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THE HUMAN SIDE OF UNCLE SAM
(Nation's School of the Air)

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U. S. Department of Agriculture

THE U. S. BUREAU OF PLANT INDUSTRY

A conversation between Dr. Eugene C. Auchter, Chief, Bureau of Plant Industry, U. S. Department of Agriculture, and Charles Herndon, student, Paul Junior High School, Washington, D. C. Broadcast Thursday, October 13, 1938, in the Nation's School of the Air series over Station WOL, Washington, D. C.

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CINCINNATI ANNOUNCER:

Now let's visit with Uncle Sam in Washington, D. C. To learn about the Bureau of Plant Industry, we visit the studios of Station WOL in the Nation's Capital.

WALTER COMPTON:

And here we are in the Nation's Capital, with Dr. Eugene C. Auchter, Chief of the Bureau of Plant Industry of the United States Department of Agriculture, and Charles Herndon, a student in Paul Junior High School, Washington. Dr. Auchter, I understand you're going to tell us about the plant explorers who travel through the wilds of India and the deserts of Asia, and are chased by wild elephants and man-eating tigers in the jungles of Siam. Is that right?

DR. EUGENE C. AUCHTER:

Well Mr. Compton, that seems to be the popular impression. I'd sort of planned to tell how we're breeding new varieties of wheat and corn, and oats, and rice, and sugar cane, and vegetables and fruits, and cotton, and the improved methods of soil management, fertilization, harvesting and shipping practices we've developed. But my young friend Charles seems chiefly interested in plant explorers.

CHARLES HERNDON:

Yes sir, that's what I'm interested in.

AUCHTER:

I suppose you want to hear about the expeditions we send abroad to hunt for new plants -- and bring 'em back alive.

HERNDON:

Yes sir. I may want to be a plant explorer myself, some day.

AUCHTER:

It's a mighty interesting occupation. How old are you?

HERNDON:

I'm fourteen.

AUCHTER:

Come around to see me -- when you're about five years older.

HERNDON:

Do I have to wait till I'm an old man?

AUCHTER:

Well no, not exactly. I don't like to think of you over in Afghanistan, for instance, hobbling around on a cane. The climate might be too much for you. Think you could stand it?

HERNDON:

Sure I could stand it! Did you send explorers to Afghanistan?

AUCHTER:

Just recently one of our explorers went to Afghanistan, from India. While he was in India, he'd seen some strange-looking vegetables coming down from Afghanistan -- and some extraordinary grapes. Now if I promise to come back to the explorers in a few minutes, will you let me tell you about some of our other work in the Bureau of Plant Industry?

HERNDON:

Yes sir, but I didn't know plant explorers did any other work.

AUCHTER:

Oh, you didn't! Let me look at your shirt. Is it made of cotton?

HERNDON:

Why -- I don't know.

AUCHTER:

You don't know! Here you are, wearing a part of the most important fiber crop in the world -- right on your back -- and you don't know it. Why, our cotton scientists have been working for 30 years, to develop the cotton in that shirt of yours -- cotton with a long fiber, a strong fiber. Now tell me what you had for breakfast.

HERNDON:

Why, I had a sliced orange, and oatmeal.

AUCHTER:

What variety of orange?

HERNDON:

Just -- an orange.

AUCHTER:

It may have been "just an orange" to you. Ever been in California?

HERNDON:

No sir. Not yet.

AUCHTER:

Well, when you go to California, I want you to stop at Riverside, where there's a memorial to Mrs. Eliza Tibbets, the "Mother of the Washington Navel Orange Industry."

HERNDON:

Was she a plant explorer?

AUCHTER:

I'll tell you about her. Sixty-five years ago, a missionary down in Brazil sent William Saunders of the Department of Agriculture a few small orange trees. Mr. Saunders sent two of these trees to Mrs. Tibbets, and she planted them. Now water was scarce in California, and Mrs. Tibbets had to take mighty good care of those plants -- to keep them from dying. Well, in a few years, they were producing seedless oranges -- some of the most delicious oranges you ever ate in your life, and nurserymen all over the State wanted buds from those trees. Now we have many hundreds of carloads of navel oranges shipped every year.

HERNDON:

Are Mrs. Tibbets' orange trees still living?

AUCHTER:

One of them is. I saw it just last spring.

HERNDON:

And it's sixty-five years old! Boy! That's pretty good.

AUCHTER:

You go out to Riverside some time, and look for an inclosure with a stout iron fence around it to keep out souvenir hunters. In that inclosure you'll see Mrs. Tibbets' orange tree -- the one that came from Brazil, 50 years before you were born. Now you say you had oatmeal for breakfast.

HERNDON:

Yes sir.

AUCHTER:

No doubt you had some of the improved oats our scientists have been working on for many years. Did you have sugar on your oatmeal?

HERNDON:

Sure.

AUCHTER:

Then you're probably benefitting from our experimental work on the production of sugar cane and sugar beets. There's a long story there -- too long to tell here.

HERNDON:

Do you want to know what I had for supper last night? Where'd the potato come from?

AUCHTER:

From Peru. The original potato was terrible. It was nothing but a hard, knobby, hollow-eyed, root.

HERNDON:

Didn't Irish potatoes come from Ireland?

AUCHTER:

Are you Irish?

HERNDON:

No, but my mother is.

AUCHTER:

Well, maybe we'd better not say too much about it -- but that story about Sir Walter Raleigh taking the potato from Virginia to Ireland -- that's just a good Irish story. The truth is -- the potato went from Peru to Spain, and from Spain to Italy, and from Italy to Vienna. At first, people didn't like the potato. You've heard of the Potato War in Germany?

HERNDON:

No sir.

AUCHTER:

Ever hear of the potato banquet they gave in Paris for Benjamin Franklin?

HERNDON:

No sir.

AUCHTER:

The whole banquet consisted of potatoes, cooked in different ways. You're going to find the potato tied up with history -- with the Spanish Conquest, with wars, with priests and pirates and kings and queens -- and plant explorers. Our own scientists have made two trips into South America, to locate the early relatives of the potato. Of course these early relatives aren't much good for eating -- but they're strong and hardy, and they make good ancestors for the new varieties of potatoes we're developing.

HERNDON:

What other plants do we have -- that came from foreign countries?

AUCHTER:

The date palm, the Barouni olive, the pistache nut, papaya, grapes, Persian walnuts, the Meyer lemon. By the way, I'm going to tell you about Meyer, in a few minutes. He was one of our great explorers. Then we have the mango, soybeans, avocado, dasheen, nectarine, jujube.

HERNDON:

I never even heard of some of those. Wasn't anything growing in America, when the Colonists came over -- except corn and beans and squash?

AUCHTER:

A good deal more than that. In a way, you might consider the Colonists -- the Early Settlers of North America -- as plant specialists. They worked hard to improve the plants they found growing here.

HERNDON:

How do you work -- to improve a plant?

AUCHTER:

Now you've asked me a real question. When you hear the answer, you may decide to stay home and do your exploring in a laboratory.

HERNDON:

No sir. I'd rather discover a new plant -- in Afghanistan, or India.

AUCHTER:

Well, a little further along in school, you're going to take up the study of genetics -- the laws of inheritance. You'll find out how plant breeders work to produce better plants. They've already developed superior varieties of wheat, corn, oats, barley, sorghums, alfalfa, apples, citrus fruits, berries, melons. In California and Arizona, they've got a brand new cantaloup that's making history. You like cantaloup?

HERNDON:

Oh yes, I eat lots of cantaloup.

AUCHTER:

Then you've eaten some of this new one I'm talking about. Last May, when the crop started moving East from California and Arizona, nine-tenths of that crop was Cantaloup U. S. Number 45. Those cantaloups were on the train, coming East, for nine days, and they stood the trip like veteran travelers.

HERNDON:

How long does it take to -- develop -- a cantaloup like that?

AUCHTER:

It took the scientists ten years. (That doesn't count the hundreds of years Mother Nature's been experimenting -- in her own slow way.) Ten years ago, the cantaloup growers in California were in despair. Their business was being shot to pieces. When they planted cantaloups, a disease called powdery mildew often attacked the crop. Then the plant explorers went to work. From India, they brought over a cantaloup that was no good at all, to eat, but it was resistant to powdery mildew. The plant breeders crossbred this fruit from India with an American cantaloup that was good to eat. Well, after several generations of breeding they got a pretty good fruit -- Number 50. Number 50 was resistant to mildew -- like its Indian ancestor. It tasted good -- like its American ancestor. But it wasn't firm enough to stand a nine-day train trip clear across the continent. It simply couldn't travel.

HERNDON:

Well, maybe it didn't have any ancestors that were -- "traveling cantaloups."

AUCHTER:

I guess that was it. But the plant breeders kept right on experimenting, and after four more generations of breeding, they produced U. S. Number 45, which is both an excellent melon and a good shipper.

HERNDON:

What else have they -- produced -- besides cantaloups.

AUCHTER:

Well, there are new tomatoes like the Marglobe and Glovel, resistant to wilt. The Marglobe tomato practically saved the Florida tomato-growers from ruin a few years ago. There's a new lettuce -- resistant to both powdery mildew

AUCHTER: (Continued)
and brown blight. We've developed better cabbages, onions, snapbeans, sweet corn, peaches -- oh, lots of others. But now, what about the plant explorers.

HERNDON:
I'm ready.

AUCHTER:
Frank N. Meyer, whom I mentioned before, was one of the most famous explorers of all time. He was so interested in his work, so enthusiastic -- he'd even forget to eat, and he slept in some of the most miserable, wretched, out-of-the-way places you can imagine. He spent most of his time in China, searching for native plants he could bring back to America. You've heard of Marco Polo, the Venetian merchant who traveled in the Orient some 600 years ago?

HERNDON:
Yes sir! I know all about Marco Polo!

AUCHTER:
(So that's where you get your ideas about plant explorers.) Well, you may remember that the home folks in Venice laughed at Marco Polo, when he went back and described the wonderful things he'd seen in his travels. He said he'd found a huge nut -- the size of a man's head. A nut full of a liquor you could drink -- and a milk-white substance you could eat.

HERNDON:
That was the coconut. (You've read Marco Polo, yourself!)

AUCHTER:
Well, yes. Now the folks back home in Venice hadn't ever seen a coconut -- so naturally they doubted Marco's story.

HERNDON:
Did they doubt Mr. Meyer's stories?

AUCHTER:
Oh no! I should say not! What I'm getting at is that Meyer brought back reports of fruits and vegetables almost as strange as the coconut seemed to the Venetians -- 600 years ago. Meyer told of the timber bamboo; the blight-resistant pear and chestnut; that delicious Chinese fruit, the jujube; the wonderful seedless persimmon; the graceful pistachio tree. He described the wild Chinese peach, the strange and charming roses -- the Chinese elm. You can hardly walk through a field or a park, in this country, without finding a plant that we owe to this great explorer. •

HERNDON:
Did he have adventures?

AUCHTER:
Adventures? While he was collecting plants on the border land between China and Siberia, he was persecuted by spies. In Russia, he was attacked by ruffians, and barely escaped with his life. One time he was stood up against a wall to be shot by Chinese soldiers.

HERNDON:

Boy! Did they get him?

AUCHTER:

No. One time when he was traveling over the trackless deserts of Chinese Turkestan his guide deserted him -- and Meyer was left to find his way alone. Finally, during the Chinese revolution, he was shut up for several months in Ichang. This last experience proved too much for even a strong fellow like Meyer. He was never very well after that. In 1918, while he was traveling on the Yangtze River, he disappeared from the boat. His body was found -- floating in the Yangtze River.

HERNDON:

But -- what happened to him?

AUCHTER:

Nobody knows. Maybe it was an accident. Maybe it was foul play. Meyer's death was a great loss to the Department of Agriculture, and to the world. Plant explorers like Frank Meyer are not trained in a day.

HERNDON:

Tell about some other plant explorers.

AUCHTER:

Another intrepid explorer was J. F. Rock, who traveled into Siam and Northeastern India. He's the man who had thrilling experiences with wild elephants and man-eating tigers, in the wild jungles of Siam.

HERNDON:

Did they get him?

AUCHTER:

No. By the way, did you know Colonel Lindbergh was a plant explorer?

HERNDON:

No. Where?

AUCHTER:

In the sky. He scooped his specimens out of the air, with a device he called a "sky hook." They were floating around in the air.

HERNDON:

What kinds of things float around in the air?

AUCHTER:

Tiny things called spores. When they germinate and grow they cause plant diseases. These spores are so exceedingly tiny you can see them only with a high-powered microscope. Through Fred Meier -- a scientist who was with the Department of Agriculture -- Lindbergh became interested in studying these spores that travel by air. The two men worked out this sky-hook, and they caught the spores on glass slides, covered with petroleum jelly. Something like catching flies, on sticky fly paper. On one of these slides -- just one

AUCHTER: (Continued)

slide, in a space less than one inch square -- they found forty different specimens. This was when Lindbergh was flying along the northeastern coast of Greenland -- 3,000 feet above sea level.

HERNDON:

Maybe I could be an aviator -- and be a flying plant explorer. Now tell me about another one.

AUCHTER:

Well, there's my good friend Doctor Fairchild -- living down in Florida -- in a home surrounded by many of the varieties of plants he found on his trips around the world -- and to the tropics. If you called on Doctor Fairchild today like as not he'd show you a mango tree, avocados, figs, Surinam cherries, custard apples, passion fruit -- and a dozen other tropical strangers. Maybe if you were interested he'd tell you about the time he stopped at the Cannibal Islands, and drank kava with the King. But I could tell you stories of our plant explorers all day long, my lad. Now you must get back to school, and I must get back to work.

HERNDON:

I certainly do like to hear you talk!

AUCHTER:

Well, maybe we'll have some more stories -- some day.

HERNDON:

I sure hope so!

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