As American as Apple Pie. It conjures images of hearth and home. But how American are apples - and apple pie - really?

Welcome to Vintage Americana, Exploring and restoring rural American Culture. I'm your hostess, Holly. And this is episode 3 - the Appling of America. This episode may run a little long. Sorry/not sorry. I've already cut out a lot of things I could say about apples, so here we are.

Let's start in the obvious place. Johnny Appleseed. Any school child, at least of my generation, will immediately think bank to the rhythmic clicking of a projector and the opening strains of the Disney short. Where Johnny's frontiersman-style Guardian angel convinces the scrawny, quiet Johnny to head west and plant apple trees for God and fellow man.

Certainly, that's the story we all default to. Most of us picture a ragged, shoe less figure with a pot on his head and a bag of apple seeds slung around his shoulders, slinging them about as he prepares Ohio and Indiana ahead of the coming pioneers.

Which is... sort of true. John Chapman - the real Johnny Appleseed - was certainly known for being more or less impervious to weather and not infrequently going barefoot. He was a missionary, preaching the gospel as interpreted by Swedenborg. And also had enough sense of what was coming to go out and establish nurseries full of apple trees ahead of the influx of settlers. So he would make circuits through the wilderness, checking on his trees and proselytizing the settlers.

Apples were important. An orchard was an integral part of claiming a piece of land as homestead, and seedling bought from Johnny were a quick and easy way to establish such an orchard. Too, most apples at the time were used for anything from baking and drying to pressing for cider. They stored better than many other foods, and could provide something to eat through the long, cold winters. And those apple pies? Already a thing in 16th century Britain, if not before. I can find you a recipe if you'd like.

Which is all understandable enough. But lets take a brief look at apples in general and why this sudden flush of seedling trees across the frontier still redounds on us today.

Apples are frequently non self-fertile. Which is to say, they need a different kind of apple tree to polinate their blossoms and produce fruit. With the help of native bees, they

pollinate each other with wild abandon. Which means that apples are a fruit that do not grow true from seed. In other words, if you eat a HoneyCrisp apple, then plant the seeds, you will not get HoneyCrisp apples. You'll get a random apple with HoneyCrisp as one parent, and the pollen source tree as the other. Eat a hundred HoneyCrisp apples, plant all the seeds from them, and you might get one or two that produce apples of any note. The rest will range from rather mediocre and insipid to what apple folks refer to as "spitters" - apples so sour or containing so much tannin that you can't really do anything but spit it out when you take a bite.

So how do you get more HoneyCrisp apple trees? Grafting. You take a little seedling apple tree, cut off the top, and splice in a young stick from a HoneyCrisp tree. Done correctly, you can effectively create a clone of the original tree. Neat, huh? 99% of modern apple trees are produced by grafting. Take a look at the trees the next time you visit a nursery, and you can spot the place on the trunk where they were grafted.

So why then, would Johnny Appleseed and the pioneers who followed him bother putting so much time and effort into all those seedlings?

First, remember that one of the major uses for apples at the time was cider. When you're grinding up your apples, pressing them, and letting the juice ferment, it's much less necessary for those apples to taste good out of hand. In fact, the best ciders blend apples that are sweet, sour, fragrant, and possessed of high tannin content. Many famous cider apples aren't good for fresh eating.

Second, grafting is not terribly difficult, but it does require a bit of skill, a bit of time, and the ability to baby those trees until the grafts take. In the late 18th and early 19th centuries, many people considered grafted trees to be less hardy and vigorous. Seedling trees were preferred as longer lasting and more productive.

And, third, grafting requires access to scion wood - a snippet from the tree you mean to reproduce. While it's possible to carry scions long distances, over periods of time - many a variety was carried over from Europe this way - they have to be kept cool and damp. Seeds are more tolerant of travel conditions and easier to just have on hand until the right location is reached.

Sweet tasting, eating apples are not native to North America. What apples did exist here were small, sour crabs. "Dessert" apples as we know them, and even the various

cooking and storage apples originated in Central Asia. Varieties arose and were selected for different characteristics as they spread to Europe, Russia, and other places.

And all of this gave rise to the embarrassment of apple-y riches that blanketed the United States in the 19th century. At one time, over 17,000 different varieties were listed. Now, a fair few were the same variety with different names, but even at that, it's a far cry from the 90 or so commercial varieties grown today. And even farther from the dozen or less present in the average supermarket.

So what happened?

It's a story of something of a boom, and a bust. The boom can be attributed to Johnny Appleseed and other pioneers who planted seedling apple trees. Each new seedling was, effectively, a new variety. They arose from crosses between the smattering of varieties that had been brought over from Europe, as well as spontaneous crosses with native American crab apples. Over time, the very best apples were propagated by grafting. While the vast majority of them never moved more than 50 miles from it's point of origin, others became wildly popular and were offered by fruit nurseries all over.

Then, as now, nursery catalogs presented alluring pictures and descriptions. "Winter Banana" was a variety that came from Indiana and was launched to great success by Greening Brothers Nursery here in Michigan. Other varieties in the same catalog have unfamiliar names like Red Astrachan, Sweet Bough, Duchess of Oldenburg, and Alexander - but all were widely planted at the turn of the previous century.

Many of these small nurseries catered to farmstead customers and small commercial orchards. Those original seedling homestead orchards were gradually replaced with grafted varieties. If you want a glimpse into what was popular where you are, go to archive.org and search the books collection for nursery catalogs in your state. You'll find they change over time, and have a tendency to consolidate into fewer varieties repeated by the various nurseries as time goes on.

Another trend in the late 19th and early 20th centuries was the formation of national, state, and local pomological societies. In fact, the state of Michigan passed an act in 1975 to "provide for the incorporation of societies for the promotion of pomology, horticulture, and related arts." Again, it's worth visiting archive.org for some of the materials produced by these societies.

I'll link the 1876 Annual Report of the Secretary of the State Pomological Society of Michigan in the show notes, as an example. It's entertaining reading for an apple geek. The report table of contents includes a listing of the Society officers, a list of the members, a list of the officers for the Agricultural Society, the constitution and by-laws, the proceedings of the annual meeting, a financial report, a piece on ths State Fair, reports from the local meetings, a piece on the Michigan fruits displayed at the Centennial celebration, and then some educational pieces. One is entitled "Save the Forests," another discusses mutually beneficial insects and plants, and a third on using beach sand as mulch.

The report on the display at the Centennial celebration in Philedelphia state that Iowa presented 342 varieties of apples, and Indianna 189. Minnesota had a small display, rather dismissed as being "mostly crabs". This is a wild variety that would flummox most of us today.

Where did they go?

They went where quirky plants usually go, once commercial agriculture gets involved. Relegated to quiet corners of old homesteads, or falling into oblivion completely.

As early as the 1890's, it's easy to find commentary in these pomological society journals recommending against growing lots of varieties and insisting it's better for "real" orchardists to just concentrate on a few. One Michigan society proceeding mentions a gentleman who entered a fair with a wealth of different varieties that he'd grown himself and is equal parts admiration for the quality of the fruit and huffy sniffing at his failure to abide by the dictates of "science" and pare them down to just a few.

Here's where I start to get on my soap box a little bit. Agribusiness, from my perspective, has encouraged a lot of poor decision making where the breeding of plants and animals is concerned. An obsession with efficiency starts to crop up with the Victorians. And this is when we see, across the board, an emphasis on quantity, visual appeal, and shipping ability. With a concurrent loss of variety, flavor, and nutritional quality.

Apples demonstrate this to us on two fronts. The genetic bottleneck for apple varieties as grown by anybody who isn't an apple nut is one of them. Monocultures are death.

And this seems to be a lesson we can't bring ourselves to learn. For years, the various agricultural experts in both the Federal and various state governments as well as industry bodies pushed the Baldwin apples as the best choice for commercial orchards. The Baldwin was bright red, hard, small, and nearly bullet-proof for shipping. It was useful both for eating out of hand and in hard cider. For quite a long time, it was the most popular apple grown in new England. Then, a particularly harsh winter in 1933 wiped out a lot of those orchards, and they were replanted with something else.

That's a very terse, uncommunicative way of saying that lots of orchardists suffered a dramatic loss. It wasn't quite the disaster of the Irish potato famine, because man never tried to live on apples alone. But the underlying principle wasn't that different.

Nor did the orchard industry really learn from it's mistake. Baldwin has largely been supplanted by Red Delicious - which is large, red, shiny, hard, and ships well.

Do you notice that no one ever waxes rhapsodic about the flavor of a Red Delicious apple? Have you ever watched how many end up in the trash when included in a box lunch? I often wonder who, if anyone, eats Red Delicious.

It is, I suppose, only right and proper for me to give credit where credit is due, however. Red Delicious was my Grandfather's favorite apple. Which I find especially perplexing, given that his orchard was in Zone 4, and Red Delicious is known to be somewhat more flavorful when grown in warmer climates.

I do have something of a theory. While we consider grafted trees to be genetic clones of the parent, this isn't as black and white as it's sometimes presented. The first issue is graft/rootstock interaction. So let's back up just a moment and talk about the ins and outs of grafting, varieties, and rootstock selection.

When I go to graft a new apple tree - something I need to go outside and do, possibly this weekend or next - I take a small apple tree that is really no more than a couple feet tall, trim off most of it, and make a slit in the cut end. Then, I trim a piece of wood from a tree that is the variety I want to grow, and cut it down to a few inches, trimming the bottom end to a point. Then, I can slide the point into the slit on the rootstock, match up the edge, and wrap it tightly. Done correctly, the two pieces of wood will grow together into a single tree. It's both exactly as simple and considerably more complicated than that, but we'll let that stand as our basic concept of a graft.

I'm having a small crisis just now with my planned grafting because all my scion wood - the snippet of the varieties I want as apples - have show up. And I jave just realized I don't have enough root stocks.

Which might leave you wondering - where do you get rootstocks? There are a few options.

The first is to simply plant apple seeds, and then use the seedling as root stocks. It's easy, cheap to free, and has the advantage of avoiding the whole mess of genetic patents. Don't worry, I'll rant on that topic later, too.

People who prefer seedling rootstocks will often buy seeds from some of the Russian varieties of trees that are more or less true from seed. They're very cold hard, take most grafts without trouble, and yield a full size apple tree.

The other main option is to purchase root stocks. Most purchased root stocks are clones of varieties of apples specially developed for the purpose. And the root stock you choose can have a profound effect on the apple tree you get. Now, you might be wondering how these rootstocks are produced, if they are not seedlings. Good catch! Obviously, they're not grafted, because that would require.. a rootstock! But they are also a form of clonal repoduction - allowing suckers to spring up from the roots of the parent, layering them to allow them to root, and then cutting them free to be planted independently.

The first aspect of root stock effect is size. There are "standard" root stocks, which give you a tree the same size as one that has been grown from seed. If you can still find an old orchard in your neck of the woods, a lot of them may be standard sized trees. They're usually pruned into a large, spreading mass of horizontal branches. This makes for both easier picking and better air flow so that trees and apples all get more sun, reducing fungal problems among other things. Standard trees often take up to 7 years to start bearing apples.

Then there are the "dwarfing" rootstocks. Some rootstocks effectively restrict the growth of the tree to as little as 25% of the size of a seedling-grown tree. These were developed for use in smaller spaces. That COULD be a suburban back yard. But it could also be a commercial orchard that wants to devote a small area to a variety that

doesn't sell well enough to devote a lot of resources to, but might be a good U-pick option to diversify a little bit. Dwarfing root stocks are also often what we call "precocious", starting to bear fruit as early as 3-4 years after planting. And I'm sure you can see where this would be a major advantage when making an investment in new trees as an orchard. The sooner that investment starts to pay for itself, the better. The downside to dwarf trees is that they tend to also have

In between are the "semi-dwarf" or "semi-standard" rootstocks. These produce a tree somewhere between a standard and a dwarf - which is probably somewhat obvious. The exact size depends on the rootstock itself and the variety grafted to it. These trees usually also bear sooner than a standard tree, but are more stable than a dwarf.

Another factor of rootstocks is disease resistance. Now, a rootstock can't confer magical immunity onto a variety known to have problems, but it can make an orchardist's life easier. If fireblight or woolly aphids are an issue in my region, I'm probably going to choose a resistant rootstock, especially if I want to minimize spraying or other maintenance.

The last rootstock factor that usually gets discussed is hardiness. Here in the Great White North, I want something that is cold hardy. Someone with heavy clay ground may look for a rootstock that's tolerant of wet, heavy soil. Another grower might prefer one tolerant of sand and drought conditions.

What doesn't get talked about is the effect on the flavor of the apple conferred by choice of rootstocks. And if you ask most of the commerical apple people, they'll brush off the idea as negligible at best. But, as far back as the 1850's, there are articles written that comment on the flavor of specific varieties as grown on different rootstocks sometimes being profoundly different. One variety might be excellent on one stock and rather insipid and flavorlous on another.

It's entirely possible that even the much-maligned Red Delicious tastes better on the right rootstock. Sadly, I can't tell you if Grandpa's apples were better than average. I already knew with the certainty of a 10 year old that I didn't like Red Delicious and generally opted to instead go for one of his MacIntosh or Snow apples.

The other possible factor in the flavor of apples as sold now versus what they may have tasted like in the past is that of genetic drift. Genes are not static. Yes, that grafted tree

is technically a clone. But every cell in it has the potential to mutate. Which is where we get bud sports.

I hope you're not all tired of the botany lesson yet. Because we're going to briefly talk about bud sports. Every apple tree grows new branches every year from buds on larger branches. Sometimes, there has been a mutation in one of these buds, causing the apples on it to be visibly different - a different color, larger fruit, and so on. An observant orchardist will often use this branch to graft a new tree, and a new variety might be launched. Ruby Mac was a redder sport of MacIntosh. Blondee is an entirely yellow sport of Gala, retaining it's parent's sweetness with none of the tartness.

Gale Gala is a sport of Gala that tastes like the original, but the entire tree ripens at once, making it less labor-intensive for commercial growers.

Now, these are the mutations that are dramatic enough for us to notice. But it's very likely that tiny mutations happen all the time and may change the flavor of an apple as it passes through more and more generations. Some commerical nurseries are aware of this, and keep back a "mother" tree to graft from to try to minimize this effect.

Could it be that the ubiquitous Red Delicious has undergone selective pressure for it's ease of production for the grower for such a long period of time that whatever flavor characteristics it once had have been lost?

All of this underscores why it's so important to maintain old varieties. They may hold traits for resistance to disease that are not currently large scale problems. They DO hold genes for other flavor compounds largely absent from the limited range of varieties that make up the commerical apple crop. America's wealth of apple varieties gives us a wide and deep gene pool to draw from, whether for personal pleasure or for the creation of new varieties. It's important to maintain it.

Let's go back and talk a little about the production and marketing of both apple varieties and trees. We'll hit both the apples in your supermarket and the trees at the big box home improvement stores, and I'm going to try to show you another way when we're done.

We'll start with apples for the consumer. I saw my first ever apple billboard this weekend. I admit to being a little shocked. Now, I'm used to the occasional little

"Michigan Apple Producer's" billboard on country highways and biways in the fall. A little prod to stop at that next orchard up the road is all in good marketing. But I think we're only just now starting to hit individual varieties with huge marketing budgets. Where does that come from, and why?

Go visit your local supermarket. You may notice that, in addition to the familiar Fuji, Gala, and Pink Lady, there are new varieties being trumpeted. Rave! First Kiss! Ruby Frost! Cosmic Crisp!
There are, currently, two major sources for these new introductions. The first are the breeding programs at a few Universities that have chosen to pour a lot of resources into apple development. University of Minnesota, Cornell, and Washington State are among the major players. The other are commercial grower associations. The Midwest Apple Improvement Association, for instance, markets the EverCrisp.

Creating a new variety involves quite a lot of time and effort. Parent varieties are selected, blossoms hand polinated, and the resulting seeds planted out in nursery rows. Once those trees get old enough to bear, the apples are sampled and probably 95% or more are rejected. The remaining trees then move on to testing in larger numbers. At this stage, it's not just the flavor of the apple that matters, but also its disease resistance, growth habits, ripening time, and handling characteristics. The best of the best get tested out even more widely. And, once a likely "winner" is found, it's patented.

Here's where the real fun starts. The owner of that patent sets parameters for the growth and sale of that apple variety. Anyone who wants to grow it pays a per tree or per acre fee, and then continues to pay fees based on how many acres or trees they produce and sell each year. The apples sold must also meet certain quality guidelines. SweeTangos, for instance, have to be a certain size and quality to be sold AS SweeTangos. Although I've scored an occasional undersized apples from local orchards that can't be marketed under the name - but sometimes tasted better. In return for these fees, the grower accrues the advantages of a variety being aggressively marketed by the patent-holder. All those fees go to promote the variety. And likely into development of the next big apple.

What this is starting to do is drive a new format for apple orchards. Gone are the huge, spreading trees. They are replaced by rows of dwarf or semidwarf trees pruned into a single trunk with a few smaller branches, held up by large poles strung with wires. These trees can be planted much more densely, come to bear much more quickly, and

are easier to pick mechanically. They're also easier to tear out and replace when the next variety replaces the current fad.

Everybody wants to bring the "next HoneyCrisp" to market. The popularity of the HoneyCrisp already drove many an orchard to convert a portion of their land to that variety because that's the only apple name a lot of people seem to know these days. I can't help but wonder if they're starting to dread the Next Big Thing, and having to make the decision to pull out HoneyCrisp in favor of it's eventual successor.
The other rule that is attached to any patented apple variety is that it cannot be propagated for as long as the patent is in effect. Which means that no one but the patent owner (and anyone licensed BY that patent owner) can create new trees.

What that means for you is that running down to the big box store and buying your own Honey Crisp tree didn't get you out of that Patent Apple Loop. While you don't have to write a check to the University of Minnesota every year, the producer of that tree DID pay a Royalty - and so did you in the price of the tree. Nor can you give a snippet of wood to a friend to graft into his own tree.

I should note here that I'm sort of putting all of the blame on the HoneyCrisp here, somewhat unfairly. First, I'm not sure it's still under patent, I haven't really checked recently. Once the patent expires, it's like a book that's in the public domain and can be freely copied. Second, there were patented varieties before HoneyCrisp and now they're coming in a flood. It's just that the HoneyCrisp was the first variety of such intense popularity since the practice of charging royalties for apples really started that really forced the issue for a lot of small growers. Lots of people will bypass an orchard that doesn't offer HoneyCrisp in favor of one that does.

And we probably ought to circle back to those rootstocks. Guess what else are patented? Yep! New rootstocks are also patented. Royalties on rootstocks aren't used as much for promotion as they are for testing and development, as well as support of the program that creates them. But you are still prohibited from allowing a patented rootstock to sucker, and using those suckers as rootstocks for new trees, for as long as the patent holds.

What this means to the average backyard orchardist is that you're going to be paying a little money from every tree you plant to the developer of the rootstock and variety, if it's under patent, and the grafter and grower of the tree. Which, when you think about it, is

why good quality trees cost what they do. (Fun fact: the trees on the sidewalk at the big box stores are not quality stock)

I don't have anything inherently against this, so long as you know what you're doing and who it's benefiting.

I have a bit of a philosophical issue with the way that apple development has gone in the last 50 years, in large part because it emphasizes "The Next Honey Crisp." All effort has gone to zing up the next big commercial thing. And, yes, I get that this is where the money is, and it could be - often is - argued that this benefits the most people.
Let me turn the page on that and show you the other side, where I tend to land. In the current system of development, lots of varieties are discarded that might have been excellent - somewhere other than the commercial orchard world. Varieties that ripen slowly across the tree are a pain for agribusiness, but very handy on a farmstead tree, where you might not want to make 40 quarts of applesauce in a single afternoon. Trees that do well in the cold midwest, but not so much as you edge toward the Mason Dixon line lack "broad appeal." So they get tossed on the discard pile, even if they might have done exceedingly well for people who are looking for cold hardiness. Even delicious varieties that don't fit the HoneyCrisp profile get tossed aside.

Two things happen, here. First, the genetic bottleneck that's been an ongoing problem for the last 50 years or more becomes even more aggressive. Second, many of these development programs are run by Morrill Act, land grand universities - whose mission is, in part, to improve the lives of their rural residents. Focusing all their effort on industry fails that mission. And that's without even getting into the ethical issues involved in the patenting of biological entities.

Apples with their own marketing departments and PR agents are just another part of the homogenization of American culture. Try them all out. Then seek out heritage varieties from local orchards. Ask vendors at farmer's markets what ELSE they have - sometimes off on the corner of the table of Honeycrisps is a basket of something more interesting. Explore.

If you have room for some apple trees, think about planting heirloom varieties. I can recommend Trees of Antiquity and Maple Valley Orchards as good sources of a wide variety. There are LOTS and LOTS of others. Shop around!

If you are even more adventurous, consider learning to graft. There are so many more varieties available to the willing grafter than are available as trees. Plus, you can choose a rootstock to suit your climate and conditions. It's mostly past the point in the year to do this right now - everybody is sold out - but now IS a good time to start doing some research. Check out your local extension service for advice on rootstock, then start shopping. For varieties, Maple Valley is a good source, again. As well as Fedco Trees. Both also sell rootstocks. If you are feeling even braver, some of the heritage orchards around the country will send you scionwood. The Temperate Orchard Conservancy in Oregon has something like 3000 varieties available. And the USDA test station in Geneva, NY also provides scion wood from their equally large collection. Geneva doesn't charge, as they promote the use of their genetic material for research and preservation. But if you use the service, please do consider sending them a check so they can continue to do their work. Now, Geneva didn't offer scionwood this year, because they had an outbreak of fireblight. So don't bank on availability next year, either. Private orchards are another good source of unusual things. Join the North America Scion Exchange group on Facebook, or the Growing Fruit.org forum. Both sites are active for trading scion wood as well as sources of information on other places to look.

And if you are both extra-adventuresome AND super patient, there is no reason in the world why you and I can't breed our own apples. All it takes is one tree that will produce the apples, pollen from another tree, and a little know-how. If you have some trees already, you're half-way there. Go watch some of the apple breeding videos on SkillCult. He even offers pollen from his trees for sale, when it's available. For that matter, you can also order pollen from Geneva - and they might be more willing to fill those requests, even with the fireblight issue.

Rural America used to be awash in a red-gold-and-green jeweled crown of apples. Dad talks about plucking apples off a seedling tree growing alone in a field while on a horseback ride. Today Industrial food tries to fob off mealy, insipid Red Delicious as an acceptable substitute.

Me? I just got my order of scion wood from the Temperate Orchard Conservancy. This year I got Buttermilk, Shiawasee, Gideson Sweet, Raspberry, Princess Louise, and Swaar. And they threw in a stick of Baldwin as a bonus. I view this as a kind, sweet gesture that is slightly tinged with irony. Poor Baldwin. From the most popular variety of apple in the Northeast to an "heirloom" included in my order as another excellent, old variety that

doesn't get enough love.

That means it's probably time for me to go heat my grafting wax, find my knife, and head outside to graft some apples.

Are you coming?