PLANT PEOPLE Season One Episode Eight 'Eating to Extinction' Transcript

DAN SALADINO: To give you an example of how much diversity of fruit there was in England, and actually across the UK, it was possible to eat an apple a day for four years without eating the same apple twice.

JENNIFER BERNSTEIN NARRATION: Many of us take what we eat for granted, especially in parts of the world that enjoy the privilege of choice. Most of our supermarkets offer a wide diversity of fruits, vegetables, and proteins originating from all around the globe—whether they've been cultivated locally or shipped in from elsewhere.

But our modern food system is being challenged in myriad ways and history has shown that the foods we think of as commonplace can very well become rare, or even extinct. It is time we pause and consider the current threats to our food supply before our favorites—or worse, our necessities— disappear from the menu.

This is Plant People from NYBG. I'm your host Jennifer Bernstein, CEO & The William C. Steere, Sr. President at the New York Botanical Garden. I'm a plant person, and I've made it my mission to talk with experts and enthusiasts from all walks of life who are passionate about the green and growing things that make life possible. Through research, stories, and conversation, this season is about how plants are connected to human thriving.

Today, I'm joined by a wonderful author who has traveled the globe, documenting traditional foods at risk of disappearing due to modern agricultural practices, climate change, and the shortcomings of the global food system on which we've come to rely.

JENNIFER BERNSTEIN: Dan, it is so terrific to be with you today and to be talking. As you know, I'm a big fan of your book, and so it's great to be able to dive into these topics about food plants with you today. I'm going to start with a question that I like to ask all of our guests: how did you become a plant person?

DAN: Hello, my name is Dan Saladino. I'm a food journalist and broadcaster, and I'm the author of a book about food diversity. Title is: Eating to Extinction: The World's Rarest Foods and Why We Need to Save Them.

I came across a catalog of endangered foods when I first became a food journalist. I was trying to find stories and came across *The Ark of Taste,* which is a project set up by Slow Food in Italy, concerned about the disappearance of regional foods, flavors, animal breeds, regional varieties of vegetables, fruits, and so on. And, for some reason, I became really intrigued and then obsessed by this list of endangered stories. And within the catalog are foods including wheat. And, I think for most people, outside of the world of botany and also agriculture, well, wheat is often just wheat, but into this catalog, I dived and then you start to realize that wheat isn't just wheat, there's a huge amount of diversity.

You dive a bit deeper and then you realize that there's a story that unfolds over thousands of years of how humans interacted with wild grasses, and then became entwined in this world of plant life on which their lives depended, and then in turn on the fate and the future of the plant then depended.

So I, I think that's how I really started to look closely and appreciate that plant life was really such an important part of the world that I had now joined, which was food journalism; to actually be, someone who could explain stories of the past, present, and future of food. I argue, now, that really does transform your relationship with nature, with plant life and with agricultural biodiversity, which is what a lot of my work revolves around.

JENNIFER: Absolutely. Yeah, the story of food plants is the story of our own history, of human history, human culture, and so there's so much to learn about the past and the future from really understanding the nuance behind some of these plants. You mentioned agricultural biodiversity. Can you define that? What is agricultural biodiversity and why is it important?

DAN: I think even the term “biodiversity” only really entered mainstream conversations around a decade ago. I think it was quite a – it was a word that you would find within mostly bubbles of scientists and botanists and so on.

So if biodiversity represents all the connections and all of the different variations of life on earth. I think in a lot of people's thinking that might represent something that they would find in what they imagined to be a pristine forest in the Americas.

So, it could include the types of plant, the sort of flora and fauna as well. And then I think because of that story I've just mentioned about trying to understand the origins of our food and that wheat isn't just wheat, you realize that actually there is

a huge amount of diversity that humans have interacted with over millennia beyond our ten, twelve thousand years of farming, as hunter gatherers.

So if you know, think about, around 300,000 years as *homo sapiens* on this planet, bipedal species, and then traveling around the world, interacting with nature to answer the question, what am I going to eat today? That means this interaction with landscapes, with nature, with plants and animals becomes increasingly complex and diverse.

The legacy of that over all of those thousands of years of interacting with wild plants and then domestication with agriculture is then the creation of new forms. And this is agricultural biodiversity to me.

So if you then go to the Arctic Circle and go down the tunnel that is Svalbard – the Global Seed Vault – which is the backup for all the seed banks around the world, that is the legacy of thousands of years of agriculture.

And so, for example, I'm staying with wheat, more than 200,000 accessions of wheat are in Svalbard. More than 100,000 of maize, tens and tens of thousands of rice, for example. Those, that's the story of the interconnection between humans and plants; that story of adaptation and dispersal of those seeds and those seeds adapting to different environments and cultural preferences.

And that is the wonder of the agricultural biodiversity that we have created, and it's in a sense, one of the greatest resources that humans have created on the planet. So we think that humans have, interacted with, six, seven thousand edible plants around the world. And what I've tried to do in my work is to try and shine a light on that diversity. And in many cases, it really is endangered and has been disappearing.

JENNIFER: Right. One of the things that you linger on in the book is the extraordinary advances that were made during the Green Revolution, you know, saved countless human lives, it was a major step forward for humanity, but it has come at a cost. And so maybe you could talk a little bit about the role that the current global food system plays in the decline of food biodiversity.

DAN: Hm. For so much of our agricultural history – and, thinking about those centers of diversity that human populations were interacting with that diverse array of wild plants, cultivating them. So if you think about the Fertile Crescent or

central Mexico highlands of Oaxaca, or the river valley basins in China, the way in which people farmed and were able to continue producing food was through the process of selection and adaptation, which meant there was a huge amount of diversity that humans depended on.

Towards the end of the 19th century, when we see the emergence of more in-depth crop science, crop breeding, and into the early 20th century, where we even have the term genetics coined, we start to see the emergence of some of the really major inputs in the 20th century.

So the Haber-Bosch process, with synthetic fertilizers; what we're able to do really is just to take greater and greater control over nature and natural systems. And so the way in which we can plant seeds into soil and produce huge amounts of calories is transformed because of technology and science. Most famously in the second half of the 20th century with the Green Revolution.

But I think what we now appreciate is that the focus on producing calories – and at that time there were obviously concerns over hunger, starvation, famine in different parts of the world – so this idea of this productionist effort of that we need to produce more and everything is measured in terms of yield; we now live in a world in which the science has revealed more to us of the complexities of not only agriculture, but our interaction with soil, with water, with the microbial world as well.

So, in a sense, looking back now at that effort, it appears to be quite reductionist because we are now in an era in which there's climate change, in which we're trying to lessen our dependence on fossil fuels. And during those decades, we did see a decline in biodiversity because of the way those agricultural systems spread around the world and became more intensive.

And also agrobiodiversity, because they were so successful, we believed we could depend on a very narrow genetic base to feed the world. And now we know we need greater agrobiodiversity and biodiversity for future resilience of us and also the planet.

JENNIFER: Yes, we're shockingly dependent on a relatively small number of crops for our global food supply. So there's a lot that we lose when we lose agricultural biodiversity. We lose the cultural resonance and importance of various food plants that many cultures have depended on.

But, we're at the point where this model is challenged to continue to do what it has done, which is feed the world because this over reliance on a small set of crops could present real problems for us. Can you talk about an example along those lines?

DAN: I think we are now becoming more aware of examples of the problem. I think the most famous, the one that you can read multiple newspaper articles about or, radio programs about, or television coverage on is the banana. So the idea that…

JENNIFER: The Cavendish.

DAN: …the Cavendish banana. So the idea that there is this huge diversity of bananas, more than 1,500 different types of bananas, genetically diverse.

And because of the nature of the globalized agricultural system, we end up depending on a type of banana for the globally traded banana. First of all, it was the Gros Michel, or the 'Big Mike', but was overwhelmed by fungal diseases – Panama disease – because it's clonally propagated. And so if a fungal disease is able to attack, it can then overwhelm entire plantations, which is exactly what happened with the Gros Michel.

And it's now unfolding with the Cavendish, which is again, clonally propagated, so it's genetically uniform. That's the poster child really of monocultural production. And also it highlights the risks of a very narrow genetic base because the diseases are still evolving and mutating, whereas the plant, because it's cleanly propagated, isn't happening. So we're not having that co-evolution between disease and plant.

JENNIFER: Let's get into some of the cultural history of some of these food plants. Can you tell us a little bit about the rare cider apples that you talk about in the book?

DAN: Absolutely. It's one of my favorite chapters because it does showcase something that at one level is pretty much extinct and it's extinct to the cultural level really. This is the idea that in a part of England, these are perfect conditions for orchards, so growing apples and pears.

And out of that tradition emerged drinks. So cider from cider apples, a particular type of apple cultivars. So not your table apples, and also Perry pears. These are

very small, almost conker-sized fruits, which you would not want to bite into. But when they are fermented, they create what I could describe as the champagne of England. And for centuries, these were highly prized, cherished, cherished drinks. But because cultivating them is hard work, because there were more crops that became far more profitable, we saw the disappearance of traditional cider and Perry pears.

And just to give you an example of how much diversity of fruits there was in England, and actually across the UK, it was possible to eat an apple a day for four years without eating the same apple twice, because there was so much diversity. And the relationship with these fruits was, it's now hard for us to appreciate because people would anticipate the arrival of one type of early apple or pear. And then look forward to a later one. There would be almost an appreciation of apples and pears that would sound to us like an appreciation of wine in the way in which it belonged at a certain point in a meal and would have a certain texture and flavor. And that existed up until the early part of the 20th century, but then disappears.

So I tell the story in the book of a particular tree in Herefordshire, which is what is the last remaining type of Perry pear tree. And it's used by a Perry maker. Perry is the pear equivalent of cider. And the cider and Perry pearmaker, Tom Oliver, who is profiled in the book, was looking for this tree. He heard stories that this tree existed, and tracked it down after years of looking in his part of Herefordshire. And to him, he said it was like discovering Stonehenge because it was almost like a mythical feature on the landscape. And the flavors like a sweet shop, in a sense, the fruits that were being produced by this peri pear tree; and fascinating to think that in a relatively short period of time it disappeared from British food and drink culture, and it disappeared from the landscape.

JENNIFER: Yes, that's, that's an amazing story and you think about all that, that's lost when that happens. And it connects to these big human and environmental challenges that we're facing. It's interesting as we think about the climate crisis or the biodiversity crisis, it can be very overwhelming. It can feel very disconnected. So much though of how we address it is a practice of remembering what we've lost, you know, and I think that these stories about food are about remembering. And it can give you a sense of agency because we all make food choices every day and to the extent that we're investing in the people that are investing in these ways, we can be part of the solution.

DAN: I think one that I interact with every single day without fail is coffee. And I think it actually is coffee that, when scientists at the Royal Botanic Gardens in Kew, have done modeling of what will happen to the coffee types that we currently depend on, so that's Arabica and Robusta, it doesn't look good.

And we're not talking about the next decade, but we are talking about the decade to come. Arabica is a relatively fragile plant, so farmers have been having to go at higher and higher altitudes to hit that cool spot where it is most productive and disease resistant. And Robusta can be impacted by variations in rainfall.

And so what scientists have done is to look at what has gone before. And what's really interesting about this coffee that pretty much went extinct is that it's as delicious as Arabica, but actually is more drought tolerant than Arabica. And scientists from Kew went over and they found one tree of Stenophylla, which is no good because it's like finding two rare pandas.

You need to reproduce, so they actually had to go through remote areas looking through forests to find another, which they have done. And they are now bringing back Stenophylla.

So when we see climate impacting on Arabica in the future, something is being brought back that actually will enable us to carry on drinking coffee. So the diversity of the past is also going to be the food and drink of the future.

JENNIFER: Yeah, absolutely. I can tell you that I'm personally very attached to the future of coffee. And it's something that Mauricio Diazgranados, who's our head of science, he and I have been talking about, you know, all of the work that's underway to find these plants that can make coffee resilient because the world needs coffee and I need coffee.

JENNIFER NARRATION: It's frightening to think that one day, our food options might be severely limited. We could go from having the abundance we enjoy today, to seeing some of our most cherished foods disappear.

When we return from the break, I'm curious to learn how Dan was able to immerse himself in the communities that he has researched. And what can we learn from their traditions before it’s too late?

BREAK

JENNIFER NARRATION: This is Plant People from NYBG. I'm Jennifer Bernstein. I've been talking with journalist and author Dan Saladino about endangered foods and agricultural biodiversity.

It goes without saying that food is important to our everyday lives. We can gain a deeper understanding of our favorite foods by exploring the traditions and stories that surround them.

JENNIFER: How did you connect with the communities that are continuing to cultivate and rely on traditional foods to make sure that you were appropriately representing their perspectives in your work?

DAN: Hm. And I think that's so important because there is a huge amount of academic work that takes place and wonderful people who are working in the field, but the voice of the people, who are still working with, interacting, depending on this food diversity. There are so many examples in which communities have not only lost food sovereignty – so the ability to control what is being grown – but also what is their relationship with food in a more holistic sense.

So many parts of the world in which one food culture has been replaced by another. So I spent time, for example, with Hadza people in East Africa, some of the last remaining hunter gatherers in Africa. Spent a lot of time speaking with Aboriginal people in Australia as well.

And I think that's when you really understand why we're not just talking about food or ingredients or plants and genetic resources; that actually there is something so deep and that goes to the very heart of their identity, and their sense of who they are, and their history, and their connection with their ancestors, and really importantly, their connection with the land.

So in every story that I've covered, it was essential to speak to the people who were connected with that culture and with that food; as well as then going to try and have that objective scientific understanding of how does this fit into history? How does this fit into the global food system? And why is it important?

JENNIFER: How can individual people – consumers – make more informed choices about what they're buying?

DAN: I think one of the things I've tried to do in my work, and I think this is something that we should all try and achieve in some way, at some level, is to know the story. I think it goes without saying how important food is to all of our lives, and yet we know so little about where our food comes from.

And I don't just mean, something that you buy in a store, who grew it, which is important, and how did it arrive in the store? But where did it come from in terms of the human story that I mentioned before. About the origins of our food and the diversity that it was part of. I think that's such an important story for us all to know.

Also technology in the form of digital networks that means that I can be connected with a food producer or farmer in my local area, and I might not even have realized that they're there. That is easier now than it's ever been, to connect with alternative supply chains. So that's one thing that we can all be doing is almost, think like a Hadza.

And that means to have that awareness of where our food comes from, but also what else is out there that we could be exploring that almost like this agrobiodiversity in, you know, we could reach out digitally to actually find out what's there and investigate and explore.

JENNIFER: Yeah, that's beautiful, because it makes us, instead of being subject to the food systems, we're an active player in how we navigate the food world, you know?

DAN: Yeah, the slow food movement actually has, I think, a really attractive term for this, which is co-producer. So, to not think of us as passive consumers, where we are, almost like the recipients of this system. But as a co-producer, so I can be more engaged.

JENNIFER: Yeah, I love that. You mentioned CSA. So that's community supported agriculture. So folks can buy a sort of share in a local farm, and then you're participating in the harvest, in the ups and the downs. And you help to share some of the risk with the farmer. And also you get this amazing diversity of food all throughout the season. Farmers markets too. Yeah?

DAN: Yeah, and one of the things that certainly is missing from so much of our food experience now is the changing seasons. And I think it's through markets and, you know, getting involved in a CSA that, this, the reality of a world in which

we've now come to expect 365 days a year, 50 weeks a year, it's possible to buy all types of fruit and all types of vegetables to actually, I think – as I mentioned with the apples before – is to almost that anticipation, the looking ahead and looking forward to the arrival of something that is precious.

JENNIFER: Can you talk a little bit about the role that chefs and the culinary industry play in this movement and how people can connect to that?

DAN: I think chefs have been really important and continue to be because they have a menu, which obviously it needs to tell a story. And I think some of the ways in which I've come across some of the stories of food diversity has been through chefs. I'll give you a couple of examples.

So, when the new Nordic cuisine really emerged in Copenhagen and other parts of the Nordics, that was a group of chefs who were on a mission 20 or more years ago to, I guess, leave the world of French cuisine a little behind. So they retained some of the techniques and some of the values about produce; but actually to look at where they were in the world to actually start to embrace some of the foods that were in their area, the kind of biodiversity, agrobiodiversity that they were surrounded by that had never made it into a restaurant menu in Denmark, in Norway, in Sweden, in Iceland.

And I think because the world then became excited by this new generation of chefs, that approach really inspired chefs in different parts of the world to ask the question, where am I in the world? What am I surrounded by? How can I feature some of the ingredients that people, perhaps generations before, were surviving on? How can that appear in a modern restaurant menu? And then some chefs around the world took that even further and started to engage with projects to conserve and showcase agrobiodiversity that perhaps in countries, urban populations, were completely unaware of.

So I went to La Paz in Bolivia, for example, a restaurant called Gusto, and the chef there was actually traveling into the Bolivian Amazon and then also going into the Andes and spending time with communities. And what they were trying to do was allow the community to tell their story of the kind of foods they were farming and eating.

And then, if possible, to try and then become part of a very small supply chain that they were in control of to sell some of those foods to the chef who could then put

them on a menu and really importantly, tell the story of that diversity to an urban audience.

So I think chefs are amazing storytellers, hugely influential, and then can actually be really proactive in concrete projects, in which they are helping communities carry on farming in the way they want to.

JENNIFER: You know, it's so intuitive because we think about how food connects us to other people. You think about sharing a meal as a very connected experience. And this is sort of an extension of that, connecting to the people that you're eating with but also connecting to the people who are preserving these foods, growing these foods. It extends it in a really lovely way.

DAN: And I think in turn, this also has inspired – not necessarily at a political level, but it's certainly at a community or a city level – people to think about how they are hugely influential in the way they spend millions of dollars and euros and pounds on public procurement. So the kind of food that ends up in schools, in hospitals, care homes, et cetera. There are examples around the world. In Brazil, for example, where I think is actually there is a legal requirement on schools and, or at least cities, to procure food from local farms, family farms.

In Copenhagen, they actually, instead of just talking about how much something cost, but also they were trying to send signals back to farmers that they would be rewarded for diversity.

JENNIFER: That's great because there's these multiple levels that people can plug into this. There's what you buy and how you buy it. Are you going to a farmer's market? Are you participating in a CSA? Are you being thoughtful about what you purchase at the grocery store?

There's where you're going out to eat and what local establishments you're patronizing. And then there's the way that you're a voice in your community for what you want your kids to be eating or what you want your public dollars going for. So there's lots of ways for people to have influence.

So, how do our listeners stay updated on your work and continue to learn about food plant biodiversity?

DAN: I have a website dansaladino.com, where I'm hoping to be updating some of the stories. So if you're reading Eating to Extinction and you're wondering what happened to that farmer, in the coming months, I'm going to be updating some of those stories.

JENNIFER: That's terrific. Well Dan, I really enjoyed meeting you first when you came here to speak at a symposium we had recently and then, of course learning more about you and your work and your book and this conversation. It's been a real pleasure. So thank you for making the time.

DAN: I had such a wonderful time in the Gardens, and then thank you very much for this conversation as well.

JENNIFER NARRATION: I love the way Dan thinks about this issue: instead of being passive consumers of the foods that are made available to us, we can look at our choices at the market as investments in the food plants of the future.

I would invite you to check out Dan's book Eating to Extinction. It's a wonderful, thought-provoking read with an important message for our time.

In our next episode we are joined by NYBG Trustee Dr. Jessica B. Harris, scholar, author, and expert on the foods and foodways of the African Diaspora. For the past three years, she has been the lead curator of NYBG's African American Garden. Jessica and I will walk through the garden as we discuss Afro-Caribbean culinary traditions, the botanical legacies of the African Diaspora, and much more.

Thanks for listening to Plant People. We're excited to bring you more stories about plants and the people who love, study, and care for them in new episodes dropping every two weeks.

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