



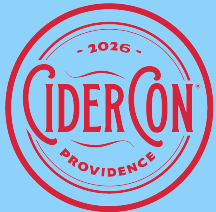
History of Apple Culture in the United States

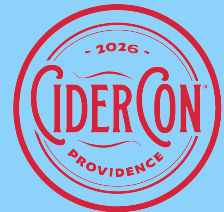
Gidon Coll



Agenda

- Seedling Orchards and the Establishment of Apple Genetic Diversity
- The Golden Age of Pomology
- The Transition to Large-Scale Orcharding and the Decline in Apple Varieties
- The Rise of Red and Golden Delicious

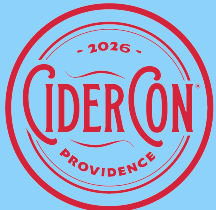




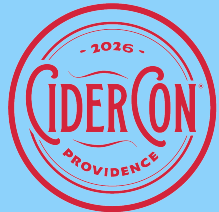
Northern Spy Monument - East Bloomfield, NY



"The Northern Spy is the best apple ever grown in the United States." Fred Lape, Apples & Man, 1979



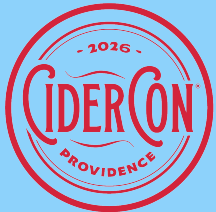
April 4, 1964 — Northern Spy Commemorative Planting
Dr. Roger Way, Geneva Experiment Station





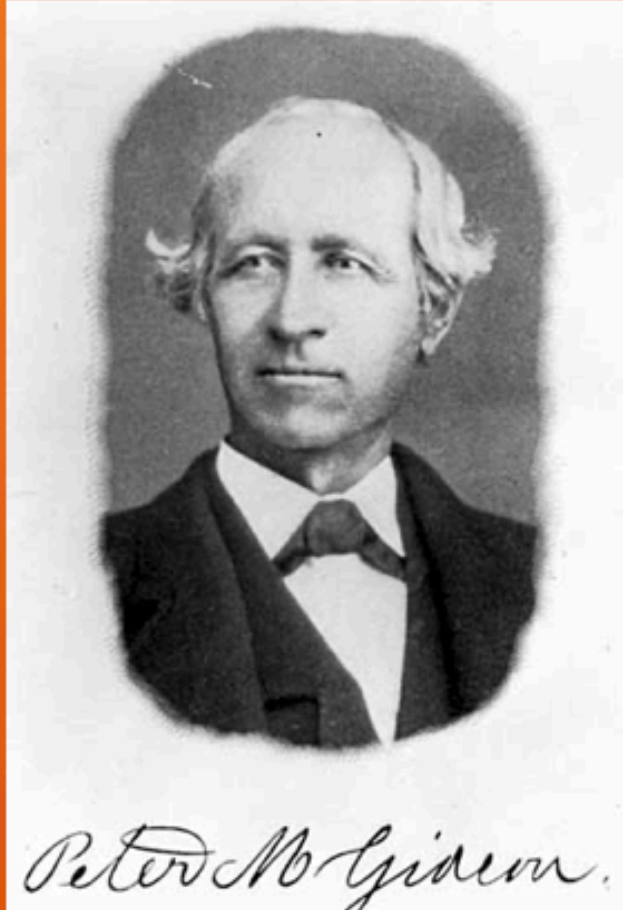
Baldwin Apple

- **Wilmington, MA**
- **Erected in 1895 by the Rumford Historical Association**



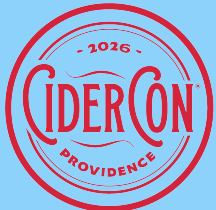
Peter Gideon and the Wealthy Apple

(Mr. Gideon's Farmhouse in Minnesota)



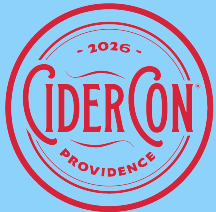
2024/25 U.S. Apple Production Forecast (42lbs)

Variety	Production (Bushels) 000's	Percentage of Total Production
Gala	48,283	17.1%
Red Delicious	34,622	12.3%
Granny Smith	28,252	10.0%
Honeycrisp	27,744	9.8%
Fuji	26,591	9.4%
Golden Delicious	20,490	7.3%
Cosmic Crisp	16,265	5.8%
Pink Lady	14,928	5.3%
Rome	8,697	3.1%
Envy	6,405	2.3%
IdaRed	5,477	1.9%
McIntosh	4,900	1.7%
Total U.S. Production	282,243	Top 12 Varieties represent 86% of U.S. Production



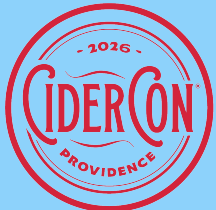
Most Popular U.S. Apple Varieties in 1910

Ranking	Apple Variety	Year of Origin
1	Baldwin	1750
2	Ben Davis	1800
3	Jonathan	1829
4	Northern Spy	1800
5	Rhode Island Greening	1650
6	Roxbury Russet	1650
7	Winesap	1817
8	King of Tompkins County	1806
9	Newtown Pippin	1750
10	York Imperial	1830



Most Popular U.S. Apple Varieties in 1942

Ranking	Apple Variety	Year of Origin
1	Red Delicious	1921
2	Jonathan	1829
3	McIntosh	1800
4	Rome Beauty	1848
5	York Imperial	1830
6	Stayman Winesap	1849
7	Northern Spy	1800
8	Rhode Island Greening	1650
9	Newtown Pippin	1750
10	Grimes Golden	1804





HUDSON'S
GOLDEN GEM



FROSTBITE



PITMASTON
PINEAPPLE



API
ETOILE



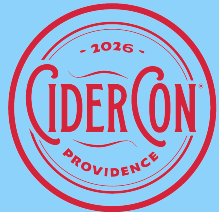
KANDIL
SINAP



KNOBBED
RUSSET



USDA Orchard, Geneva, New York



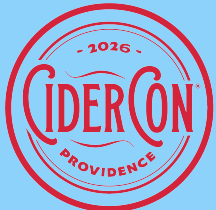
Four Periods in the History of U.S. Apple Culture

1600s-1804 - Apple trees grown mostly from seed and used predominantly for cider production and livestock feed. Advancements in horticulture were comparatively slow.

1805-1905 - The Golden Age of the U.S. Apple Industry. Grafting becomes widespread. Unparalleled interest in fruit varieties. Development of Horticultural societies.

1906-1945 - Commercialization of the U.S. Apple Industry. Reduction in the number of apple varieties grown.

1946- Present - The dominance of high-density dwarf orchard systems and continued narrowing of commercially grown apple varieties.



U.S. Horticulture 1600's - 1800's



- Some of the earliest foreign plants introduced to reshape the New World's landscape were fruit trees, carried across the Atlantic as seeds by European settlers.
- The movement of seeds closely tracked the outward expansion of European settlement.
- By propagating apples from seed, settlers generated an abundance of new varieties, creating a veritable "Garden of Eden" of fruit.

Apple Genome



- In 2010, an international team of 85 scientists decoded the genome of the Golden Delicious apple.
- The study identified **17 pairs of chromosomes** and approximately **57,000 genes**, the highest number reported for any plant genome studied to date and substantially more than the human genome (approximately 30,000 genes).

Establishment of Apple Diversity

- By planting thousands of seeds within any given town or county, settlers eventually identified apple varieties well suited to their local microclimates.
- Wealthy landowners established some of the earliest horticultural research stations.
- William Fitzhugh of Westmoreland County, Virginia, planted approximately 2,500 apple trees, most of them grafted.



Advertisements and Newspapers as Sources of Information 1600s - 1800s

12 Grafted Apple Trees
Given FREE!

Four Grand Varieties, including
Three Genuine Delicious,
3 Stayman Winesap, 3 Jonathan and 3 Wealthy.
FARM HOME \$1.00 and the Twelve Grafted Apple Trees Free!

THESE TREES are genuine grafted trees, propagated from the finest stock and raised by the best growers with one of the highest reputations in the country for a variety of their grafted trees for our customers, and are worth the most valuable. Grafted trees show a large amount of fruit, these twelve trees will bear a good crop and be healthy and strong.

ASK YOUR WIFE what she thinks of these trees and the whole family will be in favor of them. The women love the sight of fruit, and these apples are so good, so sweet and so healthy, they will be sure to like them. It is worth the price of all the other trees in the market.

EARLY MATURING TREES will be ready for fruit in the fall, and will be a great help to the farmer in getting his crop in. These trees are so good, so sweet and so healthy, they will be a great help to the farmer in getting his crop in.

COMPLETE INSTRUCTIONS will be sent with the trees, and will be a great help to the farmer in getting his crop in.

THIS OFFER is a great one, and will be a great help to the farmer in getting his crop in.

THE FARM HOME,
Springfield, Ill.
Enclosed find \$1.00, for which extend my subscription to The Farm Home for 3 years, and send the twelve apple trees in a package, free of charge.

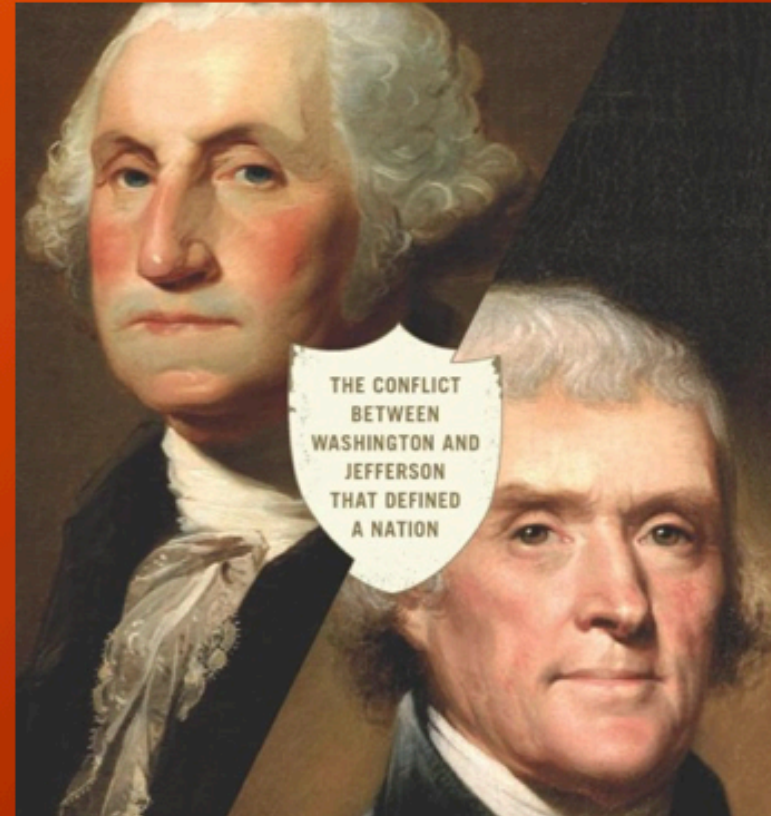
Name _____
P. O. No. _____

The Farm Home
SPRINGFIELD, ILL.

- In 1724, Hugh Jones, a professor at the College of William and Mary, wrote that apple trees raised from seed, when well managed, produced cider “not much inferior to that of Herefordshire,” though he noted that it was rarely aged properly.

Washington and Jefferson

- Some of the most comprehensive accounts of Southern horticulture in the post-Revolutionary period appear in the diaries and garden books of George Washington and Thomas Jefferson.
- Both men lived on and worked the land, remaining deeply engaged in its cultivation.
- Washington and Jefferson meticulously recorded planting dates, crop varieties, and agricultural successes and failures.
- Washington began grafting apple trees at approximately 28 years of age.
- Jefferson famously focused on four apple varieties: Newtown Pippin, Esopus Spitzenburg, Hewes Crab, and Taliaferro (pronounced *Toliver*).

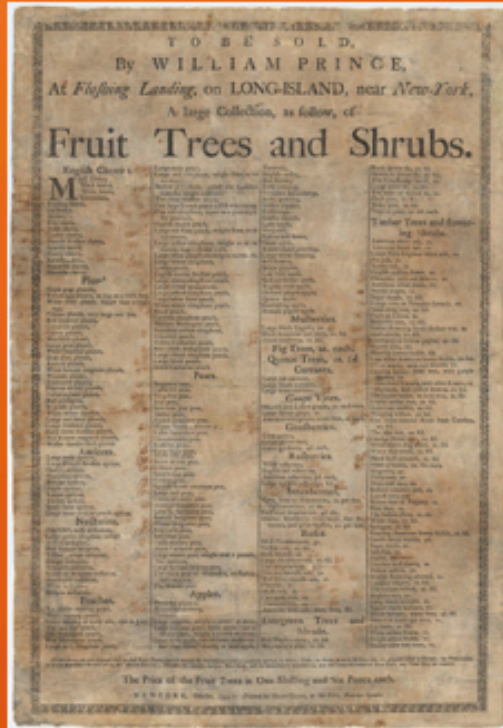


Nursery Catalogs as Sources of Information



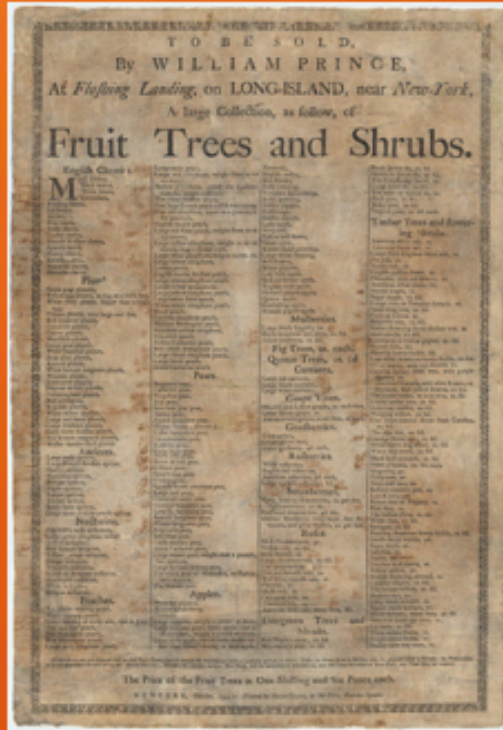
- Nursery catalogs offer an important primary source for understanding the history of U.S. fruit growing.
- Cornell University holds more than **134,000 nursery catalog items**, second only to the National Agricultural Library in size and scope.
- These catalogs serve as a record of plant introductions and commercial offerings, collectively painting a picture of horticulture during their time.
- Ethel Zoe Bailey, daughter of Liberty Hyde Bailey, curated the collection for more than 70 years. The Massachusetts Horticultural Society awarded her a medal in 1967 in recognition of her work.

William Prince Nursery Catalog



- The first commercially significant nursery in the United States was established by Robert Prince of Flushing, New York, in 1737.
- The Prince Nursery operated for more than 125 years, until 1865, under four generations of the Prince family.
- The earliest known advertisement for the nursery dates to September 21, 1767.
- The nursery catalogs issued between 1771 and 1850 constitute some of the most important horticultural literature of the period.

William Prince Nursery Catalog



- The Prince Nursery imported cultivated apple varieties from Europe, propagated them, and sold them to middle-class and wealthy landowners, including George Washington and Thomas Jefferson.
- The Prince Nursery also exported American apple varieties to Europe. So respected was the nursery that, during the War of Independence, it was reportedly protected by the British.
- **1830** marked a turning point in U.S. horticultural history: for the first time, the Prince Nursery offered as many American apple varieties for sale as European ones. (*Fruitful Legacy* p.50)

1823 William Prince Nursery Catalog

(16)

85 Jersey greening	<i>ripe from</i> November to June.	
86 English golden pippin	do	
87 Priestly, P	December to April.	
88 Moore's sweeting	} <i>These apples have been pre- served sound above a year,</i>	December to June.
89 Green everlasting		
90 Red everlasting		
91 Boston russeting, Rox- bury russeting		
92 Green Newtown pippin.	<i>This apple is considered un- rivalled; none stands higher as a table fruit, and no cider is superior to what is made of it, when the fruit is well ripened,</i>	C
93 Yellow Newtown pippin, C P		do
94 Carthouse, or Gilpin, C	January to May.	do
95 Redling		do
96 Tewksbury blush	January to July.	

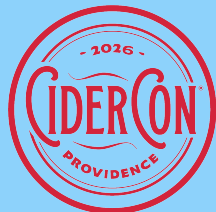
CIDER APPLES.

T denotes those that are good table fruit also.

P ——— those that are best for preserving.

97 Wetherill's white sweeting, T	<i>ripe in</i> September.	
98 Powshon	September and October.	
99 Hagloe crab, P	September to November.	
100 Greyhouse, T	October and November.	
101 Fort Magee crab, P	do	
102 Sweet scented crab, P	do	
103 Hughes' Virginia crab	do	
104 Gloucester white, of Virginia, T	do	
105 Cann	do	
106 Graniwinkle	do	
107 Roane's white crab	October to January.	
108 Styre	do	
109 Winesap, T	do	
110 Campfield, or Newark sweeting	do	
111 Pumpkin sweeting	October to February.	
112 Herefordshire red streak, P	November to February.	
113 Cooper's russeting, T P	November to March.	
114 Harrison's Newark	do	

Select kinds of Apples are propagated on Paradise stocks for
Dwarfs or Espaliers.

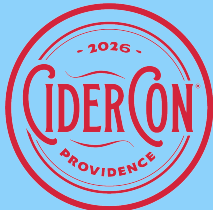


1844 William Prince Nursery Catalog

APPLES OF REJECTED VARIETIES.

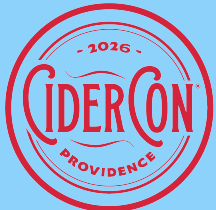
These have been rejected from cultivation after being tested by the Horticultural Society of London, by Robert Manning, or by ourselves, in consequence of their bad quality, or defective fruit, or for their diminutive size, or bad bearing. Some varieties esteemed in England are so diminutive as to be deemed worthless here.

American French Cr ab.	Franklin' Golden Pippin.	Red Calville.
Aunt's Apple.	Franklin Pippin.	Red Spice.
Beachamwell.	Gardner Sweeting.	Red Winter Nonsuch.
Black Gilliflower.	Golden Pippin (English).	Reinette Grise.
Bringewood Pippin.	Grand Suchem.	Roman Stem.
Braddick's Nonpareil.	Green Everlasting.	Ross Nonpareil.
Calville rouge de Micoud.	Green Nonpareil.	Sam Young.
Catline, or Gregson.	Kaighn's Spitzenberg.	Sapson.
Christie's Pippin.	Longville's Kernel.	Sykehouse Russet.
Delaware or Trumpington.	Lady Finger.	Sweeny Nonpareil.
Dutch Codlin.	Marquis.	Sweet Russet (English).
Early Wax.	Martin Nonpareil.	Tart Bough.
Fearn's Pippin.	Marygold.	White Juncating.
Fenouillet Gris.	Noble Pippin, or Pepin Noble.	White Calville.
----- Jaune.	Padley's Pippin.	Wyken Pippin.
----- Rouge.	Pigeon or Jerusalem.	White Paradise.
Forman's Crew.	Red Everlasting.	



Golden Age of American Pomology

- The 19th century is widely regarded as the Golden Age of Pomology.
- During this period, journals reviewed new apple varieties with the same fervor that newspapers and magazines devote today to new music and films.¹
- This era was marked by the growth of horticultural societies, which played a central role in disseminating information to growers.
- At the height of the Golden Age, the United States boasted as many as 17,000 named apple varieties.
- With this extraordinary diversity came significant challenges.
- As noted in *The American Gardener's Magazine* (1836): “There is perhaps no branch of horticulture which needs so much correction as (fruit growing).”
- ¹A Curious Tale :The Apple in North America by Tim Henley



A View of the Cultivation of Fruit Trees - 1817

by William Coxe

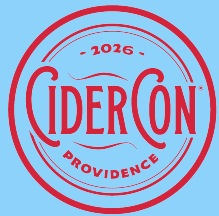
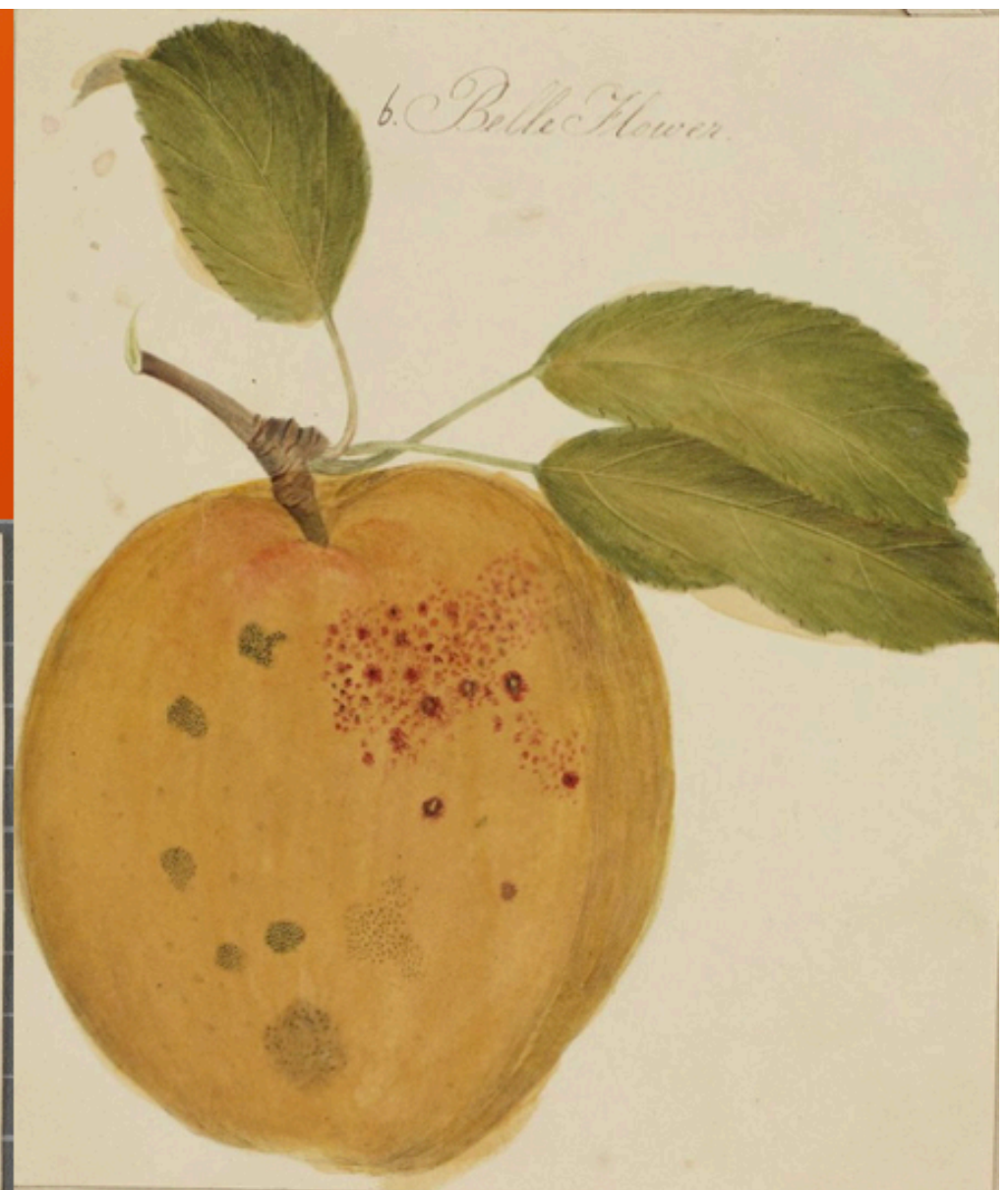


- The first book devoted to pomology published in the United States.
- In 1817, Coxe noted that he had been “for many years actively engaged in the rearing, planting, and cultivating of fruit trees on a scale more extensive than had been attempted by any other individual in this country.”
- Includes nine chapters devoted to the making and preservation of cider.
- One chapter devoted to the fermentation of the Hewes’ Crab apple.
- One hundred of the “most estimable apples cultivated in our country” are described.
- The first book to distinguish between the Green and Yellow Newtown Pippin.

Watercolors from unpublished 2nd edition A View of the Cultivation of Fruit Trees

art by: Elizabeth Coxe McMurtrie

*flyspeck, bitter rot and apple scab



Newtown Pippin



*A Newtown Pippin tree in Newtown, NY
About 150 years old, in 1902*

- The Newtown Pippin was discovered in Queens, New York in 1740, in what is now Broadway and 45th Avenue.
- The first transatlantic shipment of apples to be recorded was that of Benjamin Franklin, when he had barrels of Newtown Pippins shipped to him in London in 1759.
- The apple matures in flavor after harvest.
- The original tree died from excess cutting in 1805.

Newtown Pippin - Terroir



*A Newtown Pippin tree in Newtown, NY
About 150 years old, in 1902*

- Demand for Newtown Pippin grafts soon arose in England; however, repeated attempts to cultivate the variety at the **London Horticultural Society** proved unsuccessful.
- The variety is notably exacting in its soil and climatic requirements and reaches full expression only in a limited number of regions.
- The Green and Yellow Newtown Pippins when grown side by side in Geneva, NY
- Single Varietal on menu 1880 Albany, NY

The Apple King - Robert Pell



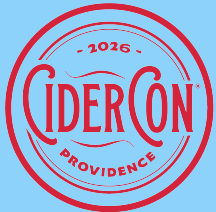
- **Robert Pell** owned an orchard in **Esopus, New York**, widely regarded at the time as the largest apple orchard in the world.
- The majority of Pell's apples were exported to **London**, where they commanded prices of up to \$21 per barrel, compared with approximately \$6 per barrel in New York. At such prices, Pell's orchard was said to be financially equivalent to fields of gold.
- Pell was a highly educated and accomplished orchardist. While many growers of the period found the Newtown Pippin to be a biennial bearer, Pell employed careful pruning and thinning practices to achieve a consistent and abundant annual crop.

The Fruits and Fruit Trees of America

(by Andrew Jackson Downing and Charles Downing)

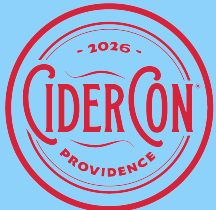


- *First published in 1845, The Fruits and Fruit Trees of America was probably more influential than any other book on American pomology in extending the love of fruits and the knowledge of varieties.*
- *“Fine fruit is the flower of commodities. It is the most perfect union of the useful and the beautiful that the earth knows.” - A. J. Downing*
- *The book appeared during a transitional period, as American orchards shifted from primarily cider production toward the cultivation of table fruit for a broader public.*
- *It became the most widely read horticultural book of the 19th century in the United States.*
- *Notably, only two Southern apple varieties were listed.*
- *Andrew Jackson Downing is regarded as the father of American landscape architecture and the key intellectual influence behind the creation of Central Park.*



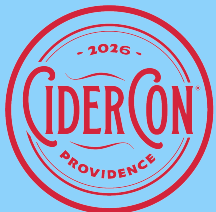
Names of Apples

- **Aromatic Carolina**, *Pomaria, S. Carolina*
- **Better than Good**, *original uncertain*
- **Betsy's Fancy**, *original uncertain*
- **Black Coal**, *unlisted*
- **Buff**, *original uncertain*
- **Fall Queen of Kentucky**, *original uncertain*
- **Grandfather**, *unlisted*
- **Green Cheese**, *Tennessee*
- **Melt in the Mouth**, *Chester Co, PA*
- **Monk's Favourite**, *Randolph Co, Indiana*
- **Mouse Apple**, *Ulster Co, New York*
- **Trader's Fancy**, *Washington Co, PA*
- **Cake Apple**, *Connecticut*
- **Cash Sweet**, *unlisted*
- **Old Field**, *unlisted*
- **Turn Off Lane**, *Salem, NJ*
- **Victuals and Drink**, *Newark, NJ*



U.S. Horticultural Societies

- The formation of horticultural societies was among the most significant developments in American agriculture.
- The **New York Horticultural Society**, founded in 1818, was the first horticultural society in the United States.
- During the early 19th century, state horticultural societies emerged across major fruit-growing regions, accelerating the spread of improved varieties and cultivation methods.
- Founded in 1829, the **Massachusetts Horticultural Society** became the most influential of these organizations. Through its gardens, exhibitions, and library, Boston emerged as the intellectual center of American horticulture.
- In 1835, the Society facilitated the introduction of four Russian apple varieties—**Duchess of Oldenburg**, **Alexander**, **Tetofsky**, and **Red Astrachan**—via the London Horticultural Society.



**1852 American Pomological Society
Meeting in Philadelphia, PA**

Charles Downing, Newburgh, NY - 120 apple varieties

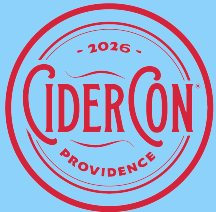
Ellwanger & Barry, Rochester, NY - 30 apple varieties

Parsons & Co Flushing, Long Island - 78 apple varieties

E.G. Studley Claverack, Columbia county, NY - 17 apple varieties

Hon. Marshall P. Wilder Boston, MA - 200 pear varieties

The Wilder Medal



Seneca and Cherokee Seedling Orchards

**The Apples of New York* recorded two very old apple trees near the Geneva Experiment Station, described as living examples of seedling apples once commonly grown in Seneca villages of western New York prior to the Sullivan-Clinton Campaign.

**Old Southern Apples* notes that several of the South's finest winter apples were of Cherokee origin, often discovered in abandoned Cherokee orchards.

*Two influential southern pomologists—Jarvis Van Buren (Gloaming Nursery) and Silas McDowell—explored former Cherokee orchard sites, identifying and propagating superior seedling varieties.

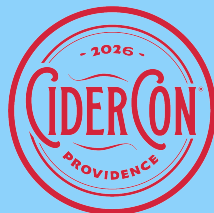
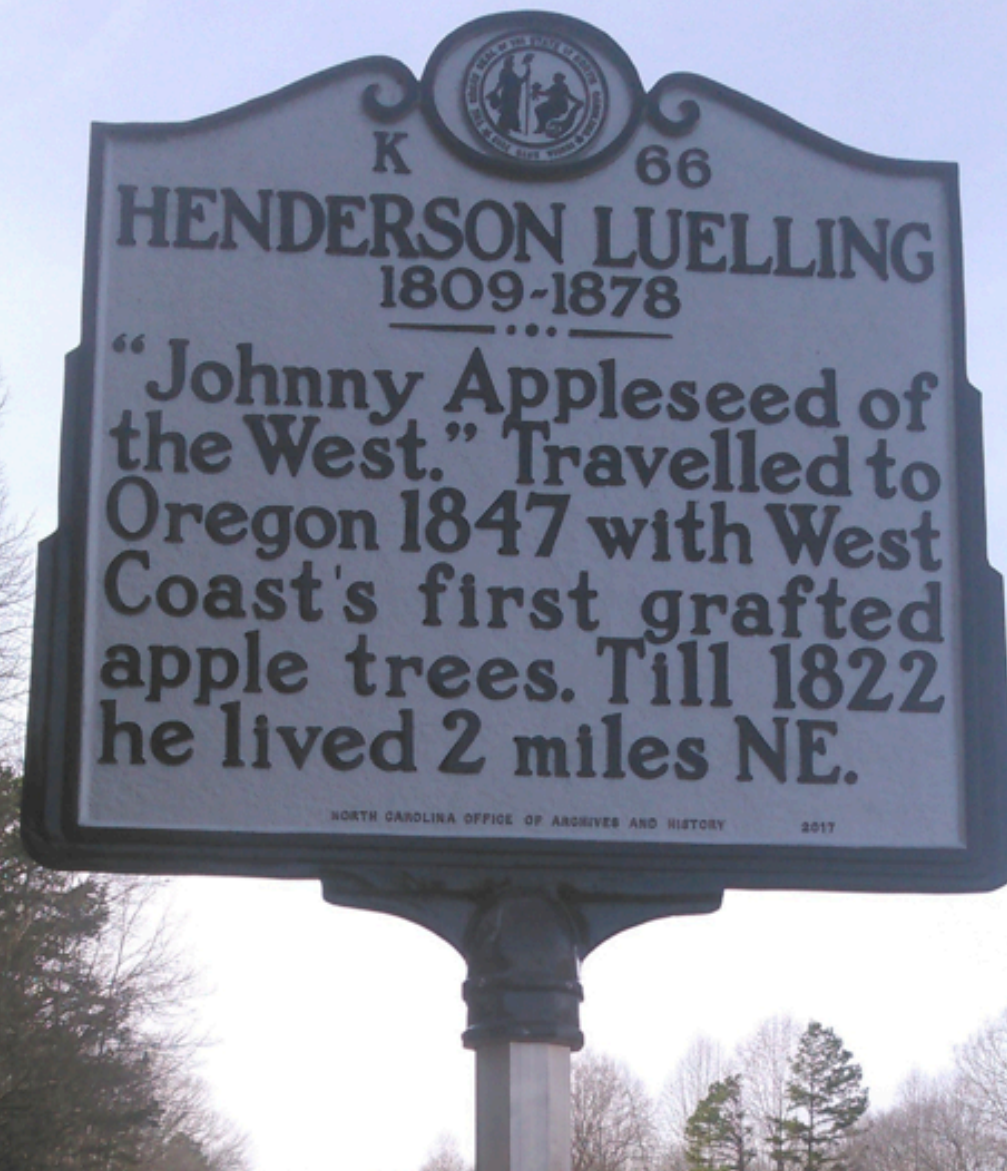
*One of the most notable apples of Cherokee origin was Nickajack.



Henderson Lewelling

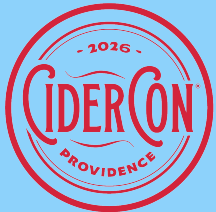
Traveling Nursery

- In 1847, Henderson Lewelling transported approximately 700 grafted apple trees via the Oregon Trail from Iowa to Oregon.
- Historian George Himes remarked, “No other early settler did more for the wealth of Oregon than Henderson Lewelling and his traveling nursery.”
- In the 1850s, a boom in Northwestern fruit growing followed. A writer in *The Horticulturist* observed that by this time, more attention was being paid to fruit growing in Oregon than in any other state in the Union.
- By the 1920s, Washington State had become the largest apple-producing state in the United States.

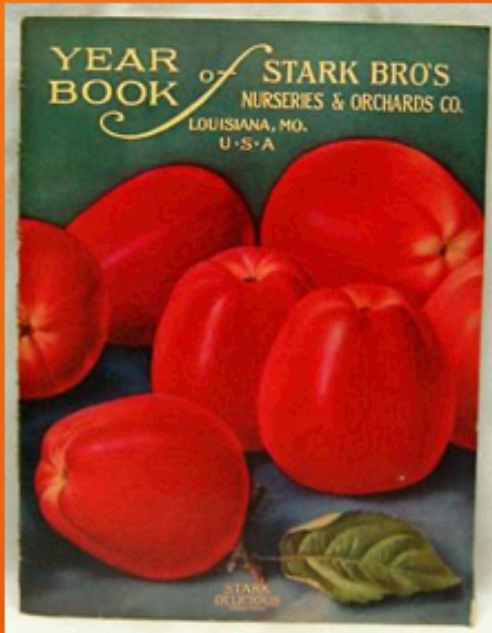


End of the Golden Age of Pomology

- A gradual loss of enthusiasm for fruit diversity.
- A decline in the number of small, regional nurseries.
- A shift from small, independent growers to large-scale professional producers.
- The selection of varieties based on commercial efficiency, resulting in a significant reduction in varietal diversity.
- Increased disease pressured.
- The widespread adoption of cold storage and improved transportation systems.
- A transformation in the form, spacing, and layout of orchards.
- The rise to dominance of the Red Delicious and Golden Delicious varieties.



The Stark Bros. Nursery and the Red Delicious



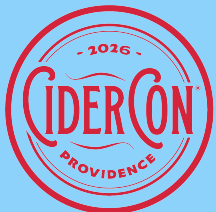
In Peru, Iowa, orchardist **Jesse Hiatt** noticed a seedling apple tree growing just outside a row of grafted trees. After surviving repeated attempts to remove it, the tree finally bore fruit nearly ten years later.

After tasting the apple, Hiatt reportedly told his wife, *"This is the best apple in the whole world."* He named it **Hawkeye**.

In 1893, Hiatt sent four apples to a fruit exhibition sponsored by **Stark Brothers Nursery** in Missouri. When **C. M. Stark**, the nursery's president, tasted the fruit, he was immediately struck.

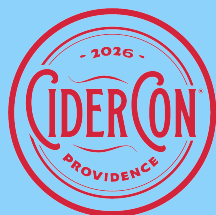
Stark Brothers moved quickly, aggressively marketing the apple and distributing trees nationwide. Over the next 25 years, the nursery spent more than **\$750,000** promoting what became the **Red Delicious**, distributing **over eight million trees**.

By 1942, through its genetic sports, Red Delicious became the most commonly planted variety in the United States.



The Delicious
Sport - Starking-
New Jersey 1921

Mr. Lewis Mood - Monroeville, paid
\$6,000 by Stark Bros. Nursery



STARKING

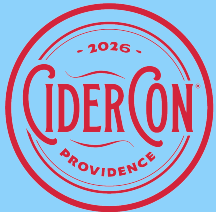
COMPARISON
OF COLOR
AUG. 31st.

DELICIOUS

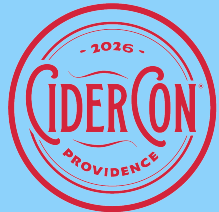
Starking
Brings
Highest
Prices



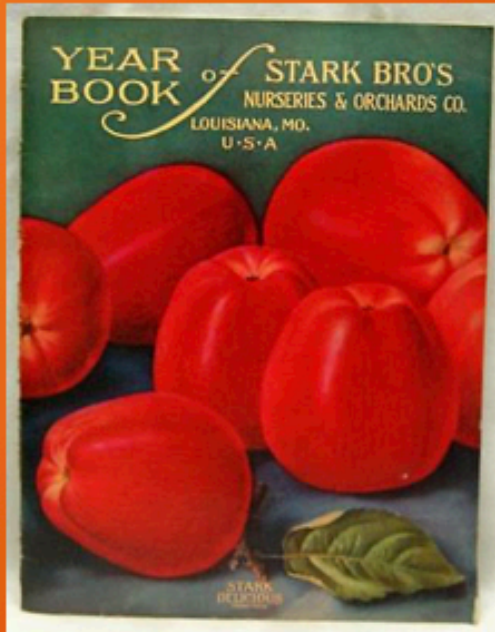
STARKING "Double-Red" Delicious, (left) not ripe but already **RED**. Regular **DELICIOUS**, (right) still **GREEN**. Both picked same day, (Aug. 31st), same orchard. Starking gets red long before it ripens, can be picked while "hard ripe", hence keeps juicy months longer.



The Delicious
Sport - Starking-
New Jersey 1921



Stark Bros Nursery and the Golden Delicious

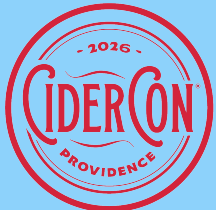


1914: Paul Stark purchased the apple known locally as *Mullin's Yellow* from Anderson Mullins in Clay County, West Virginia.

Stark famously traveled over 1,000 miles by train and horseback to see the tree, offering Mullins **\$5,000 on the spot**. The original tree was caged and protected by an alarm—triggered only once by the family cow.

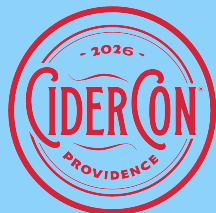
Convinced of its potential, Stark Nurseries planted **250 tree demonstration orchards** nationwide, including one in Cashmere, Washington.

Golden Delicious proved **highly adaptable, productive, and blight-resistant**.





The Cage guarding the original Golden Delicious Tree in Clay County, West Virginia



Decline in Varieties Offered by Nursery Catalogs



- Stark Bro's Nurseries & Orchards catalog offerings:
 - 1918 catalog listed 95 apple varieties.
 - 1928 catalog listed 33 apple varieties.
 - 1935 catalog listed 19 apple varieties. (*Fruitful Legacy p. 77*)
- By contrast, the William Prince Nursery catalog of 1845 listed approximately 350 apple varieties.

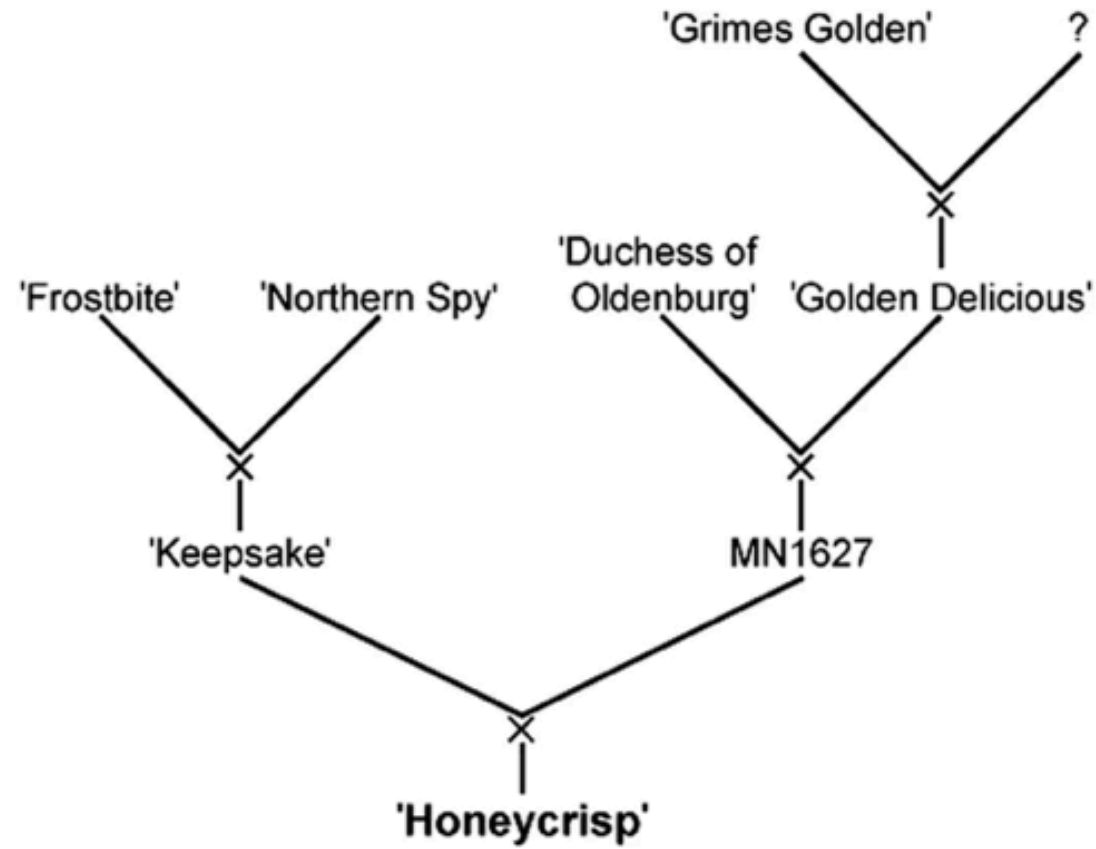


The Future of Apple Diversity

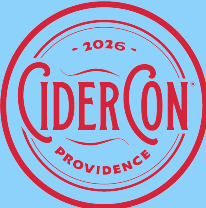
- Farmers' markets as outlets for rare and regionally adapted varieties
- The local foods movement and renewed interest in place-based agriculture
- The growth of the hard cider industry and demand for diverse cider apples
- Rediscovery and evaluation of feral and abandoned apple populations
- Apple Breeding creating further genetic diversity



Honeycrisp Genetic Pedigree



The Illustrated History of Apples in the United States and Canada



References

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The Illustrated Encyclopedia of Apples. Dan Bussey. New York: Timber Press, 2016.

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American Pomological Society. *Proceedings of the American Pomological Society*, 1852 Annual Meeting.

The Great American Apple Wizard. *The Life and Times of Peter M. Gideon*. By James R. Curran

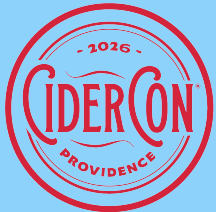
Fruit Legacy. Suzanne DeJohn & Scott Vlaun. White River Junction, VT: Chelsea Green Publishing, 2011.

Old Southern Apples. Creighton Lee Calhoun Jr. Washington, DC: McDonald & Woodward, 1995.

A View of the Cultivation of Fruit Trees. William Coxe. Philadelphia: M. Carey & Son, 1817.

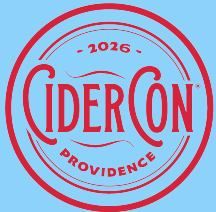
The Fruits and Fruit Trees of America. A. J. Downing. New York: Wiley & Putnam, 1845.

A History of Agriculture in New York . U. P. Hedrick. New York: 1933



Sources of Heritage Apples

- **Cummins Nursery** (1408 Trumansburg Road, Ithaca, NY 14850)
- **Fedco Trees** (213 Hinckley Road, Clinton, ME 04927)
- **Trees of Antiquity** (20 Wellsona Road, Paso Robles, CA 93446)



U.S. Apple Cultural Happenings

- Cider Days in Greenfield, Massachusetts
- The USDA Genetic Repository in Geneva, NY

