

Description: Oral histories are a means of archiving past events and perspectives, as well as personal histories. They offer wisdom, unique viewpoints, and perspectives that may shift our understanding of the present. Oral histories can also capture information that may seem insignificant in the moment, but provide valuable information for the future, in a way we can't predict. The role of oral histories in preserving biological diversity will be explored through the lens of Jeff's work with heirloom seeds, medicinal plants, and ethnobotanical studies of Bahamian bush medicine.

Introduction

Thank you! I'm very happy to be here. As Judy Collins said, when she opened her concert in Charlottesville, Virginia this last spring, she said, "At my age, I'm happy to be anywhere."

I'm especially happy to be here with you, as you all understand the importance of preserving heirloom seeds and biodiversity. Thank you for coming. Most of you here have a wealth of experience. Some of you come here as beginners. As beginners you bring one of your greatest assets—a beginners mind—which will allow you to be open to all sorts of possibilities that will help you shape and define the future of the heirloom seed movement.

In the past, when I've given presentations I have focused on the technical aspects of seed saving, but today I want to talk about something different, and I'll be sticking more closely to my script than usual. I'm going to be telling a lot of stories. Those stories serve the purpose of exploring the value of the intangible, to attempt to demonstrate why it is important to save the stories behind the seeds, and what those stories might have to offer.

This talk is based largely on stories collected over my years while I owned Southern Exposure Seed Exchange, from 1983 through 1999. Some of them are my own stories. I always had a special interest in collecting and documenting stories associated with seeds, but it wasn't until the last four years that the value and beauty of the stories was brought home to me. Four years ago, I began a project collecting stories about bush medicine in the Bahamas, how the residents there developed their own system of medicine using plant extracts to treat and cure a variety of illnesses. From those stories I was able to reconstruct and document their system of medicine, and perhaps in the nick of time before that wisdom got lost. In the process of collecting those stories, I also became interested in the whole process of collecting oral histories. If you want to know more about it, see me afterward. I'll also be available afterward at the book signing and also will be hanging out at the Southern Exposure Seed Exchange table. I hope you'll also visit the Virginia Food Heritage project tent. They are also collecting oral histories connected with food.

Recently I heard a TED talk, by Brene Brown. She is a research professor in social work at the University of Houston. The subject of her talk was about vulnerability, courage, compassion, and the importance of connection.

In her talk she came up with a wonderful expression, in which she gave a novel definition of the word “story.”

She said:

[1] “Stories are just data with a soul.”

Data with a soul. When I first heard that expression, it gave me chills. With those few words she captured the very essence of the value and importance of stories.

Long before the written word, stories fed the evolution of human culture, and thereby allowed our species to prosper. Stories offered a means of passing information, values, and strategies for survival from one generation to the next. In a sense, stories are a type of cultural DNA, that help drive and fuel our evolutionary process.

Our stories started long before the hours of our birth, long before our distant memories, long before the written word. They go back thousands of years to the days when our ancestors sat gathered around the fire, flames flickering in the darkness, shadows dancing on faces, all listening to the one who was speaking, the speaker’s voice rising and falling, speeding up and slowing down, recalling details about the day’s hunt, the narrow escape, the lessons learned, what to do next time. Perhaps the story teller was a woman describing a plant she had found that helped to heal the sores on her baby’s skin—where to find that plant, and how to prepare it. We all had our beginnings in these stories.

When Patty and I founded Southern Exposure Seed Exchange in 1983, I became fascinated by the stories that are associated with heirloom seeds. Not only were the stories fascinating, but they taught me many lessons, not only about seeds and plants, and plant breeding, but also about life and history. I learned all sorts of information ranging from tips for selecting corn, to lessons about isolation distances for seed purity, that farm animals often prefer to feed on heirloom grains in preference to more modern varieties. I also gained a vicarious sense of what it was like to be as a young child at the age of four to be sent out in the field to pick cotton all day. Such stories not only offer insights into the mechanics of agriculture, they also offer insights into our history, and the human condition.

As I began to work with heirloom seeds, there was a phrase that kept crossing my mind. The words were from the Roman statesman and philosopher, Cicero. I first read those words, inscribed in stone above the entrance way to the University of Colorado library

where I was an undergraduate. The inscribed words read, “He who knows only his own generation remains always a child.” When I first read that, I pondered its meaning. For some reason, the words stuck with me, and intrigued me through the years. It wasn’t until I started Southern Exposure that I started to develop an interest in oral histories. That’s when Cicero’s words began to acquire a richer, full-textured meaning.

Before talking about the stories associated with seeds, I’d like to tell a personal story of my own.

I often wondered where my love of working with plants came from. I never lived or worked on a farm and I didn’t have any gardening experience while growing up. When we lived in suburban Pennsylvania, for three years my parents had a small backyard garden with only a few tomato plants. And that wasn’t very successful, because our dog, “Jeff,” in addition to chewing on lumps of coal found on the ground, used to grab the unripe green tomatoes off the plants and play with them, or even chew them. Needless to say, that experience was neither a proper introduction, nor a source of inspiration for my gardening that was to follow in later years. It wasn’t until Patty and I were graduate students at the University of Connecticut, that we had our first vegetable garden.

After we moved to Virginia I started Southern Exposure Seed Exchange, and I began to wonder where my affinity with gardening started. One day, the answer came instantly, and so I picked up pen and paper, and the story just flowed out of the tip of my pen within 15 minutes. It was the only piece of writing I’ve ever done that came out nearly fully formed. Shortly thereafter, it was published in *Fine Gardening*.

The story contained childhood recollections of spending time with my great uncle—Uncle Shirmer—a family doctor in Pittsburgh, who liked to garden on weekends at his country cottage in Harmony, Pennsylvania. To the rest of the family, Uncle Shirmer was affectionately known by the nickname, “Lord Hoe Hoe,” because he so loved working in the garden. When he was in his garden, he was king of his domain.

As a young child, I would spend a lot of time together with Lord Hoe Hoe in his garden. While there, he would teach me how to plant potatoes and other crops, and how to tell when vegetables were ripe, and which were the good bugs and which were the bad bugs. By the age of 15 or so, Lord Hoe Hoe had passed away, and we had moved to Colorado. By then, I didn’t remember much about what he taught me about planting and tending crops, but what I do remember is Lord Hoe Hoe’s love for gardening. When he was in the garden, he had a special radiance there, an almost palpable connection with the land and the plants. I carried those connections like a dormant seed into my young adult years. That was the life force in the seed that germinated and later gave rise to the seed company.

The seed company's origins could also be traced back to a visit to Old Sturbridge Village in Massachusetts, an historic farm, where I was enchanted by the heirloom poultry, and the Jacob's Cattle beans growing on tripods of poles in front of the farmhouse. Then after moving to Virginia, I joined the Blue Ridge Seed Savers in rural Nelson County. There we gathered yearly for food, music, and exchanging seeds. One day, a friend brought some potato onions to the seed exchange. They were the best keeping onions I'd ever seen, but they were no longer available in catalogs. I researched their history, found a farmer who was growing them, and I wrote an article for Organic Gardening. That article generated a lot of interest among readers, and that was the arc of magic that started the seed company. I suddenly found myself in the seed business.

As I was beginning Southern Exposure, I used to tell people, as I do now, that I was just as interested in saving seeds, as I was in saving the stories behind the seeds—what I refer to as saving the *soulful relationship* between gardeners and the seeds they saved.

You know, running a seed company is not for everyone. It was lot of hard work, long hours, and late nights. Most unsettling of all is that the busiest time is during the winter trying to send out orders in a timely manner. Winter is supposed to be for calming down, resting, reflecting, and hibernation. Instead it was this frenetic flurry of activity. It seemed like I was always 180 degrees out of sync with the seasonal rhythms of nature.

And it is not an easy way to make a living, certainly not in those first ten years. But I found you can make a real living of it, if you redefine “making a living,” and think of it in terms of “making a right livelihood,” or “making a difference.” At the end of a long hard day, or at the end of a long busy winter, what made it worthwhile in the end, was the sacred act of being able to share in people's lives, exploring the connections between people and the seeds they saved. It was the stories that infused the work with meaning and purpose. It was the letters of gratitude for rescuing a seed that no one else in the family was going to pass on.

The second point, I'd like to make:

[2] “Stories provide valuable information in ways we can't predict.”

To explain that I need to tell you another personal story.

The first family heirloom tomato that I introduced was in 1983 when the first Southern Exposure catalog was mailed out. The name of the tomato is “Tappy's Finest.” It was named for the grandmother of Amy Hereford, a friend of Patty's. Amy told Patty that her grandmother, whose nickname was Tappy, had been saving seeds of a tomato for many

years. Amy said it had excellent fresh-eating flavor, good also for juice, and canning. She explained that each year, her grandmother selected the best-flavored tomatoes with small cores and few seeds, and she saved those seeds for planting the next year. We were excited. This was our first exposure to a tomato saved as a family heirloom. So Patty, Amy and I traveled to the mountains of West Virginia to meet Tappy and her tomato.

When we arrived at Tappy's home, she took us out into her large garden to show us her tomato plants. While we were standing there in her garden looking at her tomato plants, she said that she grows only that one tomato variety in her garden because the wind will cause it to cross with other tomatoes. My ears perked up when she said that tomatoes are wind pollinated. Now, I had gone to graduate school where I studied pollination ecology and natural products chemistry, and I knew that tomatoes aren't wind pollinated, but I wasn't going to say anything to Tappy. I knew that the wild ancestors of the modern tomato were pollinated by wild bees. I didn't say anything to Tappy about that, so I just remarked that it was really interesting to hear that tomatoes are pollinated by the wind. The point of being there was to honor and learn from her experience, and to savor our first family heirloom tomato. Tappy explained that she had seen the pollen blowing from the tomato plants, and that is why it wasn't safe to plant other tomato varieties nearby. Well, that was indeed, an interesting tidbit of information, so I just tucked that bit of information away as being a curiosity, and as part of her story. Tappy clearly didn't understand the pollination mechanism, but she had a lesson to teach, and I was there to listen. The basic lesson, regardless of the pollinating mechanism, is that if you want to keep your tomatoes pure, don't plant them near other tomato varieties. It turns out she was correct to isolate varieties, but for the wrong reason. Anyhow, it didn't really matter, and this was no place to get into a discussion of pollination ecology. I was a city boy, not a country boy, and I knew my place, and this wasn't my turf. I didn't want to make a fool out of myself by giving her an academic thesis on pollination ecology. We were there to share in her experience. We were grateful that she shared her seeds with us. After Tappy gave us some of her seeds, we thought it appropriate to name the tomato in her honor.

Three or four years later as I was growing out tomato seed from the seed crop of the previous year, I was alarmed to discover that two of my heirloom tomatoes had crossed even though they were separated by a distance of about 25 feet. All of a sudden Tappy's admonition about not growing tomatoes too close together, came home to roost.

Now I need to give a bit of a back story here. When I first started Southern Exposure, I had a great deal of difficulty determining the proper isolation distances for some seed crops, especially tomatoes. Much of the literature said they were self-pollinated, largely because during the period of crop domestication the female portion of the flower, the style, had become shorter, so much so, that it was much easier for the tomato to self-pollinate, than to outcross. But having a background in pollination ecology, I decided to

investigate further.

So I decided to get on the phone and call some expert tomato breeders to get their opinion. First I called renowned tomato breeder and expert, Charlie Rick in California. He had collected various species of tomatoes in South and Central America, as well as ancestors of the common garden tomato (*Lycopersicon lycopersicum*). He was well aware of the fact that wild bees cross-pollinate tomatoes, but when it came to isolating modern domestic varieties, in California, he said that domestic varieties only needed to be separated by about 10 or so feet, partly to keep a mechanical separation so they don't get mixed up during harvest. This wasn't the answer I expected, so I called two other tomato breeders in different areas of the country, one in South Carolina, and another in Maryland, and I got the same answer.

So why then did my tomatoes cross at 25 feet? I realized I needed to find my own answer, because I wasn't going to find it in the literature, and I wasn't going to find it by calling breeders and tomato experts. So for a period of a couple weeks during that summer I spent a fair amount of time sitting down in several tomato plots, just watching the plants and the tomato flowers and taking photos. Amazing what you discover when you take the time to slow down and observe. The first thing I noticed was that bumble bees were very active on the blossoms collecting the pollen, but they weren't always in the right position on the flower to cause cross-pollination. I also noticed several species of wild bees, one of which may be familiar to some of you as sweat bees. They were actively gathering the pollen. Their behavior on the flower was such that they were able to not only collect pollen, but to also pollinate the flowers. I took photos as evidence of their behavior. At least for the variety of heirloom tomatoes I was growing, it was clear that wild bees could potentially cross-pollinate heirloom tomatoes.

On the last day of my observations, I was sitting near a bed of tomatoes in the garden just watching the plants and the insects, when suddenly a breeze came along. Much to my astonishment, I then observed tomato pollen being blown from the plants for a distance of about 15 feet. The pollen might have traveled further, and likely did, but was difficult to observe beyond that point. Serendipitously, the lighting for making that observation was perfect. What I saw was unmistakable. The pollen could not have been from other plants. It definitely originated from the tomato flowers. I saw it.

It was then that Tappy's words came echoing back to me about tomatoes being wind pollinated. Apparently, she had also seen tomato pollen being blown by the wind. Her story was true—even though her conclusion about the effectiveness of wind pollination was incorrect. First of all, insect pollinated plants tend to have sticky pollen, and usually this pollen isn't wind-borne. But in the case of tomato pollen, it is fairly easy to dislodge the pollen from the anthers. It isn't as sticky as some other pollens, like lily pollen for

example. At the University of Virginia, where my day job was, I sometimes fiddled around in the greenhouse making various tomato crosses, one goal being to develop a salt-tolerant tomato, and also making other crosses just for the fun of it. One of the parent tomatoes was from the Galapagos Island. I did succeed in breeding a partially salt tolerant tomato but the fruit was small, orange, hairy, somewhat sticky, and probably palatable only to Galapagos tortoises. Anyhow, in order to make the crosses, I used an electric toothbrush to vibrate the tomato flowers, to dislodge the pollen into gel caps so that I could collect it for crosses. The pollen didn't appear to be very sticky. It had more of a powdery consistency.

Having said this, I am not making a case for possible wind pollination in tomatoes. Although I had observed tomato pollen being carried by the wind in the field, the probability of any of those pollen grains landing on the sticky stigma of nearby tomato flowers causing fertilization was nearly statistically improbable. The one exception being that the flower could pollinate and fertilize itself in such a manner, but otherwise it is clear that when tomatoes cross in the field, they are insect pollinated, largely by wild bees, just as it occurred for their ancestors.

You know, when I put on my scientist hat, I have to live in a world of data, numbers, statistics, randomized controlled trials, and peer review. Like other scientists I believe in what can be measured. But although I respect science as a tool for understanding nature and nature's laws, I also have come to realize from a variety of life experiences that science has its limitations in helping us to understand the world.

So I learned something important from Tappy's stories. As I look back on that visit with Tappy, I realized that she was the first to teach me about the importance of listening to people's stories and learning from their wisdom. When we decide to follow the footprints of someone's story, we embark on an interesting journey, a journey that leads to unexpected destinations, and surprising outcomes.

One other story that I'll mention, also has to do with isolation distances. It is a short story about beans. In 1986, seed saver Fred Pierson had been traveling through Tennessee looking for heirloom seeds, and occasionally after his travels he'd send me an heirloom variety, sometimes with a short story. One day he sent me a small package of what are called 'bastard' beans. The short note in the package read, "This bean I found growing on a single vine that came from some seed that someone gave me. I showed them to a lady, and she called them "bastard." She said they would show up occasionally. I found that they had changed the brown spot on my Aunt Lydia beans to blue. I suppose by cross pollination, there were perhaps four or five bean plants near this one that changed. So a question—what do you think of this theory? I have never seen a bastard bean before nor I had heard of one." He went on to advise me that the bastard bean should not be planted

near any other bean, as it would easily cross with other beans.

This story is an example of where the story may be more important than the seed itself. At the time I was growing bean seed in the mid-eighties, the conventional seed saving wisdom was that beans are self-pollinated plants, and as such require little isolation. To a large extent that's true. However, my experience was that even though I had isolated bean varieties by 25 feet, I had seen some crossing. While I was already aware that the types of pollinators, number of pollinators, pollinator behavior, environmental factors, other sources of pollen, and flower color and shape are some important factors affecting cross-pollination—I had suspected that susceptibility to crossing could be related to variety differences as well. Fred Pierson's anecdotal narrative about the bastard bean gave me a heads up, allowing me to realize that there might be some considerable variations in some bean varieties, regarding their ability to cross pollinate.

When I began researching the literature regarding isolation distances for food crops, I learned that during World War II, when domestic food production went into high gear to support the war effort overseas, Canada at that time, made a requirement that seed producers isolate all self-pollinated varieties by 150 feet. Taking a cue from this requirement, I required my growers to isolate all bean varieties by 150 feet. As it turns out even 150 feet was not be sufficient for lima beans, which are more susceptible to outcrossing than garden beans. One of my growers was a beekeeper. I discovered on seed grow out that there was crossing of limas at 150 feet. So after that discovery, I asked that he grow only one variety of lima bean to eliminate any possibility of crossing.

Now I want to switch gears from stories about isolation distances to stories about the nutritional composition of seeds.

During the early years of the seed company I received several fascinating letters on the subject of nutritional quality of heirloom seeds, especially grains. The letters contained stories to the effect that when farm animals are given a choice between eating hybrid corn, or eating heirloom corn the animals invariably prefer eating the heirloom corn. The first time I received such a letter that stated that horses prefer heirloom corn, I was quite interested, but rather dubious. Then I received a letter from another customer noting that his chickens, given a choice between heirloom and modern corn, preferred the heirloom corn.

I was slowly beginning to warm up to the idea, but I was still dubious, at which time I remembered an old saying, which goes like this:

"The first time someone calls you a horse's ass, you punch the person on the nose, the second time someone calls you a horse's ass, you call him a jerk, but the third time

someone calls you a horse's ass, well then, perhaps it's time to go shopping for a saddle."

So by the time I received a third letter stating that the farmer's pigs preferred eating heirloom grain, I decided it was time to go shopping for a saddle. When a couple more letters arrived with similar stories, I decided it was time to invest in the futures market for saddles.

Somehow, the average barnyard cow seemed to know something that I didn't know. I began to take it personally, so I had to get to the bottom of it. I was not about to be one-upped by a cow.

What I discovered in reading the literature at that time, is that nutritional content in a number of crops, particularly corn had steadily declined over the years, and that some of the heirloom corns had higher nutritional content. Somehow the animals were able to discern that, or at least had a preference. There are a number of explanations. One possibility is that animals may be responding to a higher concentration of volatile compounds in the seed.

At this point though, I want to briefly revisit the story of Tappy and her wind-pollinated tomatoes, where she said tomato varieties need to be kept isolated to keep them from crossing—but for the wrong reason. Maybe the animals are indeed correct in preferring heirloom grains. But just like Tappy, they make their preferences known for reasons we may not yet fully understand. Again, the important point here, is that stories contain elements of truth, that can get you thinking in new directions, and in ways that we can't predict. And the meanings of these stories may change as our capacity to understand them, develops and grows.

Now I'd like to tell you one of my stories that fittingly follows the stories the nutritional quality of heirloom seeds. It has to do with the germination quality of heirloom beans versus modern bean varieties.

In the mid 1990's, while doing some routine germination testing, I noticed that many of the heirloom and older varieties of garden beans seemed to germinate slightly better than modern varieties when raised for seed under the same conditions. Curious about this, I contacted an official at the Virginia State Seed lab and mentioned this observation. I was told that in 1966, the state germination standard for *some varieties* of common beans had been lowered from 75% to 70% to allow for the lower germination of more modern varieties. In 1986, the Virginia seed law was amended again. This time, the minimum germination standard for **all** varieties of garden bean (*Phaseolus vulgaris*) was lowered to 70% for all varieties. So, this observation led to a question: what happened during the breeding process in creating new varieties of beans that caused this relative weakness in

the seed of some modern varieties? Admittedly the difference in the germination standard was small, but nevertheless significant—perhaps not largely significant in practical terms, but significant in another respect. This leads to the question, what are the priorities of our commercial breeding programs for beans?

[3] Stories often capture information that may seem insignificant in the moment, but such information may become valuable at a future date.

As mentioned before, the tag line for Southern Exposure is “Saving the Past for the Future.” I want to give you some examples of seeds that came with short stories that illustrate this concept—that certain varieties may have qualities that may be needed in the future.

One of my favorite stories is about ‘Surecrop’ corn. The seed came from R.C. Mauldin, at the Southwestern Seed Services Lab in Waco, Texas. In the late 1980’s as Mr. Mauldin was nearing retirement he sent me a few interesting varieties. One of the varieties he sent was ‘Surecrop,’ an heirloom white dent corn from Southwest Texas. In his letter he wrote, “I grew up with ‘Surecrop’ in the cotton fields of Ellis County, Texas at the time [when] soil fertility was at a low level, with invading weeds, unwanted grass, and the build-up of seedling diseases. This is 1987 seed. I finally located and planted old-time ‘Surecrop.’ In July I had a good crop inter-planted with tepary beans.”

When I read the note, I thought—wow—a corn variety that is especially good at coming with weeds! This is a good example of why we need some of these old varieties, and especially why we need to save their stories. Because of its tolerance for weeds, maybe Surecrop would be an especially good variety for no-till or minimal till agriculture. He also made the point that he inter-planted the corn with tepary beans which may have been important for increasing the yield. Perhaps we can learn something from that as well, that where possible, corn can and should be interplanted with other crops that provide a benefit to the main crop, yet at the same time provide good soil coverage.

In 1993 I had some correspondence with Powell Smith in South Carolina. He worked for the Clemson Extension Service, and he said in his first letter that he had been visiting several areas of South Carolina that were rich in colonial Black culture.

He was especially interested in searching for heirloom seed in the Sea Islands off the coast. The Sea Islands are a chain of barrier islands that during the 18th century were settled by plantation owners who imported African slaves to work the cotton, rice, and indigo fields. During the Civil War most of the plantation owners fled to the mainland. In addition, the spring and summer rains created conditions ripe for malaria and yellow fever, diseases to which the Blacks had some resistance. So as a result of these factors,

the slaves were often left in relative isolation by their white overseers and as a result, the slaves subsequently developed their own notable and distinct [Gullah/Creole](#) language, culture, herbal medicines, and cuisine. Their foodways or cuisine is a kind of mashup of West African flavors and Southern ingredients which often contain cowpeas and collards.

Mr. Smith searched for old plantation sites, and visited Black communities. As a result of his explorations he came across some heirloom beans, collards, and cowpeas. That in itself is not that unusual, but what is most interesting is that he found landraces of collards and cowpeas growing wild. Four of the seven cowpeas that he sent us, were found growing wild in old plantation sites and ditch banks of the Mt. Olive area of Horry [“Oh-ree”] City, SC. He later found by talking to folks there that these cowpeas [‘Green Sea Small Tan’] had been used as a food source by rural Black families as far back as the early 1900’s, or before. These were landraces that had been introduced from Africa by the slaves (or possibly slave traders) 200 to 300 years ago. And so they are very old varieties.

The story got a bit more interesting when I learned that the government of Ghana had contacted the USDA because it had lost some of its original landraces of cowpeas. Powell Smith became involved in a cooperative project with Clemson University, the USDA and the country of Ghana in order to improve cowpea varieties for use in West Africa. When I recently looked up this accession in my seed bank a few days ago, I noted that one of the cowpea landraces [‘Graham Speckled’] matures at 120 days, enabling it to miss the depredations of the cowpea weevil. Furthermore, it was tolerant of stink bugs. (Smith noted that it was often interplanted with corn that was spaced 3’ apart in rows spaced 4’ apart.)

When I read the accession notes, I was especially excited to re-discover the comment about its tolerance to stink bugs. At the time the cowpea was received in 1993, those comments were of general interest, but now the situation has changed. Anyone here from Pennsylvania and the mid-Atlantic is likely familiar with the Brown Marmorated Stink Bug that is an invasive species. It was first reported in Allentown, Pennsylvania in 1998 where it may have been imported from China with packing material. It has now been reported in at least 30 states. Some commercial crops, especially stone-fruits have been devastated by the invasive stink bugs, making the fruit unmarketable. And it is also a serious pest of legumes. Next year that cowpea accession comes out of the seed bank for growout. Meanwhile, this serves as a beautiful example of qualities in heirloom crops that may serve future needs.

**[4] Oral histories shift our understanding of the past,
thereby changing our present day perspectives. Such stories change the listener.
These are stories that illuminate and preserve the connections between people,
plants, and biodiversity.**

Let's look at a story that illustrates how stories shift our understanding of the past, and at the same time, changes our present day perspectives.

First I need to provide some background about the plant that will be used as a lens to examine some connections of plants to people and biodiversity. Though different crops could be used, I have selected cotton because it has a rich and colorful history, and because it is tightly woven into the social and economic fabric that is part of the history of this country.

The first time I saw cotton growing was not on a farm, but rather in the high desert of southern Arizona. I was attending a board meeting of the Seed Savers Exchange in Phoenix. During that time, board member and ethnobotanist Gary Nabhan took us out into the high desert where we saw wild chiles and wild cotton. The cotton bolls were about the size of a large pea. I marveled at how much the wild crop had been selected by humans who somehow managed to transform pea-sized cotton bolls into bolls the size of chicken eggs.

Then a few years later, in 1996, a small package arrived in the mail from Mansfield, LA. It contained seed and fibers from several bolls of naturally-colored brown cotton. I had never seen naturally-colored cotton before. Previously, I had assumed that all cotton was white, but this cotton has a distinctive copper bronze color, that turns slightly darker each time it is washed.

As I read through the letter I was surprised to discover the enclosed cotton seed was a pre-1860 heirloom, that it had a variety name, and was called 'Nankeen.' The origin of the name Nankeen was unknown, but in northern Louisiana, that variety of cotton was originally used to make slave's clothing. The enclosed letter went on to note that unlike modern hybrid cotton, it has a longer blooming cycle, grows well in poor soil and drought conditions, and hardier than modern breeds, that nothing eats the leaves, and the boll weevil doesn't attack it.

So, Nankeen cotton, was my first introduction into the world of naturally-colored cotton. Once again, a story about an heirloom plant led me into surprisingly new territory. I began to wonder if there were other natural colors of cotton, and I began to search for them. What happened to them? What genes did they have that might be useful for the improvement of modern cotton? Where could I find these? Could they be found in rural communities of the descendants of former slaves? As I began to investigate, I subsequently discovered that there were indeed records indicating that there were natural cottons in different colors, such as green, blue, yellow, and pink, each with their own subtle beauty.

In the 1990's the story took another turn when another package of naturally-colored cotton arrived in the mail, this one from Nevada, MO. It was also brown cotton, but a different shade of brown. The letter stated "that the enclosed brown cotton was from China in slave labor days, and was later imported to this country." The letter went on to say that "Slaves could grow a patch of cotton of a different color from their bosses white cotton."

Apparently, as I later learned from more than one source, slaves were not allowed to grow the same white cotton that their master grew. What was the reason for this? Presumably, white cotton was preferred by the slave masters because it could be dyed different colors and/or it had longer fibers making it easier to spin. Or another possibility is that slaves were only allowed to grow naturally-colored cotton so that the slave owners could be assured that it was not pilfered from the master's cotton. Thus it could have been a type of visual insurance policy. Or perhaps there was another reason slaves had to grow colored cotton. Maybe colored cotton was considered at the time to be of inferior quality, possibly because the colored cotton had a shorter fiber [though there is at least one exception — the now presumably extinct yellow 'Sea Island' cotton from the Sea Island region of South Carolina which was reported to have longer fibers.]

By the way—related to the story about slaves growing colored cotton—when I first introduced Nankeen cotton to the Southern Exposure catalog, here is what I wrote in a sidebar of the cultural notes. "Everyone should grow and harvest a long row of cotton at least once in their lifetime so as to understand what the plantation slaves had to endure while harvesting cotton. The bolls are borne on the plant at a back-breaking level, and the bolls are sharp. Plucking cotton from numerous bolls hurts the hands. Imagine doing this all day."

So the history of colored cotton provides some interesting historical insights. As we see, social and economic factors played a large role in controlling the distribution and location of the colored cotton genes. When slavery was abolished, Blacks were free to grow both white and colored cotton. However, because white cotton was more commercially available, there was less desire to grow colored cotton.

Remember I mentioned that the Nankeen cotton is drought resistant and relatively insect resistant. It is reported as being either not preferred, or perhaps resistant to the boll weevil. This variety deserves a close look. What other genetic treasures lay somewhere in the cotton growing areas of the deep south? The last few plants of some really interesting cotton may still be in the hands of some elderly person, somewhere in the cotton growing states, where a variety may be teetering on the brink of extinction. The following communication I received, reinforces that view.

In 1997 I acquired a naturally-colored green cotton from Erlene Melancon in Woodville, Texas. She wrote in her letter, “I see in your catalog, you have seeds of brown cotton. I have been spinning cotton for years. My grandmother loved the brown cotton for her quilts. I’m sending you some green cotton seeds. They also have blue and yellow. (...) There are two kinds of seeds. One I can spin right off the seed, because it’s hairy, the other is black and slick. Can’t spin it off the seeds. (...) I have plenty of the hairy one. Lost the black slick one this year. Texas heat kill everything but the watermelon and eggplant. It was very bad this year. About the green cotton, the sun does bleach it, especially in Texas. And once it’s spun and washed it will turn a yellowish green. I can’t seem to find the blue cotton seed. If you come across it please let me know. Sincerely, Erlene. When I introduced the cotton to the catalog, I named it ‘Erlene’s Green’ in her honor.

After I sold Southern Exposure Seed Exchange in November of 1999, I was wondering what would happen to the mission of the company. Thankfully, the wonderful people at Acorn Community have kept and expanded the original mission, and has continued to add more heirloom cottons. In addition to ‘Nankeen’ and ‘Erlene’s Green’ there are now also ‘Arkansas Green Lint,’ ‘Mississippi Brown,’ ‘Red Foliated White,’ and ‘Sea Island Brown.’ What genetic assets do these heirlooms contain? Do they have some qualities of insect and disease resistance, drought resistance, or some other qualities that we will need at some future times?

I think the story of colored cottons is a good example for illustrating the connections between plants, people, and biodiversity. Those connections are sometimes strong, sometimes fragile, and always the connections are constantly changing. The story of colored cotton helps us to better understand our past, and shift our understanding of the present, and certainly their rediscovery has led us into new territory. What would have happened to them, if we hadn’t gone looking, hadn’t published their story, hadn’t offered the first naturally-colored cotton, which then led people to look for more?

By the way, I am still involved this story. I am now in conversation with Kathleen Klump in Virginia. She is a South American textile historian who is documenting the colored cottons of Ecuador and Peru. She will be bringing back seeds of colored cottons which I will attempt to rescue along with their histories, preserve them in seed banks, and pass them along to seed companies who can help distribute these threatened varieties..

The last point is the following (a quote from Rachel Naomi Remen). She says.

**[5] All stories are full of bias and uniqueness;
they mix fact with meaning.**

This is the root of their power.

Many of you are very familiar with heirloom tomato varieties and their history, and some of you may know about ‘Radiator Charlie’s Mortgage Lifter’ tomato. I had introduced it into the Southern Exposure catalog under the name ‘Mortgage Lifter’ in 1985. It had been developed in the 1930’s by Marshall Byles, whose nickname was “Radiator Charlie,” a nickname he earned when he owned a radiator shop at the bottom of a large mountain in West Virginia. The trucks would drive up the mountain, blow their radiators, and roll back down to Charlie’s radiator shop. Anyhow, within a few years after the introduction of Charlie’s tomato, it had developed a legendary fame in West Virginia and several surrounding states. The story goes that people would drive as far as 200 miles from other states to buy his tomato plants, and that Radiator Charlie paid off the \$6,000 mortgage of his house, largely by selling the tomato plants.

A year after I introduced it into the catalog, in 1986 I walked into a computer store in Charlottesville, and the woman in the store asked me the reason for buying a computer. I told her that I had started an heirloom seed company and needed a computer for the mailing list. I went on to tell her about several heirloom tomatoes including the ‘Mortgage Lifter’ that had been developed in the 1930’s in Logan, West Virginia. She suddenly grew very excited. She said, “You need to talk to my husband. His grandfather, M.C. Byles developed that tomato!” Shortly thereafter I met her husband, and I recorded an hour-long interview with him about his grandfather, and how he had developed the tomato. He then subsequently arranged to record an interview with his grandfather, Radiator Charlie. I ended up with two hours of audio tape on the history of the ‘Mortgage Lifter’ tomato and the life of Radiator Charlie. So far, I’ve only written a fraction of the story. Some of the main points of the story have ended up on National Public Radio and also in Amy Goldman’s book *The Heirloom Tomato*.

But I want to focus on another part of the story, previously untold. In 1987, a year after introducing the ‘Mortgage Lifter’ tomato, I was threatened with legal action from someone else who had laid claim to the name ‘Mortgage Lifter’ tomato. Long story short, I engaged the services of an intellectual property lawyer in Alexandria, Virginia who suggested that I change the name until the claim could be resolved. That suggestion really rankled me as it went against my core beliefs about renaming varieties. But in this case I had to make an exception because it threatened not only my family me but also the viability of the seed company itself, and so on the attorney’s advice, I temporarily changed the name to ‘Charlie’s Pride and Joy’ for one year along with some language explaining the name change. By the next catalog season, the law firm had already determined that the legal claim was without merit, and that the name ‘Mortgage Lifter’ was by this time, now in the public domain. The firm’s findings were that no one owns the exclusive right to the name ‘Mortgage Lifter’, whether it is tomatoes, corn, or some

other vegetable. In 1988, if I recall correctly, I reverted to the name ‘Mortgage Lifter’, but also called it ‘Radiator Charlie’s Mortgage Lifter’ as a synonym along with ‘Charlie’s Pride and Joy’ (a name that was dropped the following year).

We may never know all the details of the origin of the various claims on the name ‘Mortgage Lifter’ tomato. In West Virginia, there are at least two primary claimants of the name, but they aren’t the only ones. After having reviewed the oral history of several ‘Mortgage Lifter’ tomatoes, I feel that Radiator Charlie’s story has the best documentation, but I don’t think at this point we can say with certainty how the name first was applied to a tomato.

One thing is clear. The name ‘Mortgage Lifter’ is surrounded by the power of the story. It is noteworthy, that the ‘Mortgage Lifter’ name as applied to a tomato, had its origins in the 1930’s. These were Depression-era times, and when viewed in the context of the 1930’s, it was a time when people were looking for financial security. It spoke to their desire be free of debt. For many people their main debt was their home, and if they lost their home they would have lost their sense of place and security. This much-loved tomato not only contains good flavor, it also carries the hopes and dreams of people looking for a better life.

I quickly discovered that interesting stories also sell seeds. That’s a good thing, because it is another tool for preserving genetic diversity. Many people purchased ‘Radiator Charlie’s Mortgage Lifter’ because of the interesting and powerful story associated with the tomato.

I refer to this story because it is a powerful example of the fifth point I wanted to make which is that “All stories are full of bias and uniqueness; they mix fact with meaning. This is the root of their power.”

At this point I would like to conclude by summarizing the points I’ve tried to make, which are:

- [1] Stories are just data with a soul.**
- [2] Stories provide valuable information in ways we can't predict.**
- [3] Stories often capture information that may seem insignificant in the moment, information that may become valuable at a future date.**
- [4] Oral histories shift our understanding of the past, thereby changing our present day perspectives. Stories both illuminate and preserve the connections between people, plants, and biodiversity.**
- [5] All stories are full of bias and uniqueness; they mix fact with meaning. This is the root of their power.**

For reasons described in the main points of this presentation, I believe that we need to start creating “story banks” that are associated with the seeds in our seed banks.

Before I close, I want to mention, that if you are interested in recording oral histories you should be aware of the best practices associated with recording oral histories. In my work documenting the medicinal plants of the Bahamas, I have learned a great deal about oral history techniques. I have also worked with an historical society in Virginia. We have developed a nine-page PDF document about practices, procedures, and best practices for oral histories. You can download the document from www.bushmedicine.org and some time later it was also be on my informational website on seed saving, www.savingourseeds.org

In closing I would like to read some quotes from Rachel Naomi Remen’s book, *Kitchen Table Wisdom*

“When we haven’t the time to listen to each other’s stories we seek out experts to tell us how to live. The less time we spend together at the kitchen table, the more how-to books appear in the stores and on our bookshelves. But reading such books is a very different thing than listening to someone’s lived experience. Because we have stopped listening to each other we may even have forgotten how to listen, stopped learning how to recognize meaning and fill ourselves from the ordinary events of our lives. We have become solitary, readers and watchers rather than sharers and participants.” [RNR – xxvii]

“Real stories take time. We stopped telling stories when we started to lose that sort of time, passing time, reflecting time, wondering time.”

“Stories allow us to see something familiar through new eyes. We become in that moment a guest in some one else’s life, and together with them, sit at the feet of their teacher. The meaning we may draw from someone’s story may be different from the meaning they themselves have drawn. No matter. Facts bring us to knowledge, but stories lead to wisdom.”

So in that spirit, I encourage you to go forth with your recorders and record stories. Preserve the connections between the seeds and their stewards. In doing so, you will also preserve biodiversity and enrich yourselves and this planet.

Thank you for listening to my story.

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