, who lived in Puko'o, Moloka'i. And he was just as well known on Moloka'i, as my father was known in Hana; they'd both opened little stores and became the magnates of all the Hawaiians around. [chuckle]

So your father actually opened a store that competed against the plantation store in Hana—

Yes.

Which had to have raised their ire, that competition. But how well did he do against the authorized—

In five years, the plantation closed its store, and it remained closed as long as my father was there.

What was his secret?

I think the secret was him. He was a warm, friendly person. He learned Hawaiian before he learned English, and was fluent in Hawaiian. That's one of the reasons I learned Hawaiian, because it irritated me that he and my mother would be talking in Hawaiian all the time. Well, I want to know what they're talking about, you know. [chuckle] So I listened very hard, and I was quite fluent in Hawaiian before I went to the mainland.

You picked it up by eavesdropping?

M-hm.

M-m.

And dictionary. [chuckle]

Your mother gave you a Hawaiian name. What is that name?

Kauakea, Kauakea. And when I was in Hana a few years ago, I was looking out on the ocean, and the sun was coming up at the horizon. Mind you, this is Maui; it wasn't coming up in Haleakala Crater, which is what I was brought up to believe. Anyway; and then it started to rain. And the rain looked like fine mist or clouds, and it was moving toward the land. And that was what I knew I was named after, Kauakea, white rain of Hana. And it's used as a geological name, like you would have a name of a wind, kamakani. This would be the name of a rain. And the reason for this is, geologically speaking, Haleakala is very close to the coast at that particular place; less than a mile, I'd say. So it prevents—it's high enough to prevent the rain coming from the opposite side, from the mountains into the sea.

So even in describing your Hawaiian name, you give me a scientific explanation. Do you apply science to everything you do?

[chuckle] I'm maybe not aware of it, but yes, I do. And some Hawaiians get tired of me—

[chuckle]

--sometimes and say, Oh, that's because she's a Western scientist.

What's your answer to that?

I can't help it. I was trained that way.

Isabella Abbott says she only gives opinions on things she knows. The first native Hawaiian woman to earn a PhD in science, the first woman faculty member of Stanford University's biological sciences department, leading world expert on Central Pacific marine algae, she's going to hit ninety soon and she's still conducting high-level research at the University of Hawai'i at Manoa. Mahalo piha to Dr. Isabella Abbott, and to you, for joining me for this *Long Story Short*. Please join me again, next time. I'm Leslie Wilcox of PBS Hawaii. A hui hou kakou!

You know the most amazing things. I remember a conversation you and I were having, and everybody in the room stopped still, as you said you knew how to make the foam on beer stand up. Remember that?

Yes. You add a little alginate, which is an extract of kelps, to the liquid. And stir it up; or shake it up if it's in the bottle. And then you take off the top, and here comes the foam. The longer it stands up, the better you like your beer. Something about it; I don't know what, 'cause I don't drink beer. But that's what they all came to hear about. I was very amused.

And the advertising folks would love to know that.

Yes. [chuckle]