Preservation and Diversification of Heirloom and Antique Apple Varieties in Southern Ohio

For

SARE North Central

By

Hillgate Farm with
Ohio University Southern Campus
Lawrence County, Ohio

We hold that agriculture is the great and in-exhaustible source of national, as well as individual wealth, and that the health, happiness, peace and prosperity of countries and communities depend in great measure on a healthy and skillful state of Agriculture, and that it tends to promote good morals and a true conception of our dependence on our great benefactor and union of feeling and sentiment in community. Blessed as we are with one of the most fertile and productive soils, and congenial climates in the world, we feel it our duty, not to bury, but to improve the talent that is given us, by forming ourselves into an association that we may instruct one another, and thereby more abundantly reap the reward, and enjoy the blessings of the most honorable pursuit of life.

Rome and Union (Township) Farmers Club
Lawrence County Ohio
1846

1.0 BACKGROUND

Hillgate Farm was established around 1905 in Lawrence County Ohio although the Huff family had been living within Lawrence County since the early 1800s. *Hillgate Farm* consists of approximately 22 acres of pasture, approximately 15 acres of forestland, and approximately three acres of orchards and other vegetable garden areas. *Hillgate Farm* is beginning anew and looking for more sustainable and unique ways of farming for the future including antique/heirloom fruits, native plants, sustainable flower garden design, and forest grown crops.

In 2012, *Hillgate* received a grant from *Northcentral SARE* to research the apple industry in Lawrence County, document historic orchards, and attempt to locate antique/heirloom apple trees and propagate. Since the apple industry in Lawrence County primarily ended during the mid-1900s, much of the lands that were once filled with apple orchards have since been developed for housing and other uses. Initially, those of us working on the project that grew up in the county knew where many of the old orchards were located. *Hillgate Farm* had not actively searched for any remnants of apple trees from the old orchards so it was not known if any were still in existence. The only apple history that we had read about in the county was the brief history of the **Rome Beauty** apple**,** one of the most important apples in the industry that was grown commercially. Research also consisted of determining the variety of apple trees that were historically planted within the county and identifying the farmlands where they existed.

2.0 LOCATION AND GEOLOGY

Lawrence County Ohio, established in 1816, is the southernmost county in Ohio and is part of the unglaciated area of Ohio. Lawrence County is bordered on the east by Gallia County, to the north by Jackson County, to the west by Scioto County and to the south by the Ohio River. Lawrence County is part of the unglaciated *Western Alleghany Plateau Ecoregion* with a multitude of streams that have dissected the land creating hills and V-shaped valleys throughout. The lowest elevation of the plateau is 515 feet below Mean Sea Level (MSL); the highest elevation is 1,061 feet above MSL. The Plateau is divided into two major drainage basins: one that gathers flow west into Lake Erie (and northward) and the other that feeds the Ohio River and south to the Gulf of Mexico. Mineral resources in the county consist of clay, sandstone, limestone, shales, coal, and iron ore. Soils consist of a colluvium of sandstone, siltstone and shale on upland ridgetops and side slopes.

The total annual precipitation is 42 inches. Average snowfall is 16 inches. Major industries in Lawrence County have been agriculture (apples), iron ore, timber, coal, tile and firebrick, cement, chemical, coke plants, and limestone. Farmland in the county is generally well drained but wet soils would require some type of artificial drainage system (USDA, Soil Survey 1998).

The *Western Alleghany Plateau Ecoregion* covered portions of eastern Ohio, southwestern Pennsylvania, northwestern West Virginia, and a small piece of northeastern Kentucky. The ecoregion covers approximately 26 million acres and is about 72 percent forest and 23 percent agriculture. The forests represent relicts of ancient mesic forests that once covered much of the temperate regions of the Northern Hemisphere (Omernik 1987). Today, examples of these forests can only be found in the southeast region of North America and in eastern and central China making these forests important for plant diversity.

According to the *Lawrence County Soil Survey* produced by the *Natural Resource Conservation Service (NRCS)* in 1998, "orchard crops have historically been an economic resource for the county including

apples, pears and peaches. Lawrence County was a leading producer of apples in Ohio until disease and insects caused a decline. Further, planting orchards on the hillsides allowed for better air circulation which benefitted the fruit production" (USDA, Soil Survey 1998).
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From the early 1800s to about 1900, most of the timber in the western part of the county was cut for charcoal to supply blast furnaces for the smelting of locally mined iron ore. The area had also been burned over many times by fires started along the railroad which ran though the forest to serve the iron and mining industries in the county. When the land was purchased in 1916 to create the *Dean State Forest*, there were few trees that remained leaving the soil exposed and eroding. The land was used as an early reforestation experimental area to determine the best species and planting methods for replenishing the native trees. Plantings that were carried out in areas along State Route 373 (accessible from State Route 93) are the results of those experiments with the State Forest.

In the early 1930s, a *Civilian Conservation Camp (CCC)* was located on the forest. Camp personnel constructed and improved access roads, planted trees and worked toward forest restoration. Today, the State Forest contains an unbroken block of approximately 2,745 acres of forest land (Dean State Forest 2015).

The orientation of historic incorporated and unincorporated villages and towns seemed to have changed over the years in some instances and some no longer exist today. The following is brief observations from historic documents and maps that were noted during research. Our research is based on past documents and it was noted also that opinions of the time varied, spelling of villages, apple varieties and people's names varied. Farmers wrote articles to agricultural publications based on their experiences and methods, so while something may work for one farmer, it may not have worked for another. The opinions of individuals about the different apple varieties also varied; more so a personal preference. Our family at *Hillgate Farm* grew up with an apple variety that would be likely too tart for some today but we thought it had the most wonderful taste.

From an historic perspective some villages within the county are no longer viable, some historically are not exactly in the same locations as today and the names may have changed. For an overview of some areas that maybe pertinent to this report or historic documents that others may visit, the following provides observed changes from historic documents to what is known today:
The former name of the area north and east of village of Proctorville was known as Quaker's Bottom and many of the residents of the 1800s signed their letters and articles as 'Quakers Bottom' rather than Proctorville. The name 'Labelle' was also used for this area of Rome Township. 'Getaway' was known as 'Unionville' and was slightly north of the current 'Getaway'. 'Solida Creek' was actually Salliday Creek named after the Salliday family. Prior to entering Athalia from the south side was known as 'Haskellville' (some spellings were Haskelville) and observed closer to the Ohio River. The village of 'Miller' as it is known today was formerly known as 'Millersport' and consisted of businesses and shipping on the Ohio River. The village of 'New Castle' mentioned frequently in historic documents was located in Hamilton Township in the upper northeast corner of section 6. The county fairgrounds were once located in the approximate location of the current *Ohio University Southern Campus* and later moved to the Proctorville area where it is located today. The Green Bottom wetland located on the West Virginia side of the Ohio River across from 'Crown City' and the eastern end of the county was known as the Great Bottom where buffalo were frequently seen during the mid-1800s. 'Rockwood' was the name of the current Chesapeake area named after the Rockwood Mining Company that owned land in that area. 'Coryville' was just east of the confluence of Symmes Creek and the Ohio River. 'Braderick' was

observed on older maps closer to the Ohio River than its current location. The western end of the county was primarily mining, iron furnaces and other extraction industries while the eastern end of the county was focused more on the farming industry. Townships in which iron and mining companies owned land were Symmes, Upper, Lawrence, Hamilton, Elizabeth, Decatur and Perry Township to some degree.

3.0 ORIGINS OF THE APPLE

Origins of the apple were traced to Kazakhstan, the home of the apple forests. The biological importance of these forests is in the diversity and genetics of the different varieties. These forests are continuing to decline due to development and other uses of the land in that region. The reason for saving the older varieties of apples is the same as saving the apple forests of Kazakhstan: to expand and maintain diversity (Pollan 2002).

For our project, our interest morphed from collecting and saving already known antique/heirloom apple varieties to interest of developing unknown varieties from seed in a forest setting rather than an orchard. This diversity from seed and unknowns became significant based on two things; the apple trees at *Hillgate Farm* that were already growing from historic seed and producing good fruit without pruning, spraying or other management, and the heirloom/antique trees that we found in the State of West Virginia, Ohio and other states that were still flourishing. The interesting thing about researching a particular topic is we notice the apple everywhere we go; every tree standing, bearing fruit, or flowering now catches our eye.

The *University of Illinois Extension (2015)* produced some interesting facts about apples on their website titled 'Apples and more', including but not limited to the following:
Apples are grown commercially in 36 states.
The science of apple growing is called pomology.
Apples are a great source of the fiber pectin. One apple has five grams of fiber.
Apple varieties range in size from a little larger than a cherry to as large as a grapefruit.
The pilgrims planted the first United States apple trees in the Massachusetts Bay Colony.
The average size of a United States orchard is 50 acres.
Many growers use dwarf apple trees.
Apples have five seed pockets or carpels. Each pocket contains seeds. The number of seeds per carpel is determined by the vigor and health of the plant. Different varieties of apples will have different number of seeds.
World's top apple producers are China, United States, Turkey, Poland and Italy.
The Lady or Api apple is one of the oldest varieties in existence.
Newton Pippin apples were the first apples exported from America in 1768, some were sent to Benjamin Franklin in London.
In 1730, the first apple nursery was opened in Flushing, New York.
A bushel of apples weighs about 42 pounds and will yield 20-24 quarts of applesauce.
It takes about 36 apples to create one gallon of apple cider.
Almost one out of every four apples harvested in the United States is exported.
National Apple Month is the only national, generic apple promotion conducted in the United States. Originally founded in 1904 as National Apple Week, it was expanded in 1996 to a three-month promotional window from September through November. (University of Illinois Extension 2015)

4.0 HISTORY OF THE APPLE IN LAWRENCE COUNTY

During the 1800s and on into the 1900s, Lawrence County was well known for its fruit orchards and other farming activities. Historic documents indicate that from one thousand to ten thousand trees were scattered in each of the fourteen townships. *Hillgate's* research however, found that large tracts of land in a number of townships listed in Section 2.0 of this report were owned by the iron and mining industry and the iron furnace owners. When the iron industry began to decline and eventually close in the late 1800s and early 1900s the land was left eroded and timberless much due to the making of charcoal for the iron furnaces. The *USDA Wayne National Forest* and *Dean State Forest* were established on most of the old iron furnace and mining lands after the decline so there was little farming that took hold either before or after those industries closed. There was no evidence those townships laden with iron and mining had extensive apple orchards although some could have existed.

The townships heavily planted with apple orchards included Rome, Windsor, Union, Fayette, and Perry Townships. A map of the townships and list of farmers in Lawrence County can be found in Appendix A. It was important for orchardists to own land close to rail or river for shipping. Each year more apple trees were planted within the townships and at one time it was thought that the county had over 300,000 apple trees. Lawrence County apple growers were well known for the award of premiums at the *Ohio State Fair and Industrial Exposition* and at other state and national apples shows. Many varieties developed by these historic growers may never be known outside of Lawrence County. The Daily Register (Ironton, 1900 – 1925) published an industrial section of the paper which described briefly the *Apple Show and Old Home Coming* held in Ironton in 1914 (Library of Congress, Daily Register). There was no information as to how many years the Apple Show was held.

The apple orchards of Lawrence County enjoyed a long prosperity, as did many orchards within the state until insect attacks and disease began to discourage orchardists. Historic documents began discussing those issues around the early 1800s as the orchards became larger and more extensive the problem grew. This led to experiments and investigations on preventative measures. To explain why disease and other problems began to occur we have to look at how apple trees reproduce. Apples do not reproduce true to type, which means that the tree from the seed will produce apples that are almost certain to be different than the parent. Trees grown from seeds tend to be biologically very diverse, which means the tree may have bitter and/or small inferior fruit nothing like the parent (historically called 'spitters'). The only way to replicate the same 'Rome Beauty' or 'Ensee' apple was for the growers to clone their favorites by grafting them. Once grown in monoculture, these popular apple varieties become stripped of the genetic diversity the trees rely on for survival against insects, bacteria and viruses.

Further, most apple trees are not self-fertile/self-unfruitful which means their blossoms must be fertilized with the pollen of a separate variety blooming nearby at the same time in order to achieve good fruit set in both mature trees. So, if you had one variety of apple tree like the Cameo, you would need a different apple variety, like a Rome Beauty to pollinate it (cross-pollination). The fruit produced will be the same as the parent tree, but the seeds will be a cross of the two varieties. This pollination is aided by bees, the wind, etc. Cross-pollination does not affect the color or appearance of the fruit, the combined genetic material occurs in the seeds.

During the late 1890s, scientific papers were written about the use of a new concept of spraying fruit trees to protect against insects and disease. Professor W. J. Green with the *Ohio Experiment Station in Wooster Ohio* conducted experiments in some orchards using spraying as protection. Professor Green asked Nelson Cox, a Lawrence County orchardist to try the experiment on his southern Ohio orchard. Mr. Cox

agreed but it was Nelson's son, U.T. Cox, which actually conducted the experimentation with spraying under the direction of Professor Green. The results were very positive and led to a renewed interest in orcharding (Ohio State Horticultural Society 1905).

During the 1970s until present, the apple industry in Lawrence County continued to decline. Orchards were removed to make way for new residential housing and businesses. Apple trees stood in the village of Proctorville until they were removed to make way for fill material and businesses. Mr. Gillett from Proctorville was remembered by all as he set up his fruit stand in front of the Fairland schools to sell apples and in the fall he provided pumpkins for the students. The last of the Gillett orchard was removed over the past couple of years for row crops. The Labelle and Quakers Bottom area which was once blanketed with apple trees is now blanketed with a crop of residential housing and businesses. The old apple house at Quaker Bottom was converted into a home and is still standing and several storage barns and loading docks that many of the individual farmers used are still standing.

The townships once filled with the most apple trees are now some of the most developed areas of the county. Remnant trees still exist but are much fewer in numbers and difficult to locate given the changes in the county. As one resident recalls, "the hills were once filled with so many apple blossoms, it looked like a blanket of snow."

A map of the townships and list of farmers in Lawrence County can be found in Appendix A. The farmers were identified through historic land ownership, correlation with family cemeteries within the county and agricultural reports and documents from various time periods. Many of these early settlers still have family still living in Lawrence County and surprisingly, many are living on the same property as their early ancestors. While farmers are listed in Appendix A, there were many other families that contributed in other ways to the apple industry and agriculture such as the store owners, shippers and transporters, apple house owners, those that picked the apples and many more.

One of the most valuable documents for researching historic agriculture in the mid-1800s in Ohio was the newspaper/journal known as *The Ohio Cultivator* which was dedicated to helping farmers and even its brief existence yielded an abundance of information. Founded in Columbus by M.B. Bateham in 1845, the newspaper remained in operation until the Civil War when it was merged with the *Ohio Farmer* newspaper. *The Ohio Cultivator* published letters and articles written by farmers about their experiences and trial and error farming methods and techniques. Farmers shared their ideas, seeds, and plants, asked for advice, provided advice, wrote articles and more. New tools and equipment were published for sale in the paper and the networking capabilities of the farmers across the country grew by sharing and working together. *The Ohio Cultivator* helped unite Ohio's farmers. The *Ohio State Board of Agriculture* provided an avenue for showcasing the products and skills of Ohio's farmers through the county fairs and the Ohio State Fair. Improved farming techniques spread across the state and the productivity of Ohio's farms increased. According to the *Ohio Historical Society's* website *Ohio History Central*, *"with the support of The Ohio Cultivator, several Ohio farmers established the Ohio State Board of Agriculture in June 1845. The Ohio legislature recognized the group, and the board proceeded to establish county fairs across Ohio. Every Ohio County was to have its own branch of the Ohio State Board of Agriculture. Members of the county groups would agree on their individual needs and lobby the legislature to assist them through legislative acts. The county fairs would celebrate farmers and their contributions to Ohio's economy. In 1849, the Ohio State Board of Agriculture established the Ohio State Fair, but a cholera epidemic forced the fair's cancellation. The City of Cincinnati hosted the first Ohio State Fair in 1850. The fair lasted three days."* (Ohio History Connection website)

4.1 From Marietta Ohio to Lawrence County

The following history was pieced together from a number of historic documents including the Western Farmer and Gardner 1846, C.E. Dickinson, author of "A History of Belpre" (1920), "A History of the Putnam Family in England and America" written by Eben Putnam 1908, "The Book of Marietta" (1906), Ohio Agricultural Experiment Station (1918), "A Standard History of the Hanging Rock Iron Region of Ohio" (1916), the "Twenty-first Annual Report of the Ohio State Board of Agriculture" (1866-7), Hildreth books (1852, 1864, 1844, 1848), paper by Marilyn Logue from the Belpre Farmers Library "First in the Northwest Territory", the Market Growers Journals (1909), the Ohio Cultivator news (1847), and the "Ninth Session of the Ohio Pomological Society" (1859). Some of the historic information was confusing and inconsistent but was pulled from a number of documents to correlate for accuracy.

Many of the early settlers to the Northwest Territory brought fruit trees from their homes or grafts from choice varieties. As noted in the University of Illinois' Extension facts in Section 3.0, "the pilgrims planted the first United States apple trees in the Massachusetts Bay Colony" so the apple had been in America for some time prior to opening the Northwest Territory. The story of the Lawrence County apple orchards began at their origins in Marietta Ohio, the location of the first settlement of the Northwest Territory and home of Colonel Israel Putnam. The Putnam family originated from Buckinghamshire England and played a role in supplying many apple varieties brought to Lawrence County from Marietta.

When twenty years of age, Israel Putnam married Hannah Pope of Salem and in 1739 he and his brother-in-law together bought five hundred and fourteen acres in Connecticut. After a couple of years, Putnam bought out his partner and became the sole owner of what he called "Putnam Farm." Although Massachusetts born, he stayed on his farm located between the villages of Pomfret and Brooklyn. The fruits which he raised were considered the best in New England at that time. His orchards are often referred to in historic documents as 'Putnam Orchards'. For clarification, General Israel Putnam remained in Connecticut, while his son, Colonel Israel Putnam moved to Marietta, Ohio.

Marietta was the first settlement in the Northwest Territory; Belpre (Belle-prairie) was the second. The *Ohio Company of Associates*, established in Marietta, had supported provisions in the ordinance to allow veterans to use their warrants to purchase the land. The *Ohio Company* purchased 1.5 million acres of land from Congress. The ordinances of the *Ohio Company* required all recipients of donated lands that they set out fruit trees immediately upon settlement.

In 1795, a 100-acre tract of bottomland along the Muskingum River about six miles from Marietta was settled by Colonel Joseph Barker. (Seen on aerial photographs today, this land is in the sharp bend of the Muskingum and is still used for farming). Colonel Barker had brought young apple and cherry trees for planting on his new farmland. After clearing about two acres, the apple trees were planted but the varieties were unknown. Eventually Colonel Israel Putnam settled in Marietta on the banks of the Muskingum River near the home of Colonel Barker. Note: the Colonel Barker house is still standing and in use and near the Putnam family cemetery, the former location of Colonel Putnam's farm.

Aaron Waldo (A.W.) Putnam, son of Colonel Israel Putnam and grandson of General Israel Putnam was born in 1767 in Pomfret, Connecticut. In 1788, Aaron accompanied his father to Marietta, Ohio bringing some useful materials with them for settlement. At that time, Israel Putnam did not move his entire family to Marietta. In 1795, apple scions were sent to Marietta from the 'Putnam Orchards' in Connecticut. In journal accounts, the 23 varieties were carried from New England were packed in beeswax in saddlebags and arrived in Belpre Ohio in May 1796. The day after their arrival, trees were grafted with the scions

brought from New England to Ohio. This was thought to be possibly the first time grafting had been utilized in the Northwest Territory. A list of scions provided were as follows: Putnam Russet, Seek-no-Further, Early Chandler, Late Chandler, Gilly Flower, Pound Royal, Naturalings, Rhode Island Greening, Yellow Greening, Golden Pippin, Long Island Pippin, Tallman Sweeting, Streaked Sweeting, Honey Sweeting, Kent Pippin Cooper Apple, Streaked Gillyflower, Beauty, Queening, Englin's Pearmain, Green Pippin, and Spitzenberg. The Roxbury Russet was known in Southeastern Ohio as the Putnam Russet.

In the winter of 1803-1804, again a trip was made to New England to obtain more apple grafts and return them to the Marietta area. Eventually, A.W. Putnam established a nursery on his farm in Belpre Ohio where he had settled and continued to bring grafts from the New England area to Ohio. The sales for apples and cider at the Ohio orchards were substantial according to records kept by William Putnam. The list of apples in the Putnam Nursery were the same as the list from 1794 with the additional English Pearmain, Pound Pippin, Colvert Sweeting, Bellflower, Rocking Hand, Detroit Early, Cathead, Muskingum, Rhode Island Greening, Bellflower, Summer Sweet, Ladies Thigh (or Pearmain), Long Island Greening, Belle Bonne.

The nursery consisted of 32 rows and approximately one-third were grafted with Russet. Labels had been lost from one package of scions and were likely the row of 'Greenings' and recorded as 'variety'. Rows 20 and 21 were referred to as 'Muskingum'. As a side note, settlers often referred to seedlings as 'naturalings'. It was from this orchard along the river that the **Rome Beauty** originated and according to Putnam family history, A. W. Putnam had built a larger new home around 1800 after living in his first house which was a log cabin close to the river. Mr. Joel Gillett had been living in the cabin leased from Putnam for about one year and was going to move to Rome Township in Lawrence County Ohio. Before leaving for Lawrence County in 1816, Gillett took a number of grafted apple trees and paid twenty-five cents each. One sprout cut from a grafted Russet scion was cut off and treated as an original seedling and this sprout, according to the historic Putnam account, was the **Rome Beauty** as it is known today.

The Putnam orchards and nursery were still in existence in the early 1800s, and according to C.E. Dickinson, author of "A History of Belpre", Aaron Waldo Putnam's (son of Colonel Israel Putnam) house was described as "this Putnam House, painted white, and standing in the margin of the plain, or second bottom, and surrounded by orchards, became a conspicuous object to travelers on the 'Belle Riviere' as there was at that time little besides wilderness and log cabins between Pittsburgh and Cincinnati."

Joel Gillett and family made their way down the Ohio River and purchased approximately 100-acres in southern Rome Township next to the river where he built a log house. With the grafted fruit trees brought from the Putnam nursery, Joel planted an apple orchard on his property. During the planting, the sprout that was an original sprout cut from the Russet grafted scion was given to his 14 year-old son, Alanson, for planting. Young Alanson planted his seedling down by the Ohio River. On that same day, a young man named Thomas Gardner helped with setting out Joel's orchard. Gardner also became a well-known farmer and orchardist in the area.

A few years later, Alanson's tree was producing such nice fruit that people began to take notice of "Gillette's seedling" as it was called initially. The fruit was red and juicy and tasted sweet. Horatio Nelson "H.N." Gillett, a cousin of Alanson's and a son of Zebulon Gillett, was the first person to collect scions from Alanson's apple tree for grafting. Other farmers also began to take scions of the tree. H.N. Gillett started a nursery and began to promote this new apple. In about 1830, a neighbor, George Walton, named the apple the "Rome Beauty" apple in honor of Rome Township and the fine appearance of the

fruit. After this, most of the orchards in southern Ohio contained mostly the Rome Beauty apple. The original tree lived on a sandy knoll in a corner of a field near the Ohio River. The original tree stood on the banks of the Ohio River until 1860 when it was undermined and washed away by high water.

H. N. Gillett brought the Rome Beauty to the attention of the *Ohio Convention of Fruit Growers* in 1848 as published in the *Ohio Cultivator* in 1849. The Rome Beauty apple tree was described in the bulletin as "the tree was vigorous in growth, the main branches upright and divergent and laterals often spreading or drooping. Older bark is brown, light olive-brown or yellowish. Twigs are slender reddish brown, leaves of medium size. Apple scab is the most serious disease of this variety which attacks fruit and leaves. Trees are consistent bearers of fruit year after year. The fruit is large, roundish, inclined to conical, with a rather broad flattened base, stem is long and slender and not well attached to the apple, skin is thin and tough, smooth and fairly glossy, with some gray scarfskin over the base, ground color yellow, mottled and streaked with bright crimson, the coloring varies with the location with the best colored fruits produced on higher elevations while river-bottom fruit was deficient in color. Flesh is nearly white and a little coarse, firm and crisp until mature, moderately juicy, flavor mild subacid, with a mild aroma. Rome Beauty is considered a late bloomer with fruit ready for picking the third week of October. The fruit seems better for cooking approximately 6-8 weeks after maturity."

The following is an article submitted to the *Western Farmer and Gardner* by H. N. Gillett in 1846. The article provides a list of apples that were growing on Gillett's farm during this period (Western Farmer and Gardner 1846). Since he had a nursery on his farm and sold fruit trees, the following apples are likely to have been sold and distributed to other farmers in Lawrence County and elsewhere. These names also match the apples described earlier that Joel Gillett carried from Belpre Ohio from the nursery of A. W. Putnam.

Reference Appendix B to view illustrations of some apple varieties listed in this section.

LIST OF APPLES.

I observe that one of your correspondents, Mr. Brady, wishes someone to give advice about selecting fruit trees for planting an orchard. As the invitation appears to be of a general character, and as inquiries, too frequently, go unanswered, I will take the liberty to recommend the following list of apples; judging from the fact that a list of pears, plums, & cherries recently appeared in the Farmer, that apples are what he wants:

For June — Southern Queen, Carolina May, Bracken Early, and Early Queen.
For July — Pound Royal, Early Chandler, Sugar Sweet.
For August—Summer Seek-no-further, Benoni, Summer Queen.
For September—Long Pearmain, Pumpkin Sweet, Cooper.
For October—Honey-greening, Eighteen-ounce Pippin, Poppy-greening.
For November—Mammoth, Fall Pippin, Lancaster Lady-finger.
For December—Blackheart, Blue Pearmain, Bowen's Imperial Reeflet.
For January—Golden Russet, Big Hill, Windower.
For Fobruary—Pryor's Red, Carolina Red, Baldwin Queening, London Pippin, Esopus Spitzenburg, Hubbardston Nonesuch, Gibbs' Seedling. For March—Roxbury Russet, Yellow Newtown Pippin, Green Newtown Pippin
For April — Golden Harvey, American Marygold, Red Cedar.
For May — Reinette French, Winter Queen, Lansingburg.

Winter Apples, for June—Crawford's Keeper, Rolen's Keeper, Virginia Keeper.

The above selections are made from more than 200 sorts of very choice apples growing on my farm. And, with few exceptions, are very productive; large, handsome, and decidedly first-rate. As I am a dear lover of a first-rate apple, and have lived in a neighborhood where apples are extensively grown for export, for thirty years; have navigated our western rivers many years, and observed every apple and apple-market that came in my way, worthy of note, I make some pretensions to know what sorts are most desirable.

There are many other very desirable sorts cultivated in this neighborhood; but no better than the above, all things considered. Mr. Brady, of course, will consult his own interests and convenience, and plant a large or small proportion of early apples, as he may deem best. Sorts that mature very early, and those that keep till spring, generally sell best.

The Gillet's Seedling originated in this township, (Rome) and is frequently called Rome Beauty; is a very vigorous grower; a very young, constant, and profuse bearer, and will, perhaps, pay better than any other sort, though not equal to many other varieties in point of flavor.

You have been exceedingly fortunate, in procuring the services of men so eminently qualified to write for an agricultural paper. I feel quite anxious, for one, and no doubt many others do, to know their names.

Yours, H. N. GILLETT.
Quaker Bottom, L. C, Ohio.

Another article written by H. N. Gillett for the *Ohio Pomological Society* is as follows:
(Transactions of the Ohio Pomological Society 1859).

ZEBULON GILLETT AND SON,
NURSERYMEN, QUAKER BOTTOM, LAWRENCE COUNTY, 0.

My father, ZEBULON GILLETT, planted the first nursery in this county, in the spring of 1817. I think it was the only nursery on either side of the Ohio river, between Belpre and Cincinnati, except small lots of seedlings planted by the French in their gardens at Gallipolis, and in the French Grant (these were nearly or perhaps all transplanted without grafting), and another nursery planted by Mr. Firman, of Firman's Bottom, Kentucky, seven miles below Portsmouth, Ohio.

Mr. Firman squatted on a tract of land which 'belonged to a man by the name of Jerome, not at that time a. resident of the country, and immediately planted a large quantity of apple seeds. He also felled the timber on something near one hundred acres of land, and planted the same with trees from this nursery, or, more properly, seed-bed. This orchard was principally planted among the fallen timber, and with little regard to form or order, and apparently with but one object in view, which was to get as many bearing trees as possible on the ground in the shortest space of time. A small portion of these trees were grafted. I well recollect the Priestly, and the Milam, and a. sort quite common in Virginia and Kentucky, called 'Pearmain (an excellent little apple), and an apple called Golden Pippin.

This orchard, notwithstanding the slovenly way it was planted, presenting the appearance of having been sowed broadcast, flourished and produced well, on that exceeding rich virgin soil, for a few years, and large quantities of apples were shipped annually to New Orleans ; but this state of things did not continue long. I visited the orchard in Sept, 1819. It was then in full bearing, and the fruit perfect and healthy.

Some few years after, the bitter-rot made its appearance and in a short time attacked nearly every sort in the orchard. It was here that this fatal scourge originated. 1 am quite unable to decide in my own opinion as to the cause of this malady.

The sorts of apples first planted and propagated in this, Quaker Bottom, by my father, are mostly included in-the following list:

Early Chandler, Prolific Beauty,
Summer Sweeting, Bellyboon, or Belle et Bonn,
Pound Royal, Wapperyaw Sweeting,
Early Bow, Yellow Pumpkin Sweet,
Golden, Molasses Apple,

August Sweeting, Muskingum Red Streak,
Summer Seek-no-further, Long Island Pippin,
Striped Gilliflower, Gray Pippin,

Cornish Gilliflower, Newtown Pippin, green,
Black Gilliflower, Rhode Island Greening,
Long Pearmain, Hunt's Russet,

Fall Spitzenberg, Roxbury Russet,

Sugar and Water, English Gold Russet,
Cooper, Honey Greening,
Poppy Greenup, English Pearmain,
White June eating, Blue Pearmain,
Queening, Summer Harvey, etc.

The above named sorts we brought down the river, at the time we purchased the farm that I now occupy. Some four or five years after, we procured from an old Quaker (an itinerant tree peddler), a goodly number of sorts, among which were the following:

Yellow Bellflower, Rawle's Geniton,
Fall Pippin, Winter Tart,
Dayton Pippin, Summer Queen (incorrect),
Monstrous Pippin, Bed Vandervere,
Neverfail, Jersey Sweet,
Blue Pearmain (incorrect), Vandervere Pippin,
Carthouse, And many others withoutname.

The Rome Beauty, as you are aware, was also planted here by my uncle, Joel Gillett, at the time my father made the first planting here. Uncle Joel and my father both died before this famous seedling came in bearing, and it fell to my lot to be the first to discover its valuable qualities, and to propagate from it, and bring it into notice. This apple is now being planted in this region of country, almost to the exclusion of all other winter sorts, for market purposes, yielding two or three times greater profit than any other sort.

Thomas Gardner, a neighbor of my father, also planted a nursery in this (Quaker) Bottom, but a few years after my father came here, perhaps in 1820, or thereabout. His stock was exclusively of Putnam's varieties, obtained direct from Israel Putnam, of Washington County, 0.

But a few years after, Titon Kemble, Esq., planted a small nursery in this Bottom, principally for his own use. His varieties were mostly the same as the above, the balance from Putnam's.

Most respectfully yours,
H. N. GILLETT.

The following was also an article from the Pomological Society and written by Mr. George Dana, Jr. from Belpre Ohio.

THE PUTNAM BROTHERS
PIONEER NURSERYMEN OF WASHINGTON COUNTY OH

The early settlers of Washington County were nearly all from New England. Coming to this then far-off country, they supplied themselves with seeds of' the different kinds of fruits, grains and vegetables they were accustomed to at home, and prominent among these were the apple, peach, pear and cherry. The garden patch, first cleared, received these, to be transplanted in a year or two into the first few acres cleared. The soil and climate were congenial; the trees grew at once, thriftily, and in a very few years yielded fruit. We can now hardly realize how easily everything of the kind would come to maturity. There are still some remains of those orchards of natural fruit, but most of them have disappeared. Take my father's farm, to illustrate: It was located on by my grandfather in 1790. Some four or five acres on the bank of the river were cleared the first season, and apple seedlings, as soon as large enough, transplanted to it. Some few of these still remain. There was some fair fruit in it, but none that we have thought worth propagating. Pears, peaches and cherries seemed in their native element, flourished without signs of disease, and produced bountifully the most luscious fruit. This continued with the pear about thirty years, when they began to be affected with blight, and by 1830 they were mostly all dead. Pears, ever since, have been very uncertain. The peach, about this time, began to be diseased, and soon acquired, and has continued to bear, the same character for uncertainty it has in other parts of the State. Cherries have also much deteriorated.

In 1796, Israel Putnam, who lived on the Muskingum River, six miles above Marietta, returned to New England, partly to get scions of the choicest apples there and partly on other business. He obtained quite a quantity—a one-horse wagon load—and hired a man to bring them out. The man delivered the scions, as directed, but went on with the horse and wagon, which were never regained. A list of some of the leading kinds brought out by Israel Putnam was published in the Ohio Cultivator in 1846. I am informed by L. I. P. Putnam, a son of Israel Putnam, that this list embraces only about half of the kinds. There were some forty or fifty of them. The record of them has been lost—at least we have not been able as yet to find it.

*A portion of these scions were distributed to the settlers, who had trees, to engraft. Thus we find in the old orchards, now and then, a large engrafted tree. My grandfather had a few of the scions, and some of the trees engrafted with them are still standing ; among them the Putnam Russet, Holstone Sweeting, Harvey Stripe, and Queening, showing kinds not published by Mr. Bateham, and thus confirming what L. I. P. Putnam says about the original list. I will hope yet to find this list, or to get the names of part of the kinds, if not all.**

Israel Putnam, on the Muskingum River, and his brother, Aaron Waldow Putnam, living in Belpre, opposite Blennerhasset Island, immediately commenced the nursery business. They were from Pomfret, Connecticut. The first trees planted were now yielding some apples, from which they obtained seed sufficient for a small beginning. The scions brought from New England, not distributed, were used by the two brothers to commence with. These were the only two men who carried on the nursery business or cultivated trees for sale, till my father commenced, about the year 1817. I have tried to obtain the early records of these two nurseries, but they have been destroyed, or cannot now be found. These nurseries were kept up till the death of the proprietors, which occurred about 1821. Both died nearly the same time. A. W. Putnam, of Belpre, had just engrafted 16,000—1 suppose the largest number he had ever done in one year. The business was wound up by their executors, and the nurseries discontinued. I cannot obtain very definite information about the extent of their business. I suppose a large part was local, or to the country within forty or fifty miles of them. But they had some orders from Kentucky, Cincinnati, and Louisiana, and sometimes they sent boat loads down the river to sell. Their price was usually 25 cts. each, or $20 per hundred. They confined their attention principally to the apple.

The following is the list referred to above as published in the **Ohio Cultivator in 1846, and furnished to Mr. Bateham by Mr. Wm. B. Putnam, who was a son of the first nurseryman, and claimed to have the original list in his possession:*

1. Putnam Russet. 7. Natural (seedling). 13. Striped Sweeting. 19. Prolific Beauty. 2. Seek-no-further. 8. R. 1. Greening. 14. Honey Greening. 20. Queening.

8. Early Chandler. 9. Yellow Greening. 15. Kent Pippin. 21. Eng. Pearmain. 4. Late Chandler. 10. Golden Pippin. 16. Cooper Apple. 22. Green Pippin. 5 Gillyflower (Red). 11. Longlsland Pippin. 17. Striped gillyflower. 23. Spitzenberg.

6. Pound Royal. 12. Talman Sweeting. 18. Black Gillyflower.

One-third or one-half of the above varieties have long since been lost, or dropped from cultivation, as not being profitable.

In 1816, A. W. Putnam introduced four additional kinds from New England: Baldwin, Pound Royal, Ribston Pippin, and Siberian Crab.

My father commenced a nursery about 1817, enlarging it gradually. For a long time this was the only nursery in the county. He did not attempt to do a very large business. His sales were principally to those who came to get trees for their own use. Since I became associated with him, in 1845, I have had the principal charge of it. It is now much larger than ever before.

Among all the apples brought out from New England, or introduced here, the Putnam Russet soon became the prominent one. In 1810 or 11, whole orchards were planted of it, and perhaps the nurseries cultivated nearly as many Russets as of all other kinds. It has continued to be the prominent apple till within a few years. Now the Rome Beauty is most in demand. Many kinds that did well for a number of years, have become diseased or worthless, but the Russet still maintains its good name. It has never been a trait of our nurserymen to be seeking for new kinds, and hence but few were introduced after the first, till they were common in other parts of the State. The Russet they found a great, sure and constant bearer, of all good, well-matured apples, superior for eating, cooking, drying and cider, and it still maintains its character, although, abroad, the Rome Beauty is now most in demand.

Respectfully, Belpre, 0. Geo. DANA, Jr.

These articles published in the Pomology Proceedings provide some background as to the varieties of apple trees that were historically planted in Lawrence County and southeastern Ohio. Before going on further with the apple varieties note the connections with the Gillett family to other farmers and orchardists in the County (this is not inclusive). The Gillett family members were related to other families that also made their home in Lawrence County including Thomas Gardner (Joel's son-in-law), Elhanen Winchester Wakefield, George Washington Wakefield, William Reed, D.W. Jones, Charles Radford and Emily Reckard, Mark Singer, Nelson Cox and U.T. Cox and others not listed. In a letter written to the *Ohio Cultivator* April 1847, H. N Gillett talks about their farmers club meeting at Quakers Bottom and that Thomas Gardner once lived with Israel Putnam in Marietta and performed most of his grafting.

Also the spelling of the 'Gillett' name varies in historic documents and included but not limited to Gylett, Gyllett, Gillett, Gillet, Gillette. Joel Gillett's great grandson, U.T. Cox and U.T.'s father, Nelson, are mentioned in the continued history below.

The Ensee apple originated on the farm of Nelson Cox in Lawrence County, Ohio (current property and home owned by Mary Ann Ater located on Greasy Ridge and previously owned in 1847 by Roswell Gardner) and began to bear good crops as early as 1895. The Ensee was noted as a family apple for dessert and cooking, and as a highly ranked commercial variety. A farmer, Mr. Ballou grew this apple variety in Newark Ohio for several years and in that market his customers preferred them to any other variety through the winter.

The trees bloomed as early as the Grimes or soon after and the buds and bloom tolerated frost well. The Rome Beauties on the other hand were more readily damaged. Mr. Ballou showed the Ensee's at the state fair one year and were deemed to be the showiest apples on exhibition.

The *Ohio Experiment Station* had a number of the Ensee's growing on the station ground as well as other orchards in Ohio. Mr. Ballou indicated that a grower in northern Ohio says it was better adapted to their location and climate than the Rome Beauty. Opinion was that the Ensee retained its juiciness throughout the winter unlike the Rome Beauty. The Ensee apple trees were obtainable from many nurseries although the names of those nurseries are unknown (Ohio Farmer 1921).

The following is an article written by Mr. F.H. Ballou regarding the Ensee Apple for the Ohio Report on Research and Development, Volumes 4-6 (Botanical Abstracts 1921)

ENSEE APPLE
An Ohio Variety Coming Into Prominence

Unfamiliar to many growers. It is remarkable, in this era of extravagant praise and lavish use of brilliant-hued printers' ink in illustrating new varieties of fruits, that so excellent an apple as the Ensee should be so unproclaimedly discovered, and so quietly and locally propagated, planted, grown and marketed, that comparatively few orchardists are aware of its existence. For, in the estimation of the small number of apple growers who are familiar with the Ensee, as well as in that of the writer, nature has not, within the past quarter of a century, bestowed upon the fruit culturists a new, late-keeping winter apple possessing quite so many attributes of unusual merit.

The Ensee first appeared as a seedling (doubtlessly of the famed Rome Beauty) at the old farmstead of Nelson Cox, in Lawrence County, Ohio.

While the valuable characteristics of the Ensee for southern Ohio conditions were undiscovered at the time the original tree bore its first fruit, the passing years have proved its right to a prominent place among varieties of apples long recognized as standards for that section. Yet its name and its excellence are known in but few localities outside of the county in which it originated.

Comparison with Rome Beauty. The peculiar merits of the Ensee apple perhaps can best be demonstrated by comparison: the Rome Beauty long has been the standard variety for commercial planting in southern Ohio; and for this purpose its excellence is fully and widely recognized at the present time. The Ensee, the writer is confident, under conditions of soil and climate favorable to Rome Beauty, will not prove disappointing even as a substitute. It is similar and equal to its long popular parent in a number of respects, and far superior in dessert quality.

Trees of Ensee, in habit of growth, are strikingly similar to Rome Beauty, being upright in form while young, but becoming more spreading and drooping with advancing age and heavy fruit bearing. The bark of young trees of Ensee is noticeably lighter in color than that of the Rome Beauty, being a golden-brown instead of mixed brownish-red and green as is that of the latter named variety.

It occasionally has been observed that the Ensee does not make quite so vigorous a growth as the Rome Beauty during the years immediately following its planting in the orchard. This may be true to a certain but unimportant extent. The Rome Beauty itself is quite variable in this respect, generally thriving on light, well drained upland and the sandy and gravelly soils of the river valleys, but making very slow growth on soils that are heavy, cold and poorly drained, such as abound in the level agricultural areas of western and northern Ohio. It is the writer's observation that trees of the Ensee are so familiar in form, vigor and regularity of fruit bearing, to those of Rome Beauty, that there need be no hesitation in planting it on soils adapted to culture of its famous progenitor.

The Ensee, like its parent, is a truly winter variety. Fully as late in maturity, the fruit clings with equal tenacity to the trees until late in autumn, affording the orchardist ample opportunity to halves'; the crop. In coloring it is fully equal if not superior to Rome Beauty. In form, also, Ensee is similar; perhaps slightly more oblate or flattened—not quite so corneal.

The flesh of the Ensee is yellowish, crisp, rich and delightful; and its crispness, juiciness and high quality are retained long after the naturally lower-quality flesh of Rome Beauty has become dry or "mealy" and deficient in such flavor as renders the latter fairly acceptable for dessert use during its prime in early and midwinter. Ensee is an excellent storage apple.

Responds to good treatment. Never before in its brief history did the Ensee apple trees and orchards of Ohio produce finer fruit than in the season of 1920. With generous feeding and thorough spraying now so generally and intelligently practiced by orchardists in the hilly section of southern Ohio, and plenteous moisture during the period of development, the fruit was unusually large and perfect, while its attractive appearance and rich, luscious quality was exceedingly pleasing alike to growers, buyers and consumers.

Why the Ensee apple has not been more largely propagated and planted is difficult to understand. Less valuable varieties have been noisily discovered, ardently praised through advertising, heavily propagated, the trees sold by hundreds of thousands and planted throughout the length and breadth of

our country while, at the present time, we are not aware of a single nursery firm that is giving special publicity to the Ensee if, indeed, it is included in their lists at all.

4.2 Agricultural Societies and Clubs in Lawrence County

The *Lawrence County Agricultural Society* was organized in May 1847 and the first public meeting was held at the Burlington Courthouse (Burlington was the first county seat but was later moved to Ironton).

The following officers were appointed:

H. N. Gillett President.
John Newton, Vice President.
Benjamin Johnston, Treasurer.
S. M. Browning, Secretary.
John Bryan,
William Lambert, Esq.,
Thomas Gardner, }• Managers.
Salmon Reckard,
Alfred Hastings

A committee of one from each township was appointed to solicit members, subscriptions, and donations for the Society and are as follows:

Upper, William Lambert; Perry, Benjamin Johnston; Elizabeth, W. H. Kelley; Decatur, S. N. Shattuck; Rome, H. N. Gillet; Union, Jacob Proctor; Fayette, John Bryan; and Joshua Hambletou and Thomas Walton were chosen to be general agents for the county at large for the same purpose. Lawrence, James W. Stumbo; Symmes, John C. Stewart; Aid, Thomas Lambert; Washington, Joseph Jenour; Mason, John Massie; Windsor, E. W. Wakeficld (The Ohio Cultivator, 1847).

In 1846, the *Ohio Cultivator* published the Constitution of the *Rome and Union Farmer's Club*. This is an excerpt from the *Ohio Cultivator* of that constitution:

We hold that agriculture is the great and in-exhaustible source of national, as well as individual wealth, and that the health, happiness, peace and prosperity of countries and communities depend in great measure on a healthy and skillful state of Agriculture, and that it tends to promote good morals and a true conception of our dependence on our great benefactor, and union of feeling and sentiment in community. Blessed as we are with one of the most fertile and productive soils, and congenial climates in the world, we feel it our duty, not to bury, but to improve the talent that is given us, by forming ourselves into an association that we may instruct one another, and thereby more abundantly reap the reward, and enjoy the blessings of the most honorable pursuit of life.

Article 1. We, the subscribers, agree to form ourselves into an association, to be known as the Rome and Union Farmers' Club, granting the right of membership to citizens of Rome and Union townships only, on the terms of paying 121 cents annually to the funds of the society and conforming to its constitution and rules.

2. The object of this society is to promote the science of agriculture and the improvement of agricultural implements and farm stock in the townships of Rome and Union.

3. The Society shall be organized as soon as ten members shall be enrolled, by the election of one President, one Vice President, one Treasurer, one Corresponding Secretary and one Recording Secretary.

4. The duties of the President are, to superintend all the concerns of the society, preside at all its meetings, and deliver, or cause to be delivered an address on the subject of agriculture at the monthly meetings of the Society.

5. The duties of the Vice President are, to superintend or assist the President in the performance of his duties, with him, or in his absence, to perform the duties assigned the President.

6. The duties of the Treasurer are, to receive and collect subscription money and annual dues of the members, and donations in aid of the society, and to pay out the same to defray the expenses of the society, on the order of the President, and to render an annual account of the same at the anniversary meeting of the society, which shall be held on the last Friday of January of each year.

The duties of the Corresponding Secretary, are to hold correspondence with other societies and individuals, and to prepare such of the proceedings of the society for publication as may be deemed worthy or be required, and to keep a regular account of the expenses incurred for books, stationary, transmission.

8. The duties of the Recording Secretary, are to keep a regular record of the proceedings of the Society, and to assume the duties of the Corresponding Secretary, in his absence.

9. The officers of the Society shall be elected annually, at the anniversary meetings of the Society, by ballot, and vacancies may be filled at the monthly meetings of the society, by a majority of the members present.

10. No more than sixteen members will be admitted without the unanimous consent of the society.

11. The meetings of the Society shall be held monthly, one at the house of each of the respective members, taking all of the several members in regular rotation.

12. It shall be the duty of every member to make a series of experiments annually, or to test the relative value or productiveness of someone at least of the following articles: 1st, relative value of different kinds of manure, applied to one or more of the different farm crops, and how applied; 2d, relative value and productiveness of different kinds of corn; 3d, relative value of wheat; 4th, of oats; 5th, of buckwheat; 6th, of potatoes; 7th, of the different grasses; 8th, of the different breeds of hogs; 9th, different breeds of sheep; 10th, of cattle, also fruits and vegetables, and to render a correct account of the manner of preparing, cultivation, feeding, 6/c, as the case may be. It is desirable that accuracy be observed, and the result of each member's experiment be explained to the society as soon as practicable.

13. All members are required to attend all the monthly meetings of the society; a failure to do so will subject the absentee to a fine of 25 cents, unless the absentee gives a reasonable excuse for non-attendance; said fine to be collected by the Treasurer, on the order of the President, the fine to be appropriated to the general funds of the Society.

14. It shall be the duty of any member at whose residence any monthly meeting shall be held; to provide a good, plain, substantial farmer's dinner, and to present for inspection such farm stock, crops, implements, buildings, gates, hedges, ditches, fences, fruits, fowls, seeds, vegetables, & etc, as he may deem worthy.

15. The manner and place of holding meetings, shall be as follows: At each annual meeting, the named of all the members shall be written on separate tickets, and deposited in a box or hat, from which the President shall draw, and the names shall be numbered and recorded by the Secretary, in the order they are drawn, and the meetings shall be held at each member's house in the order of his number; provided, if the number of members exceed twelve, they extend into the following year in their order.

16. This constitution may be altered or amended at any annual meeting, by a vote of two thirds of the members present.
(letter From The Secretary.) Mr. Editor: We have had our twelfth monthly meeting today; all our members present except one, who has gone to New Orleans with produce. We had an interesting address by one of our members, and raised a small subscription for a library. All, or nearly all of your subscribers in this place are members of our club, and Jacob Proctor, our Corresponding Secretary, will forward you the names and payments for next year's subscription; what premiums on new subscribers you can afford to send, let them, if more than one, be of different works, as we shall use them as part of our infant library. Much interest is taken in our meetings, and in the reading of the Cultivator. Your articles on rust and smut have given general satisfaction; brineing and limeing seed wheat has been generally attended to, and 1 think some of our club will try charcoal next spring. If they do I will send you an account of the result. Several varieties of wheat have been sown, and put in, in different ways. I will try and send you what I may deem of advantage to your readers.

Quaker Bottom, O. Thomas Walton.
(The Ohio Cultivator (Jan 15, 1846), Volume 2, Number 2, pg. 11)

5.0 TERMINOLOGY FOR DESCRIBING THE APPLE

When describing the shape, color, taste, smell and size of an apple, we wanted to be consistent with the descriptions and terminology of the day. The writers (farmers) of articles in the *Ohio Cultivator* in the mid-1800s often used their own descriptions and observations. For instance, a farmer wrote to the *Western Farmer and Gardner in 1846* and indicated that the color of the twig on an apple tree and a ripe apple on the same tree were the same color, so the twig can be looked at when there is absence of fruit to determine apple color. His description is as follows:

> *To set this subject before the readers, we will say there shall be but two colors in apples; one red, and one yellow: all those that are striped, dashed, splashed, marbled, washed, or blushed, shall be called red; and those that are green, white, or yellow, without red, shall be called yellow.*
>
> *The examiner will now take the annual shoot of last year's growth, after it has ripened, and with a sharp knife split or rather shave off the outer covering of the bark, and gradually approach the inner bark, and if the tree bears red apples, the inner coat of the dark outer covering will be red. If this coloring matter be of dingy or sooty red, the apple will, most probably, be yellow with a forced blush; but if the forced blush is bright, the red in the twig will also be cleared. And, on the contrary, if the bark of the twig shows no sign of red, we may readily predict that the apple of such tree will be yellow, white, or green. If the inner coat of the bark be very yellow, the apple will be*

yellow-fleshed; if pale yellow, the flesh of the apple will be yellowish-green; if green, the flesh of the apple will be white.

The foregoing colors are somewhat changed by the frosts of winter, but, in a general way, hold good.
Western Farmer and Gardner, Vol 2, page 166, January 1, 1846, S.V.B. Noel Publisher and Printer.

We found that the most thorough historic terminology for describing apple varieties was found in the book titled 'Apples of New York, Volume 1' (1905). The terminology begins on page 20 in describing apple varieties. Naming and technical descriptions of the tree and fruit can be found on page 27 such as describing the tree (top, twigs, buds, and leaves), describing the fruit (size, form, stem, cavity, calyx, basin, skin (illustrations of cross sections), calyx tube, stamens, seeds, flesh). Page 38 discusses color and texture and flavor (firm, hard, tender, tough, crisp, breaking, dry, juicy, sour, subacid, sweet, sprightly, aromatic, and astringent). We did not print these sections from the book since it can be downloaded from Google Books and is also obtainable in some instances from book companies, online or libraries.

Another document that provided good descriptions of apples grown in Ohio was the *Ohio Agricultural Experiment Station (Dec 1915), Wooster, Ohio, Bulletin 290, Varieties of Apples in Ohio.* We could not find any 'standards' of today for describing apples, although there may be something available. I would think that consistency in describing the fruit in the apple industry and marketplace would be a benefit to consumers.

The *'Apple Journal'* which can be found at http://www.applejournal.com has a table of different apple varieties and a description of the fruit. Another website with good photos and descriptions of apple varieties is *'New England Apples'* at http://www.newenglandapples.org/AppleVarieties-id-37.html. *Washington State University Extension* has a website that provides details of the best apples for cooking, baking, cider, and apples that keep well, the web page is http://extension.wsu.edu/maritimefruit/Pages/AppleUseChart.aspx. English apple varieties with photos can be found at the 'English Apples and Pears' web page at http://www.englishapplesandpears.co.uk/varieties.php. Check out the *'Ohio Apples'* website that lists Ohio orchards, orchard events, teacher resources, recipes and more…the web page is http://www.ohioapples.com.

Reference also Appendix B for color illustrations of some apple varieties mentioned in this report.

6.0 APPLE VARIEITIES FOUND IN OHIO

The historic documents would often refer to an apple variety, such as the **Summer Pearmain** that is described below as being two varieties with the same name and the first variety being 'of the Coxe.' We noted many references describing apple varieties 'of the Coxe' and later found that William Coxe of Burlington SC was the first American to publish an illustrated book on the fruit grown in the U.S. following the American Revolution. The book was titled 'A View of the Cultivation of Fruit Trees and the Management of Orchards and Cider', and was published in Nov 1817 by M. Carey and Son, Philadelphia. This must have been the only book that orchardist and cultivators had at the time about managing and identifying fruit trees. The author had provided the various names for the same apple with each variety. The varieties of apples that we tried to focus on in this section were apples that were

mentioned in documents from southeastern part of Ohio. There was much about western Ohio and the northern orchardists but we focused primarily on the Southeast. When viewing the illustrations from different apple varieties in Appendix B, we found that the same variety may differ somewhat in color or other descriptions dependant on where it was grown (soil/climate/etc) (USDA Pomological Watercolor Collection).

This is a list of a few of the varieties of apples grown in Ohio in the 1800s and later: **Bethlemite, Broadwell, Buchanan's Challenge, Claybruk, Celestia, Cracking, Cup, Fink, Fort Miami, Highly Sweet, Jaminette, Keiser, Liberty, London Sweet, Morton, Mote Sweet, Myers' Nonpareil, Ohio Pippin, Patterson Sweet, Phillips' Sweet, Powers, Richmond's Red, Rome Beauty Scarlet Sweet, Stillwater Sweet, and Western Beauty.** More varieties are listed below….

The '**ox-eye'** apple was found in the Hillsboro Ohio area and some scions were collected from Governor Trimble's orchard. The apple was described as resembling the Vaudervere but with a different flavor and appearance (Ohio Cultivator 1847). The Vanderveer, described in William Coxe's book, was sometimes called the **Staalcubs** and it was cultivated by a family in Delaware State. In Elliott's Fruit Book (1854) the Vandervere and varieties include **Vandervere of Cincinnati, Millcreek, Vandervere Pippin, Red Vandervere, Yellow Vandervere, Yellow Vandervere, Spiced Ox Eye, Millcreek Vandervere, Imperial Vandervere, Pennsylvania Vanderevere, Striped Vandervere, Staalclubs, and Watson's Vandervere**.

The **Vanderveer Pippin** is a large, vigorous spreading tree but not drooping. Can burst at the surface of the ground during winter. Bears young and abundantly. Buds well and grafts well on root, grows strongly, forms a top readily. Fruit is large and uniform over the entire tree. Shape of the fruit is flat; color is red stripes on a yellow russety ground. Flesh is coarse and gritty. Flavor is strong and penetrating without aroma. Fruit from December to March. The fruit cooks well and keeps well. The tree is highly sought after. Brunson of Wayne County brought it to Indiana and all stock came from his. It was first carried from New Jersey by the Quakers visiting the region. The tree ages well and continues to produce.

Summer Pearmain. There seems to be two varieties of the same name cultivated in Ohio and Indiana. The first variety is 'of the Coxe' which is popular and generally cultivated. The fruit buds seem unusally hardy. Another variety brought to Fayette County Indiana from South Carolina. The shape resembles the **Vandrrveer Pippin**, color the same, ripens from July to August, the Coxes is an upright tree but his variety is spreading, vigorous growth and strong wood, Coxes is of slender growth. Does well in all soils.

Springer's seedling was shared with members of the *Columbus Horticultural Society* by a Mr. Fahnestock of Lancaster. The seedling was raised on the farm of Rev. C. Springer of Muskingum County. The samples were pronounced worthy of propagation. The fruit was of medium size, roundish pearmain shaped (resembling the cut of the '**Sweet Pearmain'** of Downing) skin on the sunny side, a fine red with scarlet stripes; shaded side, yellow, blotched with red, and russet dots; stalk slender, in a medium sized cavity; calyx in rather a small uneven basin; flesh tender, moderately juicy and slightly acid agreeable flavor – in eating from March to June.

Fink's Seedling shared by Mr. W. I. Clarke, a nurseryman near Somerset, Perry County and originated on the farm of Mr. Joe Fink. The *Horticultural Society* found it to be of good quality. Fruit is medium in size, remarkably uniform, round and slightly flattened, resembling the outline of the **Rambo**; but more uniform in size and shape. Skin is very smooth, of waxen appearance; color dull green (changing to yellow with maturity), with a pinkish, brown blush and a few russet dots, Stem very slender, in a deep round cavity;

calyx large, in a wide shallow basin. In use from April to June and will keep until the following October with proper care (Ohio Cultivator 1847).

The **Cooper Apple** was shared by Mr. Cornelius Springer of Meadow Farm in Springfield Township, Muskingum County who sent many farmers this apple. Farmers were located in Waterloo, Seneca NY, Kirby's Green Iowa, Marshall, Mississippi, Coshocton Ohio, Lancaster Ohio, Preble Ohio, Lorain Ohio, Clermont Ohio, Summit Ohio, Marion Ohio, Guernsey Ohio, and about 25 people in Muskingum County Ohio. The Cooper apple belongs to the class of autumn apples which are large and admirable fruit, like the **Fall Pippin** (Ohio Cultivator 1847).

A.H. Ernest from Cincinnati provided samples to the *Horticultural Society* which included **Knights Spitzenberg** and the **Detroit Apple** which seemed to correspond in all characteristics to the **Monstrous Bellflower (or** Belle Fleur) of the Coxe. The Bellflower spreads and droops more than other trees in the historic orchards except for possibly the **Newark Pippin**. The **White Belle Fleur (Bellflower)** is also known as **Hollow-cored Pippin, Cumberland Spice** and **Monstrous Bellflower of Coxe**. The **Newton Spitzenberg** was cultivated as the **Ox Eye** in some cases. It was believed that the **Dutch Vandervere** was one of the finest apples in the country. The Cincinnati fruit specimens were the largest ever seen. The color, bloom and flavor of the fruit were unmistakable (Ohio Cultivator 1847).

The **Golden Russet** is a fall apple. The fruit ripens in November, sometimes October and keeps over the winter. Grows well in rich sandy loams, is a strong tree but subject to winter kill. Fruit is small and oblong, the color is yellow and slight red next to the sun, called a russet there is only a trace of it on healthy trees. Described as tender, melty, juicy and spicy, in flavor it resembles the **St. Michaels pear (Doyenne)** than an apple. At the Putnam Farm in Belpre Ohio the russet was popular. Other fall apples that did well include the **Fall Harvey, Gravenstein, Lyscom, Porter, Red Ingestrie**. The **Ashmore** was a desirable fruit but was described as not doing well in a nursery. The **Ross Nonpareil** was a fall fruit of Irish origin (Ohio Cultivator 1847).

Newton Spitzenberg is a winter apple. Tree not large, is upright but not compact, wood is medium in size and growth is vigorous. Opens early, fruit varies in size, but was described as often large flesh melting, flavor rich and spicy subacid, that ripens from November to January (Ohio Cultivator 1847).

Rhode Island Greening was a winter apple. Large, very open and spreading tree, drooping, growing vigorously, opened early, not subject to frost blight; whether budded or grafted on root stock the stock would be large. Further descriptions indicated he tree had a tendency to twist and spread like a quince bush in the nursery. Fruit was very large and color of green with cloudy spots dotted with pin point black specks. Flesh breaking, tender and juicy, flavor is mild, rich and subacid. Ripens from November to January (Ohio Cultivator 1847).

Philips Sweeting, Coshocton County. Original tree from the farm of Mr. George Philips of Linton Township. In 1847, the apple tree was said to be about 34 years old. Tree was a great producer; fruit was red or striped with dark red over a ground of mottled red and yellow, darker toward the stem. The size was medium to large, nearly round; a little flattened and regularly formed, stem medium size, set in a deep narrow and regular cavity, calyx sent in a broad open and tolerably deep basin. Flesh was described as rich, yellow, tender, juicy and crisp with an agreeable sweet flavor. Season from November to March (Ohio Cultivator, 1847).

The following is a discussion on apples during the Ohio State Board of Agriculture, 21st Annual Report, of the County Agricultural Societies, Annual Meeting of the Society at Zanesville, Dec 1866, page 708, L.D. Myers & Bros. State Printers 1867.

Wednesday morning the Committee on Business reported the discussion of apples as the topic for the forenoon. The President recommended taking up first the varieties named in the Ad-Interim Report, which was done, (see page 18) with the following additional remarks:

***Ohio Nonpareil**: Members concurred in commending this as one of the best fall apples; but some doubts were expressed in regard to its general productiveness. It was admitted to be distinct from the **Cogswell**, and ripening a month or two earlier.*

***Grimes' Golden (pippin)**: All the members who had tested or known this variety spoke highly of it. On motion, it was proposed to drop the word Pippin from the name, as having no definite significance and making the name too long. So the apple will hereafter be called Grimes' Golden.*

***Mote Sweet, Celestia, Powers, And Sweet Janet**: Mr. Ross spoke in commendation of the **Powers**.*

***Fort Miami And Spafford Russet**: Those who had tried these varieties, or saw them in the orchard said they were of very good quality, but their size and color were not such as to secure for them ready sale in the markets, and it was doubtful whether the trees were sufficiently productive to render them profitable; but for amateur orchardist, a tree or so was desirable. Mr. Ross considered the Spafford better and more profitable than the Fort Miami, but not so long a keeper.*

***Knox Russet:** This name was given by the Society, several years ago, to a handsome little apple presented by Mr. J. Knox, of Pittsburg, without name, and supposed to be a **seedling of Pennsylvania**. Fine specimens were again presented by Mr. Knox, who spoke very highly of the quality of the fruit and profitableness of the variety for market. The trees are immensely productive, and the fruit always fair and handsome.*

Mr. Bateham (Ohio Cultivator) had seen the trees loaded with fruit in Mr. Knox's orchard, and thought very highly of the variety; it was of small size, but large enough for a dessert fruit—just right for setting on the dinner tables of hotels, & the trees can be found at the Columbus Nursery and some others.

***Fedkral**: Rev. C. Springer called attention to this apple as one deserving to be better known. He had seen or grown it for the past forty years; fruit always fair and profitable for market, though not of best quality; trees very productive.*

***Trader's Fancy**: This apple was exhibited and commended as a handsome, late keeping variety, supposed to be a seedling of the **Romanite (Gilpin),** and of better quality than its parent.*

***Large Sweet**: Exhibited by Mr. Strong, of Ashtabula; resembling the **Pound** or **Pumpkin Sweet**, but of liner texture; an eastern variety, not known to the Society.*

***Sweet Ramuo**: An apple by this name, exhibited by Mr. Clarke, of Lancaster, whose father received the grafts from Pennsylvania, was commended as a handsome and good fruit, though not decidedly sweet; and not the **Sweet Rambo** formerly known to the Society.*

***Spatjks**: Presented by Dr. Warder; an apple of southern origin, from J. H. Crain, of Southern Illinois; fair size, conical, yellowish bronzed, good flavor, great bearer; December and January.*

***Baccalinus**: From the same person and origin; said to be very promising in Southern Illinois; medium, roundish, handsome red; fair quality.*

***Ewalt (of Pa.)**: Exhibited by Mr. Weltz, of Wilmington, who said he regarded it as a profitable fall apple; large and fair, not first rate.*

Another apple presented by Mr. Weltz, without name; large, yellowish, fair quality; not recognized.

*An apple from Ephraim Clark, of Cadiz, resembling **White Rambo** and **White Vandevere**, was pronounced very good; may be a seedling.*

*Another, presented as a seedling, by Leander Allen, of Zanesville; rather small, deep red, smooth and handsome; resembles **Wine Sap**, but thought not quite as good.*

***Egg Top (of Northern Ohio)**: Mr. Bateham, in presenting this apple, said it was rather common along the lake shore region, but he did not recollect having seen it elsewhere; he believed it was of eastern origin, and probably had some other name. At first he was inclined to pass it as only a third-rate fruit, though quite handsome and saleable in the markets, and the tree is remarkably vigorous and productive; but on using it, as his family had done for a mouth past for cooking, he was inclined to place it in the very first rank as a cooking apple, and to advise everybody to plant a tree or two of it for that purpose, if the trees can be found at the nurseries. The fruit is light, and rather tough and acid when eaten from hand, but tender, sprightly and delicious cooked; and his wife says it is the best of all apples for stewing or preserving in quarters, keeping the shape without any toughness; also fine for baking.*

***Evening Party**: Specimens exhibited, part ripe. Dr. Warder said he had seen it very fine, as an early winter fruit, at Fort Wayne, Ind.; and Mr. Kelson, of that place, thinks very highly of it.*

***Liberty**: Presented by Mr. Wood, of Jefferson county; a handsome, late-keeping variety, originating in Delaware county, and quite popular in the Columbus market.*

***Prolific Beauty**, (of the old Putnam list): Presented by Mr. Townsend and others; a large striped apple of second or third quality; very productive, profitable for market—not as good as the next one:*

***Rome Beauty**: Fine specimens from various persons. All concurred in its commendation as one of the most profitable market fruits, especially for Southern Ohio; tree vigorous and very productive; fruit generally large, fair and handsome—good second-rate.*

***Roxbury Russet**: This old popular favorite is not so abundant now as thirty or forty years ago, when it was the leading variety for shipment.*

***Smith's Cider**: Several fine plates presented. All concurred in recommending it as a most reliable and profitable variety, especially valuable for the Southwest, and places where the apple crop often fails. Mr. Bateham said it was more profitable by far for marketing around Columbus than any other variety in bearing there. He counted the **Ben Davis** as near of kin to it, and was of the opinion it would prove as*

sure a crop and of similar quality. J. R. Miller also spoke very highly of the ***Smith's Cider****, from observations around Springfield.*

Baldwin*: As usual there was quite a diversity of opinion in regard to the conduct and value of this apple in central and southern Ohio. Several growers said it did well on hilly and sandy locations, and generally in young orchards; but on clay lands and old trees the fruit falls off and rots badly. Dr. Warder said the trees winter killed badly in Indiana.*

R. I. Greening*: This was spoken of as having the same faults, only more so; but a very desirable fruit for cooking.*

Newtown Pippin*: Fine specimens, from a number of orchards, on the tables, and all the growers said the variety had done better the past two years than for many years previous, the fruit being less affected by smut and specks, so that they had hopes it might again be profitable and it was certainly a desirable fruit for amateurs. Mr. Boalt, of Norwalk, said he had not observed any improvement in it.*

White Pippin*: This continues to serve as the market substitute for the preceding; the fruit larger and fairer, though not so fine in quality. The old question of its identity with* ***Canada Reinette*** *was again suggested by a letter from, but all present seemed to regard that point as settled years ago. Mr. Teas and Mr. Mendenhall, of Indiana, said that the* ***White Pippin*** *was very popular with them.*

Peck's Pleasant *was shown more freely than at any former meeting so far south; and all who had tested it, commended it as one of the very best apples for early winter; the fruit always fair; tree not very handsome but the crop generally abundant and quality good.*

Northern Spy*: Large specimens exhibited, and testimony not favorable as to the quality of the fruit, except at the north. Trees very long coming into bearing, but produce well afterwards; fruit drops badly, and does not keep well.*

Wine Sap*.—Mr. Ohmer, of Dayton, and Mr. Strong, of Ashtabula, spoke favorably of this variety; one of the best winter apples for dessert; productive and profitable.*

Jonathan*: Mr. Morrison, of Belmont, and Mr. Townsend, of Zanesville, commended this variety. Fruit very handsome and good, for dessert; tree rather slender, and apt to overbear, especially while young; crops should be thinned.*

Swaar*: Mr. Campbell, of Delaware, said this was one of the best winter apples with him. Fruit fair, and hangs well on the tree; rich limestone soil. Mr. Wood thought it rather a poor bearer. Mr. Hoopts of Pennsylvania considered it a good bearer.*

Belmont*: Mr. Edgerton, and various others, spoke highly of this variety, for early winter—only regretting it will not keep very long; sometimes rots at the core. The tree proves quite tender at the West.*

Bentley Sweet*: Specimens by Edgerton and others. Mr. Morrison spoke of it as a very good and profitable apple tree—a fine grower and abundant bearer; fruit fair and handsome, keeping longer than any other; good, sweet apple; April to May. Several others commended it.*

***Sigler's Pound**: By Jos. Sigler, McConnellsville. Specimens very large and fair, averaging nearly as large as **Gloria Mundi**, and not as coarse as that variety; one hundred will fill a barrel. Mr. S., and others who were acquainted with it, said it was a good and profitable fruit, hanging well on the tree and quite productive. It originated on the farm of Mr. Sigler. He has a number of other good seedlings.*

***Cooper**: Mr. Bateham inquired whether this variety maintained the reputation given to it years ago. From what he had seen of it he did not think it was a profitable or reliable fruit. Mr. Townsend said it had not done well for a number of years past, until the present season. Mr. Springer said it had not proven as reliable as he had expected; he would only recommend it for amateurs, as one of the best fall apples when it does well. This is the opinion of H.N. Gillett about the Cooper in 1847 written to and published in the Ohio Cultivator, "The Cooper is in this climate a very beautiful and excellent fall apple in use from September to November and esteemed for the table, for cooking and for drying. The fruit is large, with a very smooth and even surface, color, and light yellow or nearly white, occasionally presenting faint red stripes when grown in the sun. Tree, a good grower and productive ; the bark upon the trunk and older branches, quite rough, frequently presenting a scaly appearance, which is quite peculiar, and renders the variety easily distinguished, even in young orchards. In the nursery the trees are thornier than most other grafted varieties. The Cooper has its equal, and I think its superior, in what is here called the Long Pearmain, ripening at the same time and exceeding in size and beauty."*

***Willow Twig**: Mr. Townsend says this was still extensively grown for market, and was profitable as a long keeper; still he did not think it should be planted, now that varieties of better quality can supply its place. Mr. Springer said the Willow Twig had not done as well as usual this year.*

*Mr. Boalt, of Norwalk, presented a fine red apple, resembling the **Newtown Spitzenberg**, supposed to be a seedling grown by Hosea Townsend, of his neighborhood.*

The following is from The Ohio Cultivator (1855), Volume XI, No. 5, article titled 'Remarks on Apples':

***Bracken**: This apple has been several times noticed in this paper and other works, as an apple supposed to have originated in Bracken Co., Ky. resembling Princes' Harvest, but somewhat earlier, and a little smaller; but several persons who procured it, have expressed the belief that it is identical with the **Harvest**. We have frequently seen in the Cincinnati and other markets, a very early apple brought from Kentucky, of smaller size, whiter color and less flavor than the **Harvest**, and which we had formerly supposed was the Bracken ; but having had the latter variety in bearing a couple of years since, we concluded it was not the same. We think it may prove identical with the **May Queen** described below.*

***Bracken**: Mr. Gillett (of southern Ohio) says of the Bracken, "grafts of it were brought to this county from Bracken Co., Ky., where it was thought to be a seedling, and such I believe it; but in nearly every particular, the fruit, time of maturity, habits of growth, & etc, it agrees with the **Early Harvest**. I think the **Bracken** is a few days earlier, and the trees rather more productive. Mr. Ernst, to whom I sent specimens a few years ago, pronounced them identical with the earliest ripe apples seen in the Cincinnati market."*

***Early June**: Under this name Mr. Gillett says he cultivates a little apple which originated as a seedling in his vicinity, and resembles somewhat the **Bracken** and **Harvest**, but is a trifle earlier than either. It is not the **Carolina June,** which variety he has never seen.*

*The **May Queen**, Mr. G says, is the earliest apple known to him. "It was brought from North Carolina to Cabell Co., Va.,(now West Virginia) about 40 years ago, and planted in the orchard of Robt. Wilson, who*

is an uncle of my wife, and from whom I obtained the grafts. It is below medium size, of a dull greenish yellow color, subacid flavor, and very fragrant. Trees rather slow in coming into bearing. This fruit from the old trees in Virginia has been shipped to the Pittsburgh market on the 11th of June; and in N. C. it ripens in May.

***Golden Drop**: Grafts obtained under this name by Mr. G. from Washington County, he thinks are identical with **Early Harvest**. The **Drop d'or** of the Eastern nurseries is a larger and later apple.*

7.0 GRAFTING

Basically, grafting is inserting a bud, shoot or scion of a plant into a groove, in a stem or stock of another plant which continues to grow.

We found many types of grafting methods and techniques and many were presented in the historic documents such as "Elliott's Fruit Book or the American Fruit Growers Guide in Orchard and Garden (1854)". There are many online videos about grafting that offered good advice and tips. Those that we found most useful were the *Seed Savers Exchange (Decorah, Iowa)* webinars with Dan Bussey.

Grafting knives are the choice of the user as was the wax or other method of covering the wound. The most important aspect of grafting knives is keeping them sharp and clean. For securing the graft, we used the Royal Horticultural Societies' method of plastic wrap as seen in their video on 'Wisley through the Seasons' DVD (Royal Horticultural Society 1999).

We also used another method rather than grafting which incorporated a "Rooter Pot". According to the *Lee Valley Supply* website where we purchased the pots, "It works on an old system of propagation called air layering. With the traditional air layering system you use a black plastic bag to hold moss around a wounded stem. New roots would develop where the stem was wounded. However, that system is awkward to install, doesn't hold extra moisture, and is difficult to add water to or inspect the root progress. The rooter pot system addresses all those problems and makes it amazingly easy to clone big plants in a short time. Just choose a branch on a mother plant that you would like to clone (maximum 5/8" in diameter). Next, wound the branch by removing a strip of bark all around the stem and then put rooting hormone on the wound (our root stimulator is ideal for this). Attach the rooter pot to the stem over the wound and fill the reservoir in the base with water. Now pack the interior of the pot with moist, soilless (peat-based) potting medium. Put the top on and cover the outside of the translucent pot with the dark stick-on label. (The label is necessary to keep sunlight off the roots. It is also a place to record the start date.) Every week or two add a bit of water to the pot if necessary – we found our curved-tip syringe perfect for this (Lee Valley Supply 1998-2015)."

We liked the rooter pots and tried various soilless mixes. One inexpensive mix we tried was simply tobacco mix. We did find it difficult to keep them moist in the dryer periods so we changed to seasonal periods that would be less drying.

8.0 ADVANTAGES TO PRESERVING ANTIQUE AND HEIRLOOM APPLE VARIETIES

An abundance of apple varieties that were once popular with the early settlers have nearly disappeared from the marketplace of today. Early orchardists were passionate about experimenting and discovering new apple varieties with the objective of producing a fruit that was disease resistant, that produced in abundance, and that preserved and shipped well; an all-around 'perfect' apple with wonderful taste and

economic benefits for the farmer. The 'perfect apple' was sought after in historic times and today by growing seeds from a multitude of apple trees and grafting scions of the favorite trees to clone more of that favorite variety. In all the historic literature, the number of apple varieties being produced by farmers across Ohio was astounding and in that day and time the sharing of that information and sharing tree scions and plants was rapidly expanding the diversity of the apple in Ohio with outstanding and not so outstanding varieties. Apples though, are one of the few fruits with a multitude of uses, so a not so outstanding apple (or 'spitter') may be a great cider apple or used for making apple butter.

Decades or centuries ago, apples were used for eating, baking, cider, feeding to livestock, making apple butter, and more; such as they are today. These same antique and heirloom apple varieties with different tastes and textures can provide added income for today's farmers that distinguish themselves in the marketplace by growing those special varieties that no one else grows. This can be achieved by finding, preserving and growing the old varieties or by growing and producing new varieties. For consumers, the opportunity to buy a fruit with unique taste that is grown locally and maybe nowhere else in the country is an opportunity to experience the diversity of the apple and the health benefits of the fruit. The flowering trees are both beautiful and a source for pollinators which in turn helps increase income for local beekeepers that rent hives for pollination at orchards. The management of the orchard comes back to life and locals can learn about growing, pruning, and grafting their own backyard trees. Apple trees can be used as ornamental trees in landscaping projects and yards with tree varieties that reach different heights from dwarf to very large and fruit maturing at different seasons of the year. The trees make a good addition to backyard wildlife habitats as a food source and nesting tree.

Apple trees can teach many lessons in the K-12 classroom. Schools with enough land could grow their own small orchard for hands-on lessons in diversity, genetics, pollination, identification, photosynthesis, food culture, culinary use, history, seeds and flower identification and terminology, observation skills, art, research journaling and more. Apple orchards can provide jobs….a large chain grocer located in Huntington WV, directly across the Ohio River from Lawrence County stocks apples from an orchard in Wheelersburg, OH (Scioto County), they stock local honey and locally made condiments while providing income for local farmers and adding new flavors and fresh food to their shelves. Consumers tend to see the importance in purchasing the locally grown products.

The antique and heirloom varieties may also be of interest to apple breeders that use traditional breeding and other techniques to improve the fruit.

In Ohio, the thoughts on diversity began to shift to thoughts of monoculture as seen in an article published in the *Ohio Cultivator* in 1847. Ohio began looking at a report developed by the *New York State Agricultural Society* in 1846 for making "a selection of the best varieties of apples (not to exceed 30 varieties) for domestic use and exportation to be cultivated in the State of New York." The report embraced these thirty-varieties of well-known standard fruits with the idea of increasing prosperity for the growers with bountiful yields of crops. Another objective for focusing on these choice 'standard fruits' was protection against fraud, or 'grafters' that went from orchard to orchard grafting inferior stock into their orchards. As stated in the report "by inserting worthless varieties in their trees, which are only detected after years of painstaking solitude on the part of the cultivator, who has either then to abandon his blighted expectations altogether or renew his orchards with well selected fruits, after so dearly paying the penalty for his ignorance, or his inattention." According to the report, "to guard against this bad practice is one object of the labors of this committee and to impress upon the attention of every fruit grower the most diligent care in the selection of his fruits, as well as in their future cultivation." The committee came up with a list of criteria for the 'perfect' apple that would thrive in the different climates

and soils of NY State. The list of varieties were prepared for summer, fall and winter apples and included the **Early Strawberry, Rambo, Detroit Red, Newtown Pippin, Northern Spy, Talman's Sweeting, Baldwin** and **Jonathan** which are a few apples that have been touted over and over in the historic documents of being some of the best apples of that time period.

Today, *Cornell University, Department of Horticulture*, located in New York State, is one of the most well-known horticulture teaching and research facilities in the United States. The New York State Agricultural Experiment Station became operative in 1882 and in 1887 began evaluating fruit. The station became a part of Cornell University in 1923. Over 700 acres of land are devoted to test plots, orchards, and vineyards.

In 2013, two newer apple varieties bred by Cornell University, the Snapdragon and Rubyfrost, were handled a bit differently when selling to growers. Apple growers in New York, after organizing under the *New York Apple Growers Association*, agreed to pay Cornell fees and royalties for the right to plant and sell these new varieties. The apple varieties will be grown exclusively in New York State which helps growers market, develop, and manage the supply of these new varieties. Growers can manage the demand and promote the apples as an exclusive of New York (Cazentre 2013).

For the backyard breeder or seasoned orchardist, one thing is for sure, developing an outstanding apple variety is certainly the intellectual property of the grower since there is no way for anyone else to duplicate it without a clone/graft of that exact tree. So the cultivator can share with the world or limit the propagation of new varieties by use of patent's and royalties. But does the concept of patenting and selling 'intellectual property' promote and maintain diversity?

Breeders often plant thousands of seeds in the hopes of developing an outstanding apple. It could take the new trees four or five years to produce fruit. Once the trees are producing the grower may find an exceptional apple….and maybe not.

9.0 SEARCHING FOR OLD ORCHARDS IN LAWRENCE COUNTY

The apple has long been the most popular of our tree fruits as shown in the history of settlers that carried the apple from their distant homes to plant in the new land. Apples, for many of us, can call up pleasant memories.

Old abandoned orchards are those that are no longer managed for human consumption or no longer grown for commercial purposes. The old orchards were planted in cleared areas providing ample sunlight and air circulation around the trees. As people eventually moved off the land and stopped farming, many orchards were abandoned and quickly grown over with taller woodland trees. The remaining apple trees and remnants of old orchards were no longer maintained for fruit production.

In Lawrence County, we had prior knowledge of some orchards as described earlier in this report. When revisited, we found that in some cases the forest had grown back around the apple trees crowding and shading the trees until they declined and died as we found on Davidson Hill which was an advanced abandoned orchard with mature hardwoods interspersed with new housing development. Although the *Hamilton Farm* on Davidson Hill still had a viable and management orchard. Some orchards like the more recently abandoned *Montroso Orchards* still had an open habitat with herbaceous ground cover, non-mowed grass, weeds and clumps of shrubs. At *Hillgate Farm*, the orchards had mostly been removed and

the pasture condition in a successionally advanced state with mature hardwoods. Some areas of the pasture were more of a stage with small shrubs and small trees interspersed with a groundcover of high grass and native plants. While most of the antique/heirloom apple trees at *Hillgate Farm* had been removed or had died, there were a number of apple trees that had grown from seed. See photographs in Appendix C of apples collected. The former *Gillen Farm* that was located where the Chesapeake By-pass currently exists is gone but new apple trees are growing alongside the by-pass that may be from seed. The trees were noted flowering in the spring. The orchards remembered from the historic *Gillett Farm*, home of the Rome Beauty, the last of the trees had been removed to make room for more row crops several years ago. The farms that surrounded the Gillett property with prime farmland are now primarily housing developments. The Strawberry apple trees described in Huff genealogy located on Little Buffalo Creek no longer exist. Other known orchards along that road which were visible in the 1970s, no longer exist and new residential development had cleared much of the area where orchards existed. At the former Nelson Cox property (now Ater property), there were few apple trees visible in the 1970s but there were remnants of what was thought to be the Ensee apple during that time. Some of the property was mowed pastureland with grazing cattle, other areas were successionally advanced state with mature hardwoods so there still may be some trees in existence that have not been located. See Appendix C for photographs. The Heffner Farm (former Wilkes Farm) had remnant apple trees with one still standing but dying. The apples from those trees were remembered as bright red and large, possibly the Rome Beauty. Habit of the existing tree is upright with drooping of upper limbs. Dave Wolfarth's property on Scary Creek has a number of apple trees in old pastureland that are in a successionally advanced state with mature hardwoods. The trees are shaded by the surrounding forest. They do not appear to be of great age but could be suffering from lack of sunlight. In the past year, one tree in which apples were collected was lost in a storm. See photographs in Appendix C of apples collected. The *Wilson Farm* was not noticeable as once being a farm since it was primarily mature woodlands.

We found that locating old orchards is a labor intensive process. Even advertising for citizens to report their old apple trees, many may not know they exist on their property or have not explored all of their property, some were not familiar with apple trees. It is difficult too for some to judge the age of the trees. As our research progressed we became less inclined to focus on varieties that others are beginning to propagate and sell and onto those older varieties and trees that are thriving regardless of variety. Our focus also drifted toward growing from seed.

Although our grant focused only on Lawrence County Ohio, we were inclined to notice every apple tree we came across regardless of our whereabouts. While working in the mountains of West Virginia (WV) at first I would notice a tree, then another, then an old orchard and another. The apple trees were everywhere. After reading Michael Pollan's Book 'Botany of Desire' and watching the documentary, I began to wonder if the mountainous areas of West Virginia were replicating the climate and conditions as the apples country of origin, Kazakhstan. I also wondered if the harsh winters of WV possibly killed any insects or pests that may be bothersome to the trees. One apple tree that I looked at this summer in WV was in a barn lot with cattle, there was no grass around it, only mud, yet the tree was loaded with large, bright red apples. The orchards are old but the trees are not decaying and falling down.

10.0 CONSTRUCTING THE FENCED ENCLOSURE

The construction of the fenced enclosure was to protect root stock, grafted trees and young seedlings/saplings from wildlife. The materials utilized included cattle panels, wooden fence posts and flexible yard fence/wire. The bottom of the fence which had a space between the bottom of the Cow Panel

and the ground was enclosed by using flexible yard fencing with smaller openings that was made to swing up when using a string trimmer under the fence panels. The panels were 16 feet long and 50 inches in height with four gauge wire and sag resistant. Below is a photo of the enclosure while under early construction. We used the panels so we could easily expand the enclosure or in the future remove it if needed. The sloping hill to the right of the photo is the area where the larger apples trees will be moved once they reach a sufficient size.

11.0 SUMMARY AND CONCLUSIONS

The project goal/objectives were to locate, identify, and record antique/heirloom trees in Lawrence County and preserve and propagate those trees for the future. What we found is there are few of these 100 – 200 year old trees left in the county due to development, mature forests overtaking the old orchards, disease, and other reasons but there are a number of trees that have come up from seeds from these heirloom/antique varieties. These 'volunteer' apple trees can be found along roadways, old farms, abandoned lands, public lands, etc.

For the approximate 16,000 known apple varieties from the past, there are many farmers/orchardists across the country working toward a similar goal of identifying, preserving and selling heirloom/antique apple varieties to increase diversity in flavors and uses of the apple. There are fewer farmers planting seeds from the Kazakhstan apple forests and seeds from American heirloom/antique varieties to increase diversity and unique traits that will help to increase the production and survivability of future apple orchards. This type of research is often the objectives of many of the agricultural universities in each state, like Cornell University in New York State that still uses the traditional method of planting seeds to obtain new apple varieties even though it can be a lengthy process in which thousands of seeds are planted. So, how can farmers/cultivators/growers help and partner in the development of new apple varieties? This is a question I will be asking universities.

The last surviving wild apple forests in the world are found in the Tien Shan mountain range of southern Kazakhstan. The wild apple (Malus sieversii) grows on the slopes of the mountains and are considered to be an important gene pool. Almaty, once considered the capital of Kazakhstan, is known as the

‘fatherland of the apple’. The widespread use of uniform apple varieties and the shrinking of the wild apple forests of Kazakhstan can cause reduced genetic diversity, particularly since the cultivated apple is the second most consumed fruit in the world and domestic apples are plagued by pests and disease. The wild apples from the Tien Shan region can show resistance to certain pests and disease, show tolerance of heat, drought or increased rainfall, or use water more effectively and efficiently which could add production and survivability to the apple orchards. The diversity of apples along with different traits is not due from continual reproduction of one variety but the unknown apples that develop from seed.

One idea I take from the UK. Because of the age of some of their gardens many became concerned about losing the old varieties of flowers and garden plants. In 1978, *Plant Heritage* was established with the goal of encouraging and overseeing the establishment of well-documented and researched collections of garden plants. *Plant Heritage* works with horticulturalists, botanists, conservationists along with both amateur and professional gardeners for plant preservation. Through national registered collections, the organization encourages the conservation of garden plant varieties. Citizens might hold a collection of a particular marigold or a number of varieties of heirloom petunias, etc. Why not use this same concept with crops? Designate and register ‘keepers’ of these collections. It maybe only one variety of watermelon or a certain variety of corn, it maybe a small collection or large, but it allows the community to participate in the preservation of our food supplies while maintaining diversity of plants. The same concept can be used for rare or endangered plants like many of the native plants or an entire forested area held in trust.

Here is a description of the program from the RHS website....
“Our main conservation vehicle is the Plant Heritage National Plant Collection® scheme where individuals or organizations undertake to document, develop and preserve a comprehensive collection of one group of plants in trust for the future. Most of the collections are based around a related group, for example a collection of oaks or daffodils. This allows the scheme to develop systematic coverage of cultivated plants in the United Kingdom (Plant Heritage-UK).”

For *Hillgate Farm*, we intend on continuing seeking out and collecting heirloom/antique apple varieties and propagating but we are adding to our farm: an apple forest. We intend on growing from seed and planting on old pastureland a variety of apple seeds along with the ‘volunteer’ trees already emerging. The new trees will not be managed other than clearing around them, there will be no pruning, trees will be planted randomly on ridge tops, slopes and bottoms, good soil and not so good. The progress of the trees will be recorded, sampled, photographed and seeds collected.

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RESEARCH LOCATIONS

Wayne National Forest Headquarters 13700 U.S. 33 Nelsonville, OH; Marietta Ranger District 27515 State Route 7 Marietta, OH (740) 373-9055; Ironton Ranger District, 6518 Ohio 93, Lawrence County, Pedro, OH 45659 Phone (740) 534-6500.

Briggs Lawrence Public Library, Local History and Genealogy, 321 South 4th Street, Ironton, OH (740) 532-1124.

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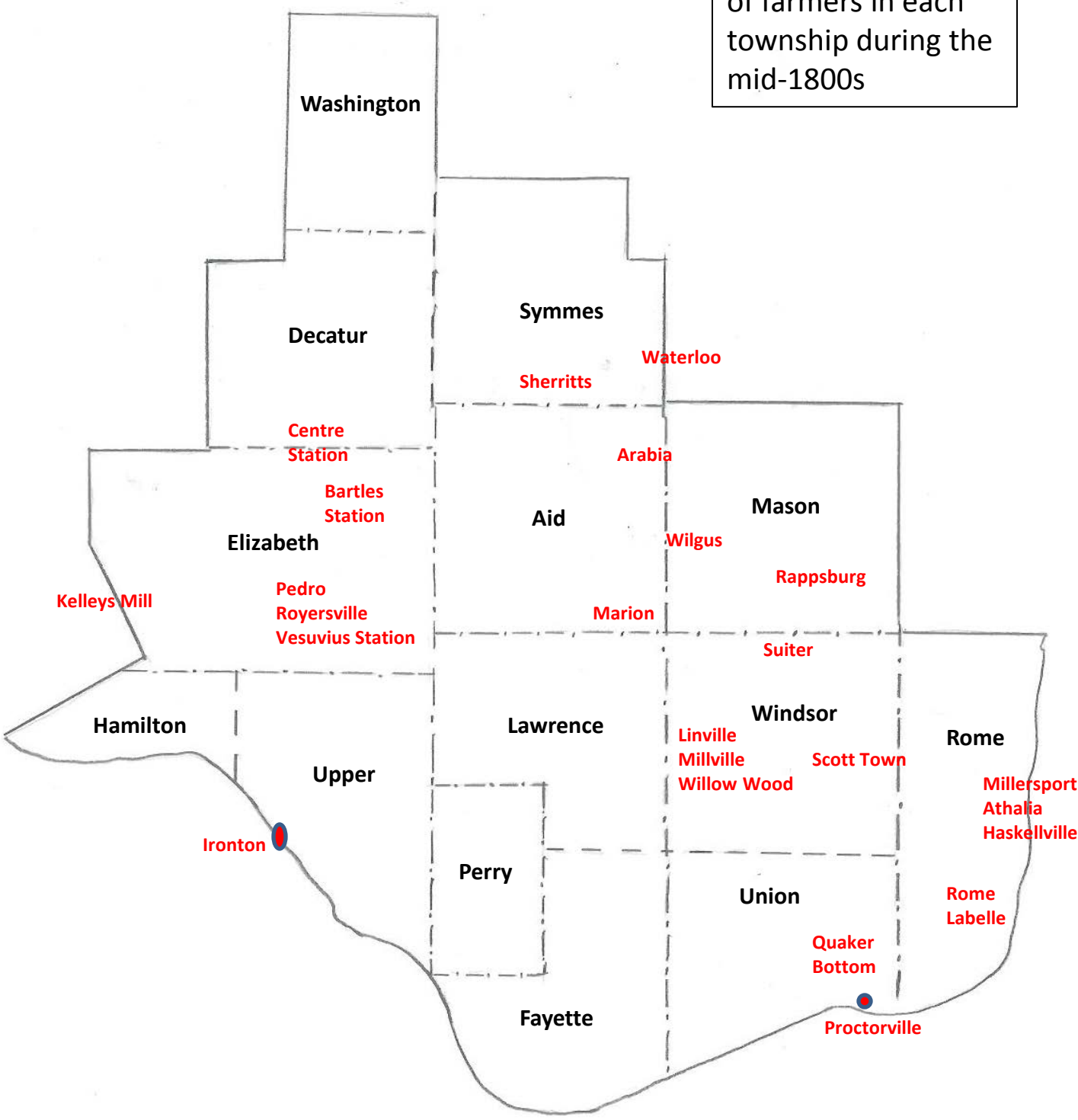
Campus Martius Museum. Three floors of historical exhibits focusing on the Northwest Territory and its first settlement, Marietta.601 Second Street Marietta, Ohio 45750.

Washington County Public Library, Local History & Genealogy 615 5th Street, Marietta, OH.

APPENDIX A
Township Location Map
& Farmers in Each Township

LAWRENCE COUNTY OHIO TOWNSHIPS

See attached for list of farmers in each township during the mid-1800s



MASON TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Mason Township borders Gallia County on the east and north, Aid Township to the west, and Windsor Township to the south. The township contains historic and current villages of Greasy Ridge, Arabia, Rappsburg and Wilgus. See attached map for Location.

Settlements to this township occurred around 1810 with most activity around Buck Creek. The township has 36 sections.

Farmers included but not limited to:
John Alesesser, Biven, Brumfield, Clarey, Corn, Rufus Ellcessor, Rees Fox, John Hagen, Hally, Lunsford, Massie, James Marcum, Nance, Powell, Payne, R. N. Robinson (from Washington Co), Abner Rapp, Augustus Rapp, William Rose, Rucker, Slone, Thomas Tagg, Vermillion, John Wilson, Wiseman, Monroe, Warren.

ROME TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Rome Township is bordered by the Ohio River on the east and south, Windsor and Union Township on the west, and Gallia County on the north. See attached map for Location.

Initially known as Center Township, but later became known as Rome Township around 1821. The township has 17 sections and is primarily flat bottom land along the river. Settlements to this township occurred around 1787 by Joseph Miller. Historic and current villages within this township include Haskelville, Athalia, Millersport (now Miller), the village of Proctorville is actually located in the southeast corner of Union Township. Most of the southern area of this township was known historically as Labelle. This is the township known for the origin of the Rome Beauty Apple.

Farmers included but not limited to:
Armstrong, Bird, Bowen, Brammer, Burcham, Cauliflower, Clark, Cooper, Dillon, Eaton, Henry Edwards, Ellis, Galloway, Gardner, Gillett, Guthrie, Flaure, Fulks, Fuller, Hall, Hamilton, Haskell, Henderson, Howard, Charles Huff, Squire Johnson, Jones, Kaneff (from Belmont Co), Kingery, Knight, Lafoon, Lewis, Loudoun, Farley, Forgey, McKinley, Meyer, McCown (from Kanawha Co WV), Joseph Miller, Monroe, Null, Thomas Morrison (from Guernsey Co), Nance, Neal, Alfred Paxton, Poage, Jacob Proctor, Jack Proctor, Rolph, Ross, Rucker, Runyan, Sayre, Schneider, Simms, Snyder, Taylor, Terry, Thomas, Turley, Varnum, Waddell, Walls, Ward, Webb, White, Charles Wilgus, Wilkes, Wilson, Woodside

ELIZABETH TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Elizabeth Township borders Scioto County on the west, Decatur Township to the north, Aid and Lawrence townships to the east, and Hamilton and Upper townships to the south. See attached map for Location.

The first settlement in Elizabeth Township was located at Kelley's Mills which bordered Scioto County. This was prior to the establishment of Lawrence County. State Route 93 is located in this township. Pine Creek, Cannons Creek and Storms Creek all empty into the Ohio River. Early activity in this township included iron and mining activities. Iron Furnaces included Centre at Superior, Etna, Lawrence Pine Grove, Old Union, Old Empire and Vesuvius. Due to the continued use of charcoal by the iron furnaces, the land was heavily timbered and left eroded with watershed impacts by the close of the iron and mining industries. The USDA Wayne National Forest and Ohio Dean State Forest were established in this area and construction of Vesuvius Lake was assisted by the Civilian Conservation Corps (CCC) in the early 1900s. The township is approximately 52 square miles.

The bulk of the land was owned by the iron and mining companies. Historic and current villages and non-incorporated areas included Kelley’s Mill (located in Section 14), Bartles Station, Culbertson, Ellison, Pedro, Royersville, and Vesuvius Station.

Farmers included but not limited to:
Allen, Anderson, Armstrong, Dirker, Dugan, Finney, Knapp, Fred Monning (from Hanover, Germany), Porter, Pryor, Rogers, Smith, Sweeney, Taylor, Wagner, White

FAYETTE TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Fayette Township is bordered by the Ohio River to the south, Perry Township to the west, Lawrence Township to the north and Union township to the east. William Davidson, a revolutionary war veteran, was the first settler in this township around 1798. Burlington Ohio was Lawrence County's first county seat which included a courthouse and jail. Burlington is located within Fayette Township. Later the county seat was moved to Ironton OH. Currently this township is extensively developed with housing and industry. See attached map for Location.

Fayette Township is approximately 28 square miles. Historic and current villages and non-incorporated areas included Burlington, South Point, Sulphur Springs, and Sybene. Streams include Leatherwood Creek, Lick Creek, Rankins Creek, Salliday Creek (now called Solida) and Sandusky Creek which all empty into the Ohio River.

Farmers included but not limited to:
Ankrim, Anderson, Ballard, Barber (from Grayson co VA), Brammer, Baize, Carrico, Crawford, Crow, Davidson, Dowling (from Grayson Co VA), George Duty, Edgell, Freeman, Ferguson, Gilbert (from Lee Co VA), Hall, Harmon, Hastings, Holderby, Samuel Huff, Johnson, Keeney, Kilgore, Kite, Langdon, Leighty, Lynd, Noble, Moore, Pritchard (from Grayson Co VA), Ransbottom, Remy, Ricketts, Riley, Rogers, Romans, Russell, Smith, Snyder, Spear, Thomas, Terry, Turvey, Ward, Waller, Whaley, Willis, Wilson, Winters

HAMILTON TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Hamilton Township is bordered by Upper Township on the east, the Ohio River to the south, Elizabeth Township to the north, and Scioto County to the west. The township contains historic and current villages and non-incorporated areas of Hanging Rock, Iron, and New Castle. See attached map for Location.

The land was primarily owned by iron and mining companies in this township. The two private landowners living in this township in the mid-1800s were John Dempsey and Sarah Means. There was no evidence they were farmers.

SYMMES TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Symmes Township borders Gallia County on the east and north, Decatur and Washington townships on the west, and Aid Township to the south. Stewarts Knob is the highest point in the county. The township contains historic and current villages and non-incorporated area of Waterloo located on the border of Gallia County. The township was established around 1820 with Silas Spurlock building the first cabin within the township. Primary streams within the township are Symmes Creek, Johns Creek and Buffalo Creek. The township includes 34 sections. See attached map for Location.

Farmers included but not limited to:
Addis, Armstrong, Asbury, Brooks, Burk, Cade, Cauley, A.J., Handley, Justice, Kelley, Kiser, Little Malone, Mossman, McDaniel, McDonald, Miller, Nelson, Pearce, Robinson, Spurlock, Stewart, Vermillion, Wiseman, Wickline, Williams, Woolum

WINDSOR TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Windsor Township borders Rome Township on the east, Lawrence Township to the west, Mason Township to the north, and Union township to the south. The township contains historic and current villages of Scott Town (now spelled Scottown), Linnville (now spelled Linville), Millville, Willow Wood, and Suiter. See attached map for Location.

The first settlement was near Scottown. Peter Wakefield was the first settler around 1827. He was a grist mill owner and the first justice of the peace.

Farmers included but not limited to:
Brammer, Burcham, Cade, Capper, Carson, Nelson Cox, Day, Dillon, Dorman, Dunfee, Earles (from Lee Co VA), Finch, Forgey, Gerlach, Elisha Gillett, Gruber (from Prussia), Hart, Hayes, Higgins, Holchuw (from Noble Co OH), Holderby, Hunt, Johnson, Jones, Keaton, Lafon, Lang, Lemley, Mann, Mannon, Moberly, Morrison, Moulter, Murdock, Neff, Null, Pemberton, Pinkerman, Pittinger, Pratt, Reed, Rowe, Russell, Schneider, Simmons, Singer, Hiram Smith (from Belmont Co OH), Templeton, James Tagg (from England), Thacker, Wilgus, Wakefield, Wall, Allen Wilson

AID TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Aid Township borders Mason Township on the east, Elizabeth and Decatur townships to the west, Symmes Township to the north, and Lawrence Township to the south. The township contains historic and current villages of Aid (formerly Marion), Rising Sun and Arabia which border Mason Township. See attached map for Location.

Settlement in this township occurred around 1815. The first school teacher was William Gillen. The township has 36 sections. Primary streams include Aaron's Creek, Elkins Creek, Paddle Creek, Sharp Creek and Symmes Creek.

Farmers included but not limited to:
Addis, Bradshaw, Burton, Blankenship, Bradshaw, Cannon, Clark, Delong, Delawder, Depriest, Engle, George Flower, Greenlee, Griffith, Higgins, Sam Jones, Justice, Kimball, Lambert, Leety, David Martin, Neal, Nelson, Payton, Russell, Roush, Simmons, Shipton, Todd, Vermillion, Sam Warner, Willis, Alpha Wilson, Wiseman

PERRY TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Perry Township borders Fayette Township to the south, Fayette and Lawrence townships to the east, Lawrence to the north and Upper Township to the west. The township contains historic and current villages and non-incorporated areas of Deering (spelled Dearing on some historic maps), Forestdale, Rockcamp on the border of Lawrence township and Sheridan. See attached map for Location.

William Davidson and Philip Salliday settled in this township around 1799. Settlement in this township occurred around 1815. The first school teacher was William Gillen. The township has 36 sections. Primary streams include Ice Creek, Lick Creek, and Salliday Creek (now called Solida). This township had iron and mining company land owners in the southern, northern and western parts of the township.

Farmers included but not limited to:
Adkins, Allen, Boll, Brammer, Brubaker, Bruce, Davidson, Deering, Edgell, Fetter, Fields, Gates, Hammond, Haskell, Hill, Bellfield Johnson, Felter, Kouns, Leighty, Maloan, Mankins, McKees, Melvin, Moore, Pemberton, Rickets, Russell, Salliday, Sperry, Steed, Talbott, Waller, Willis, Winters

WASHINGTON TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Washington borders Scioto County to the west, Jackson County to the north, Gallia County and Symmes Township to the east, and Decatur Township to the south. The township contains historic and current villages and non-incorporated areas of Blackfork. Iron furnaces include Olive Furnace, Pioneer and Washington Furnace. See attached map for Location.

Settlement in this township occurred around 1828. There was a grist mill built on Brady's Fork of Hales Creek around 1840. The township land was primarily owned by the iron and mining companies until the early 1900s when most of the land was incorporated into the USDA Wayne National Forest due to the damaged condition of the land, erosion, and damage to watersheds created by the iron and mining industries. Telegraph Road which runs east and west was once known as the Old (670) Gallipolis Road and Portsmouth State Road. Primary streams include Cambria Creek, Kimball Creek, Hales Creek, and Brady Run.

Farmers included but not limited to:
Cook, Edwards, Jones, Malone, Thompson, Wolfe.

UPPER TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Upper Township borders the Ohio River to the south, Perry and Lawrence townships to the east, Hamilton Township to the west, and Elizabeth Township to the north. The township contains historic and current villages, cities and non-incorporated areas of Ironton, Coal Grove, Hecla, and the upper northwest corner borders the historic New Castle. See attached map for Location.

Settlements to this township occurred around 1820. This township included the Iron Furnaces of Etna, Sara, Monitor, and Hecla. Two other large industries that left their mark on the landscape were Carlye Tile and Alpha Portland Cement Plant. This township is currently well developed with housing and businesses. Much of the land in this township was owned historically by the iron and mining industries.

Farmers included but not limited to:
Cory, Davis, Hassey, Howell, Jones, Keating, Kelley, Norris, May, Peterson

DECATOR TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Decatur Township is bordered by Symmes and Aid townships to the east, Washington Township and Scioto County to the north, Scioto County to the west and Elizabeth Township to the south. The township contains historic and current villages and non-incorporated areas of Greasy Ridge, Arabia, Rappsburg and Wilgus. See attached map for Location.

Settlements to this township occurred around 1810 with most activity around Buck Creek. Much of the township in the 1800s was owned by iron and mining companies and their company owners. This was a township left severely damaged from the iron furnace and mining activities. After the iron furnaces closed and mining ceased, some of the land became part of the USDA Wayne National Forest and Dean State Forest. The primary stream that runs across the township if Pine Creek. Buckhorn and Vernon Iron Furnaces were within this township.

Farmers included but not limited to:
Armstrong, Johnson, Phillips, Powell, Thompson

LAWRENCE TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Lawrence Township borders Windsor Township on the east, Elizabeth, Upper and Perry townships on the west, Aid Township to the north and Fayette Township to the south. The township contains historic and current villages and non-incorporated areas of Andis (grist mill, post office, general store & Texaco gas station), Kitts Hill. Some areas of this township were owned by iron and mining companies. See attached map for Location.

Farmers included but not limited to:
Barton, Blankenship, Brace, Bragg, Brammer, Corn, Ferrel, Fradd, Fout, Gates, Girr, Hall, Hicks, Hopsetter, Justice, Jones, Edward Kitts, Leach, Matney, Moore, Nance, Pemberton, Platt, Polley, Reed, Rowe, Russell, Shafer, Simmons, Smith, Snyder, Walburg, Webb, Willis, Wilson,

UNION TOWNSHIP
LAWRENCE COUNTY OHIO
LIST OF FARMERS DURING THE 1800s to early 1900s

A list of farmers was compiled from old land records, location of family cemeteries, information about the Ohio State Fair awards and premiums, and other historic documents.

Union township borders Rome Township to the east, Fayette Township to the west, Windsor Township to the north and the Ohio River to the south. The township contains historic and current villages and non-incorporated areas of Proctorville, Bradrick, Rockwood, Coryville, Chesapeake, Unionville, Getaway, and Bartramville. The area north of Proctorville was historically known as Quakers Bottom. See attached map for Location.

Settlements to this township occurred around 1810 with most activity around Buck Creek. The township has 36 sections.

Farmers included but not limited to:
Baker, Black, Booth, Brammer, Burns, Childers, Chinn, Daniels, Dillon, Eaton, Edwards, Ellis, Embree, Farris, Faulkner, Forgey, Gibson, I.E. Gillen, Miles Gillett, Goodall, Graham, Hagerman, Hamilton, Hayes, Hawthorne, Heffner, Henson, Holland, Huff, Keeney, Kerr, Jasper Kimball, Kite, Kitts, Langdon, Martin, Payne, Pemberton, Peters, Porter, Ransbottom, Reckard, Reed, Robinson, Shirkey, Singer, Sloane, Abner Smith, Sites, Suiter, Templeton, Thacker, Turley, Ward, Whitehead, Whitley, Wilgus, Wilkes, Wilson

APPENDIX B
Apple Illustrations

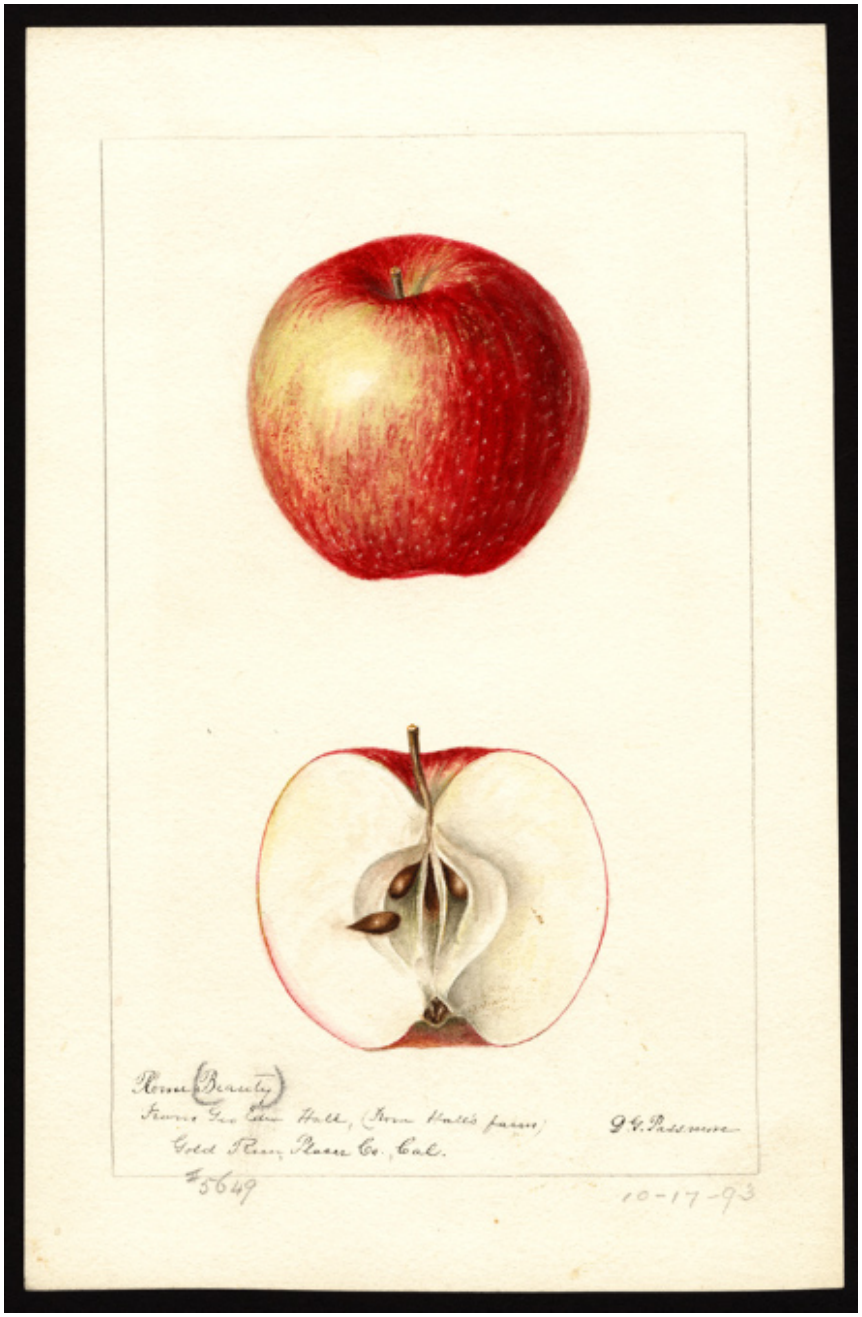
APPLE VARIETIES
ENSEE

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Ensee
Geographic origin: Bradrick, Lawrence County, Ohio, United States
Physical description: 1 art original : col. ; 16 x 24 cm.
NAL note: Watercolor includes mock up for the Yearbook of Agriculture
Specimen: 23080a Year:1901

http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

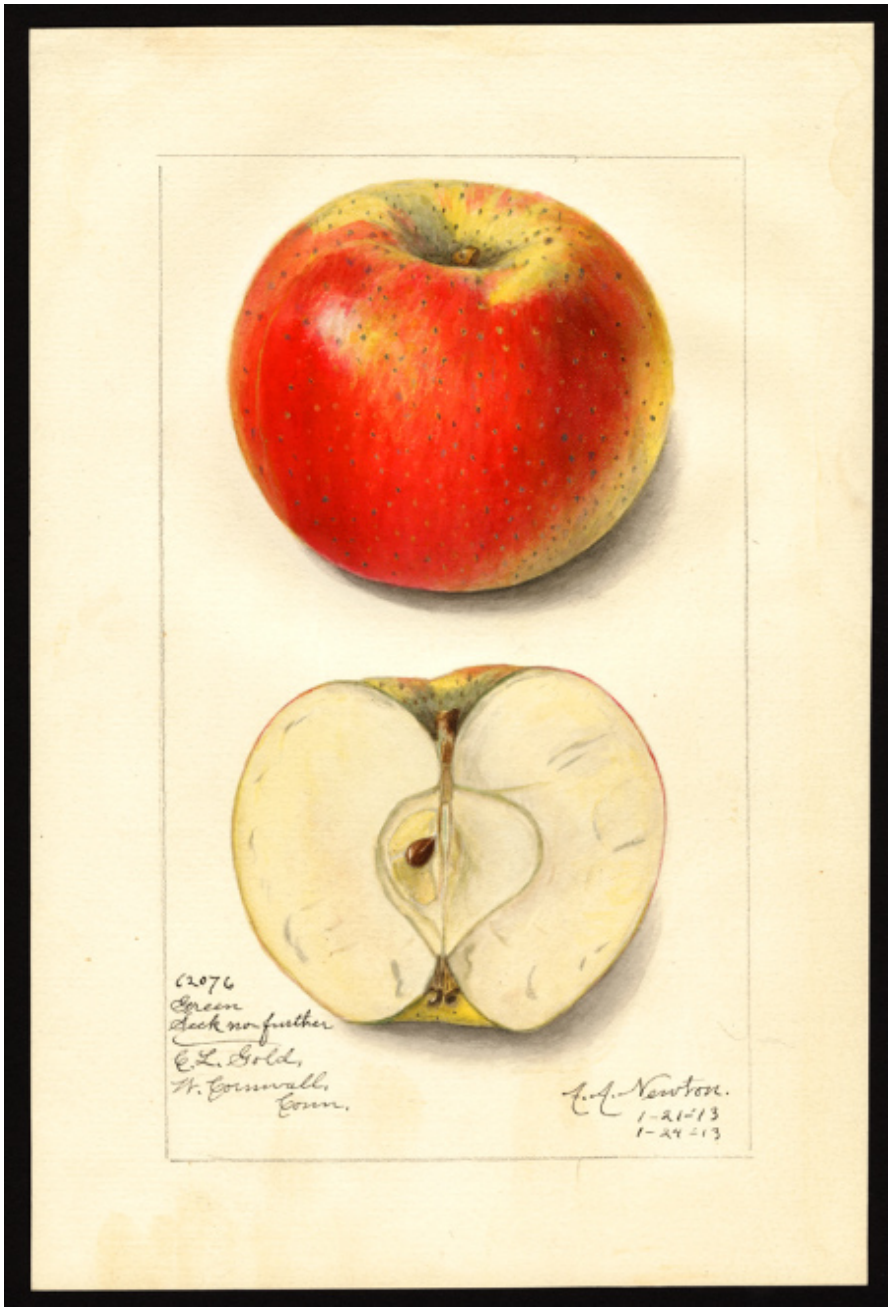


Artist: Passmore, Deborah Griscom, 1840-1911
Year: 1893
Scientific name: Malus domestica
Common name: apples
Country: United States
Variety: Rome Beauty
Specimen: 5649
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Roxbury Russet
Geographic origin: Ghent, Columbia County, New York, United States
Physical description: 1 art original : col. ; 16 x 25 cm.
NAL note: Alternative variety name(s): RoxburySpecimen:15428
Year: 1898
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



Artist: Newton, Amanda Almira, ca. 1860-1943
Scientific name: Malus domestica
Common name: apples
Variety: Green Seek No Further
Geographic origin: West Cornwall, Litchfield County, Connecticut, United States
Physical description:1 art original : col. ; 17 x 25 cm.
Specimen: 62076
Year:1913
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Heiges, Bertha
Scientific name: Malus domestica
Common name: apples
Variety: Ohio Nonpareil
Geographic origin: Minerva, Stark County, Ohio, United States
Physical description:1 art original : col. ; 17 x 24 cm. Specimen:13486
Year:1897
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

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Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Ohio Ladyfinger
Geographic origin: Allentown, Lehigh County, Pennsylvania, United States
Physical description:1 art original : col. ; 17 x 25 cm.
Specimen:22657
Year:1902
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Ohio Pippin
Geographic origin: Rosslyn, Arlington County, Virginia, United States
Physical description:1 art original : col. ; 17 x 25 cm.
Specimen:98977
Year:1920
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Black Gilliflower
Geographic origin: Bear Gap, Northumberland County, Pennsylvania, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 4222
Year: 1892
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Strange, M.
Scientific name: Malus domestica
Common name: apples
Variety: Black Gilliflower
Geographic origin: Philippi, Barbour County, West Virginia, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 78040
Year: 1914
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

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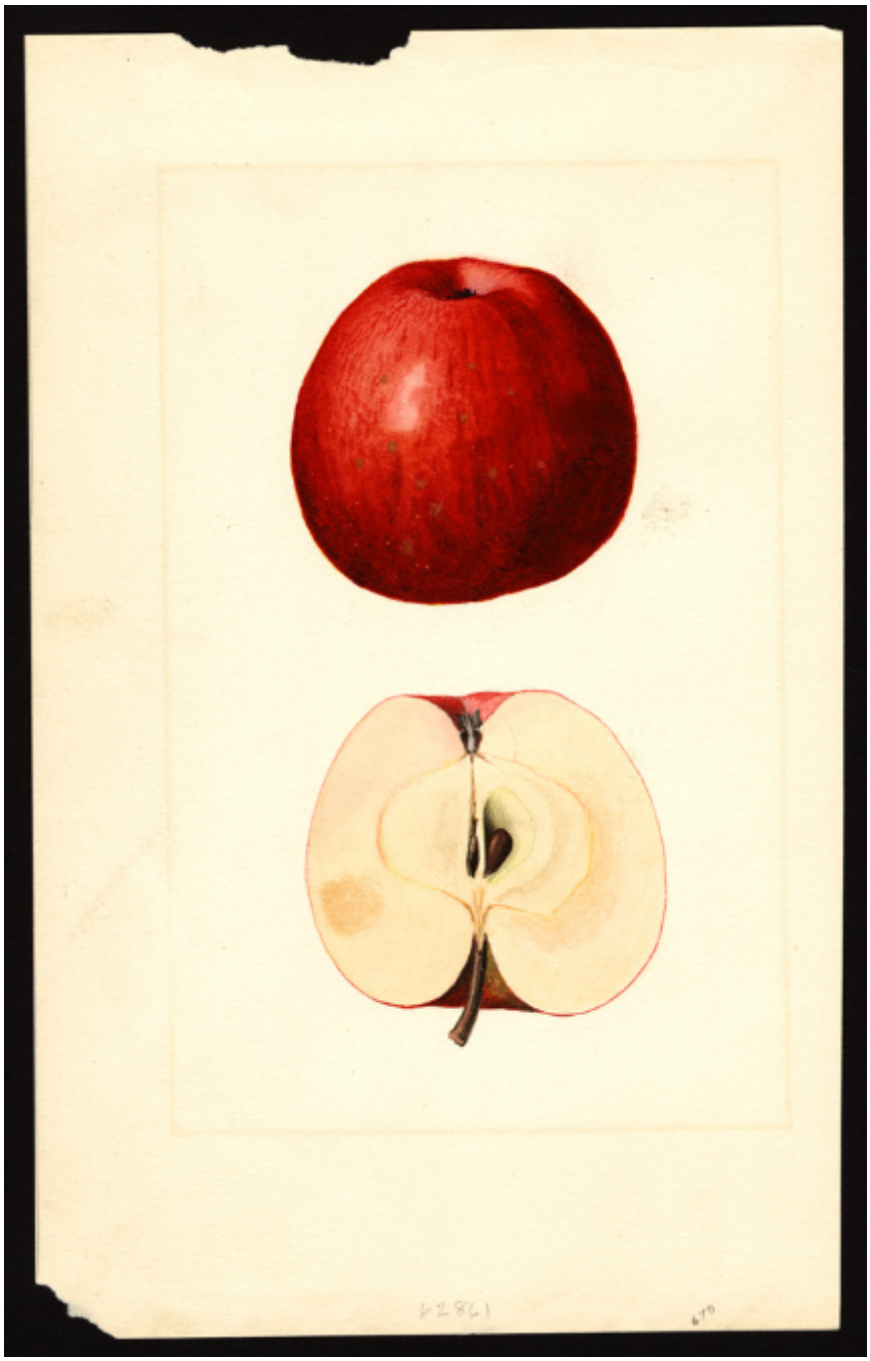
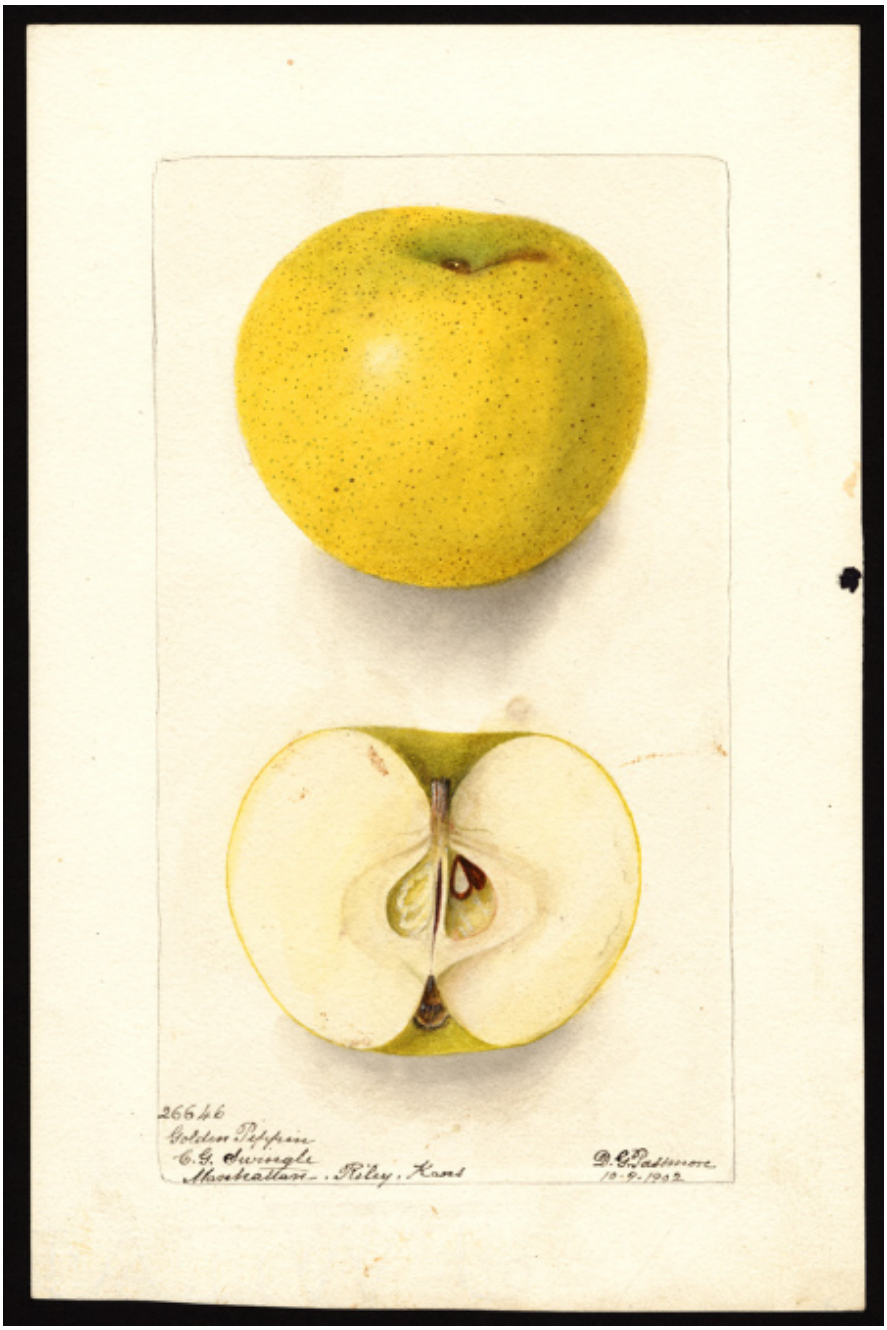


Artist: Shull, James Marion, 1872-1948
Scientific name: Malus domestica
Common name: apples
Variety: Jonathan
Geographic origin: Ashtabula, Ashtabula County, Ohio, United States
Physical description: 1 art original : col. ; 16 x 24 cm.
Specimen: 670
Year: 1913
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Golden Pippin
Geographic origin: Manhattan, Riley County, Kansas, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 26646
Year: 1902
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Early Chandler
Geographic origin: Ensee, Lawrence County, Ohio, United States
Physical description:1 art original : col. ; 16 x 24 cm.
Specimen:9101
Year:1894
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Early Strawberry
Geographic origin: Benson, Harford County, Maryland, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 17643
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

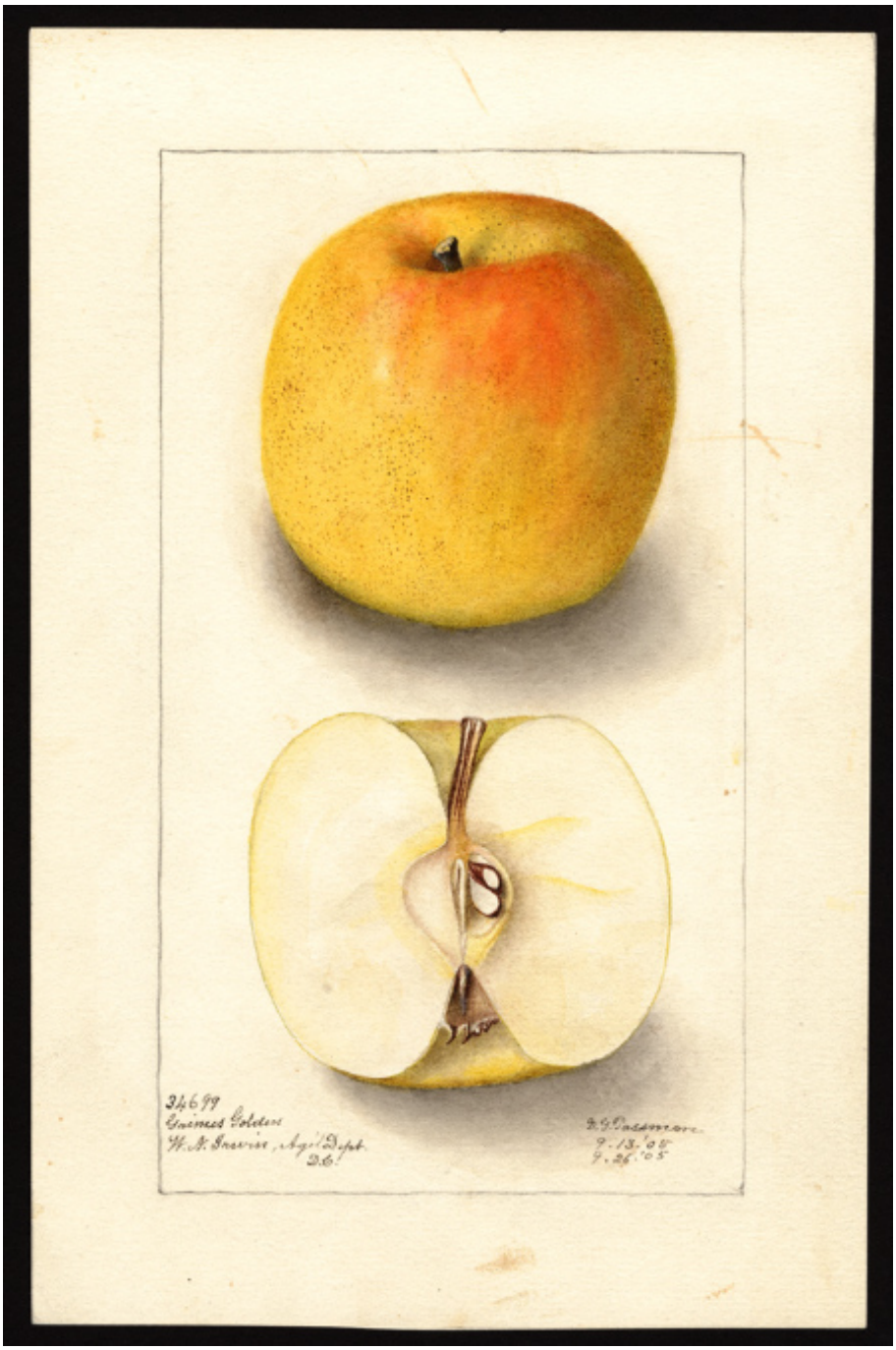
"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Evening Party
Geographic origin: Zanesville, Muskingum County, Ohio, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 14718
Year: 1897
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name:Malus domestica
Common name: apples
Variety: Golden Delicious
Geographic origin: Waynesboro, Virginia, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 103679
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Grimes Golden
Geographic origin: Washington, D.C., United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 34699

http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

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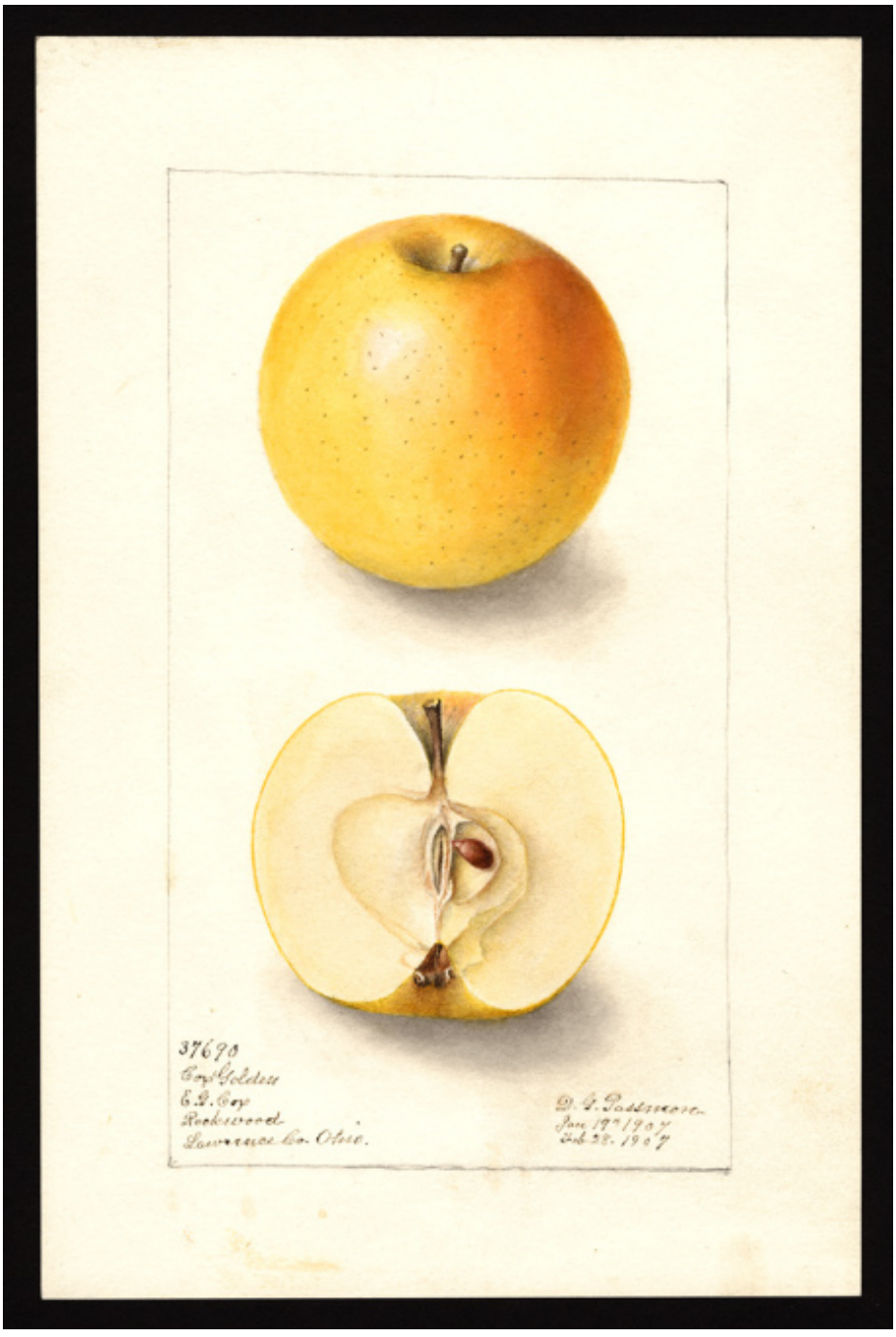

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Cox Golden
Geographic origin: Rockwood, Lawrence County, Ohio, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 37690
Year: 1907

http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

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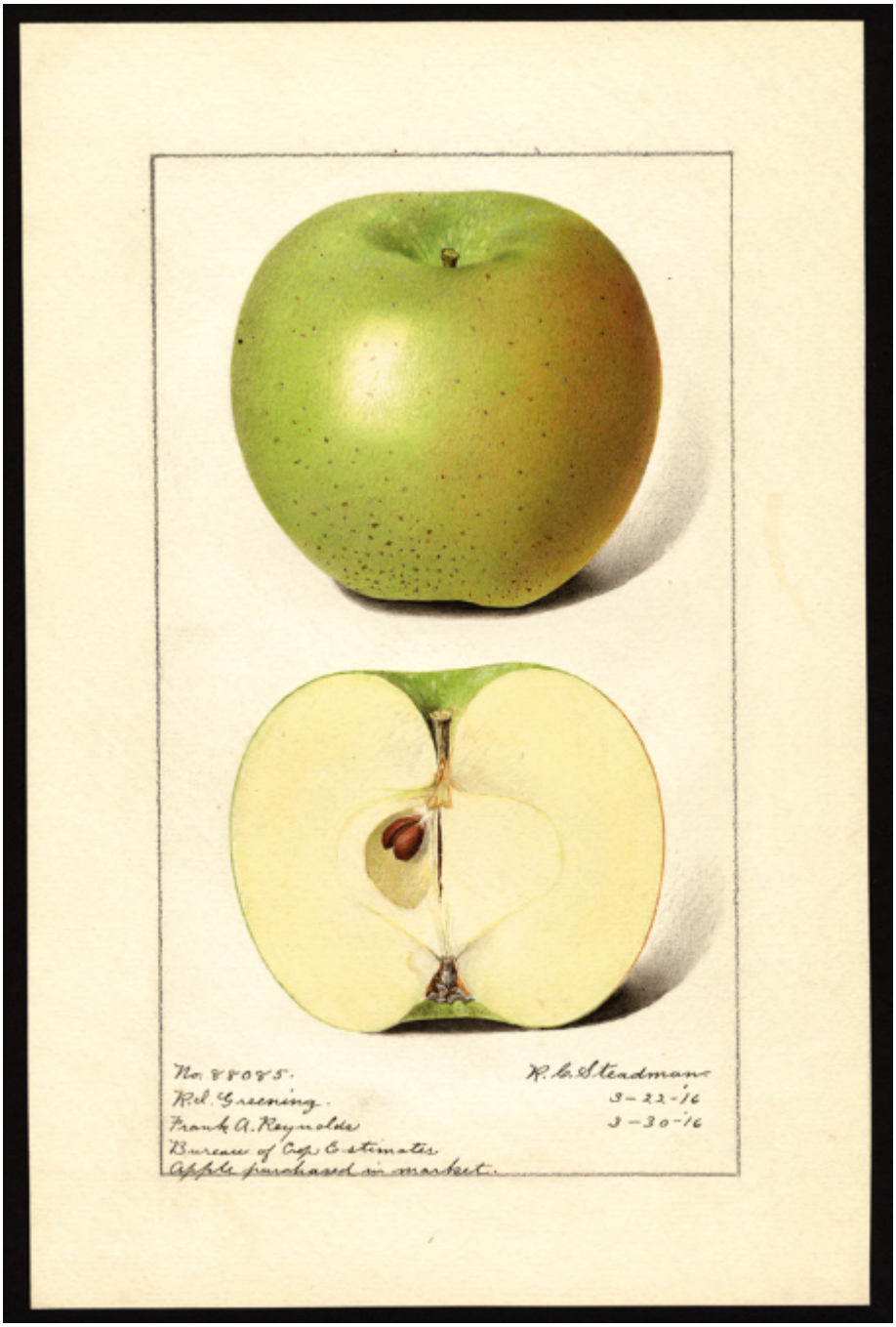


Artist:Steadman, Royal Charles, b. 1875
Scientific name:Malus domestica
Common name:apples
Variety:Rhode Island Greening
Physical description:1 art original : col. ; 17 x 25 cm.
Specimen:88085
Year:1916
Notes on original:Apple purchased in marketDate created:1916-03-30
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Heiges, Bertha
Scientific name: Malus domestica
Common name: apples
Variety: York Imperial
Geographic origin: Gerrardstown, Berkeley County, West Virginia, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 31510
Year: 1904
Notes on original: From old tree
Date created: 1904
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

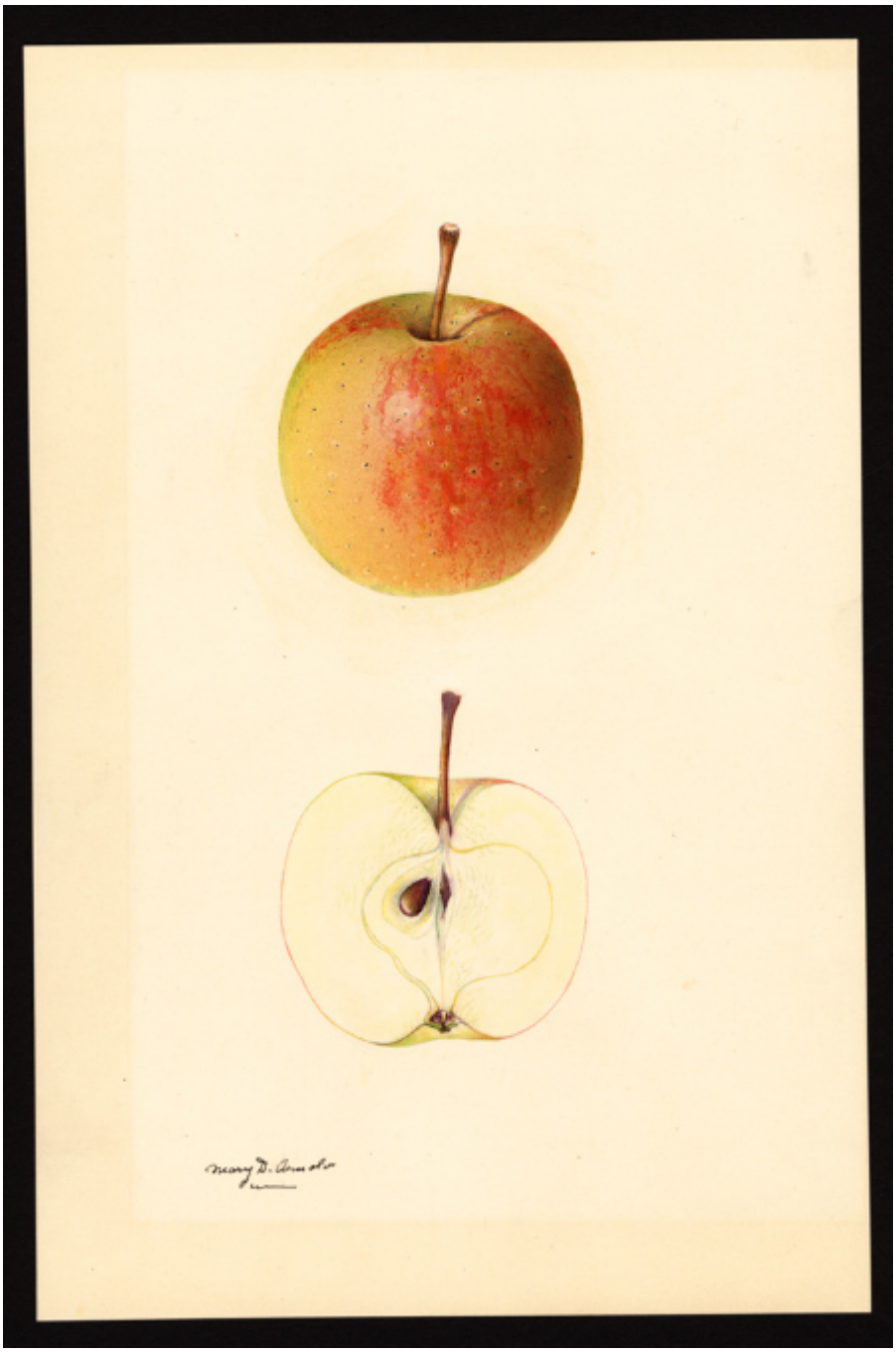
"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Shull, James Marion, 1872-1948
Scientific name: Malus domestica
Common name: apples
Variety: Ben Davis
Geographic origin: Gerrardstown, Berkeley County, West Virginia, United States
Physical description:1 art original : col. ; 17 x 24 cm.
Specimen: 526
Year: 1911
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Schutt, Ellen Isham, 1873-1955
Scientific name: Malus domestica
Common name: apples
Variety: Black Ben
Geographic origin: Louisiana, Pike County, Missouri, United States
Physical description: 1 art original : col. ; 16 x 25 cm.
Specimen: 33843
Year: 1905
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



Artist: Arnold, Mary Daisy, ca. 1873-1955
Scientific name: Malus domestica
Common name: apples
Variety: Smith Cider
Geographic origin: Rosslyn, Arlington County, Virginia, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 112350
Year: 1932
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Wolf River
Geographic origin: Rosslyn, Arlington County, Virginia, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 107954
Year: 1926
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Arnold, Mary Daisy, ca. 1873-1955
Scientific name: Malus domestica
Common name: apples
Variety: Stayman Winesap
Physical description: 1 art original : col. ; 17 x 26 cm.
Specimen: 99703
Year:1921
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

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Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Baldwin
Geographic origin: Belding, Ionia County, Michigan, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 96347
Year: 1918
Notes on original: Strain B of Baldwin.
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

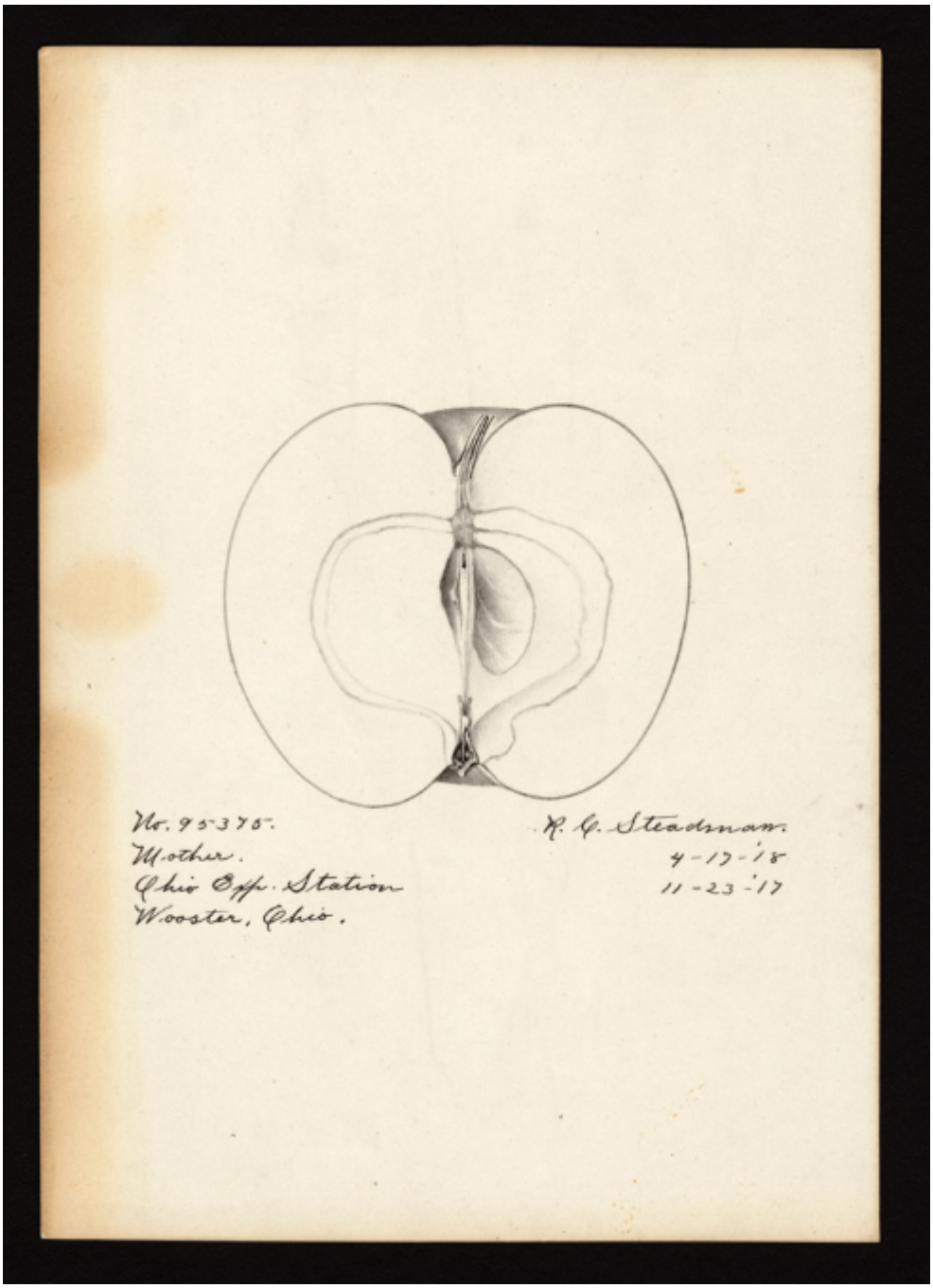
"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Late Strawberry
Geographic origin: Bremen, Fairfield County, Ohio, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 17772
Year: 1899
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Linville
Geographic origin: Wooster, Wayne County, Ohio, United States
Physical description: 1 art original : col. ; 17 x 26 cm.
Specimen: 95291
Year: 1918
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Mother
Geographic origin: Wooster, Wayne County, Ohio, United States
Physical description: 1 art reproduction ; 14 x 19 cm.
Specimen: 95375a
Year: 1918
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

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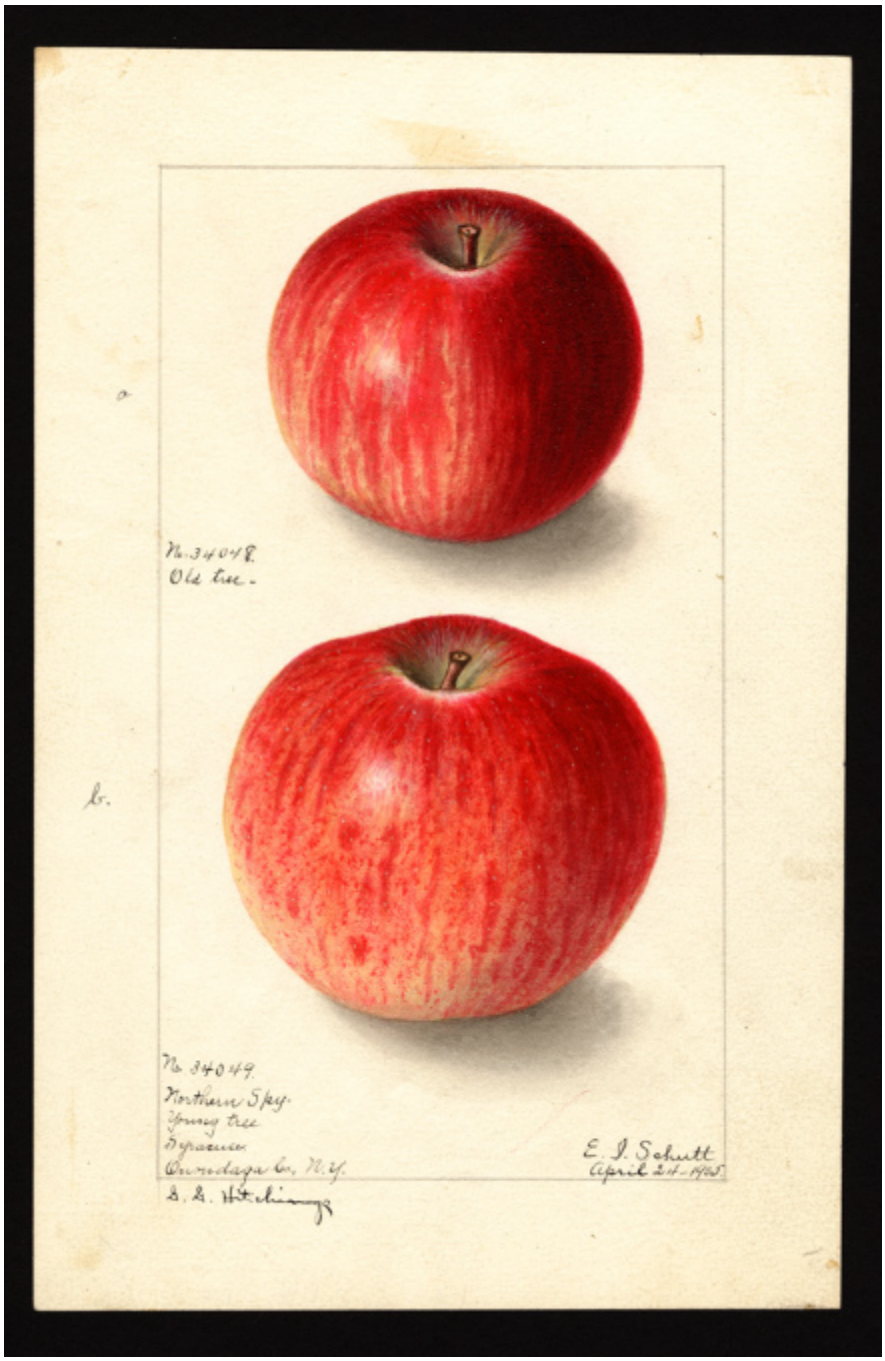


Artist: Schutt, Ellen Isham, 1873-1955
Scientific name: Malus domestica
Common name: apples
Variety: Northern Spy
Geographic origin: Syracuse, Onondaga County, New York, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 34048; 34049
Year: 1905
Notes on original: Comparison of apples from young and old tree
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name :Malus domestica
Common name: apples
Variety: Rambo
Geographic origin: Columbus, Franklin County, Ohio, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 100476
Year: 1921
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Schutt, Ellen Isham, 1873-1955
Scientific name: Malus domestica
Common name: apples
Variety: Yellow Transparent
Geographic origin: College Park, Prince Georges County, Maryland, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 56934
Year: 1912
Notes on original: Yellow Transparent x Early Ripe
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Yellow Bellflower
Geographic origin: New York, United States
Physical description:1 art original : col. ; 17 x 25 cm.
Specimen: 99841
Year: 1921
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Wealthy
Geographic origin: Syracuse, Onondaga County, New York, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 34053; 34054
Year: 1905
Notes on original: Sod vs Tillage, stored 6 months. 34053, No. 1 Wealthy - First picking, cultivated land. 34054, No. 2 Wealthy - Second picking, 2 weeks later cultivated land. See 34055-6; R.F.D 5
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: May Queen
Geographic origin: Rosslyn, Arlington County, Virginia, United States
Physical description:1 art original : col. ; 17 x 26 cm.
Specimen: 109404
Year: 1927
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Benoni
Geographic origin: Rosslyn, Arlington County, Virginia, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 98446
Year: 1920
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Newton, Amanda Almira, ca. 1860-1943
Scientific name: Malus domestica
Common name: apples
Variety: Summer Queen
Geographic origin: Midway, Tennessee, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
Specimen: 57306
Year: 1912
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Swann, Eliza C.
Scientific name: Malus domestica
Common name: apples
Variety: Long Red Pearmain
Geographic origin: Sergeantsville, Hunterdon County, New Jersey, United States
Physical description: 1 art original : col. ; 17 x 25 cm.
NAL note: Alternative variety name(s): Long Red
Specimen:13084
Year: 1896
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

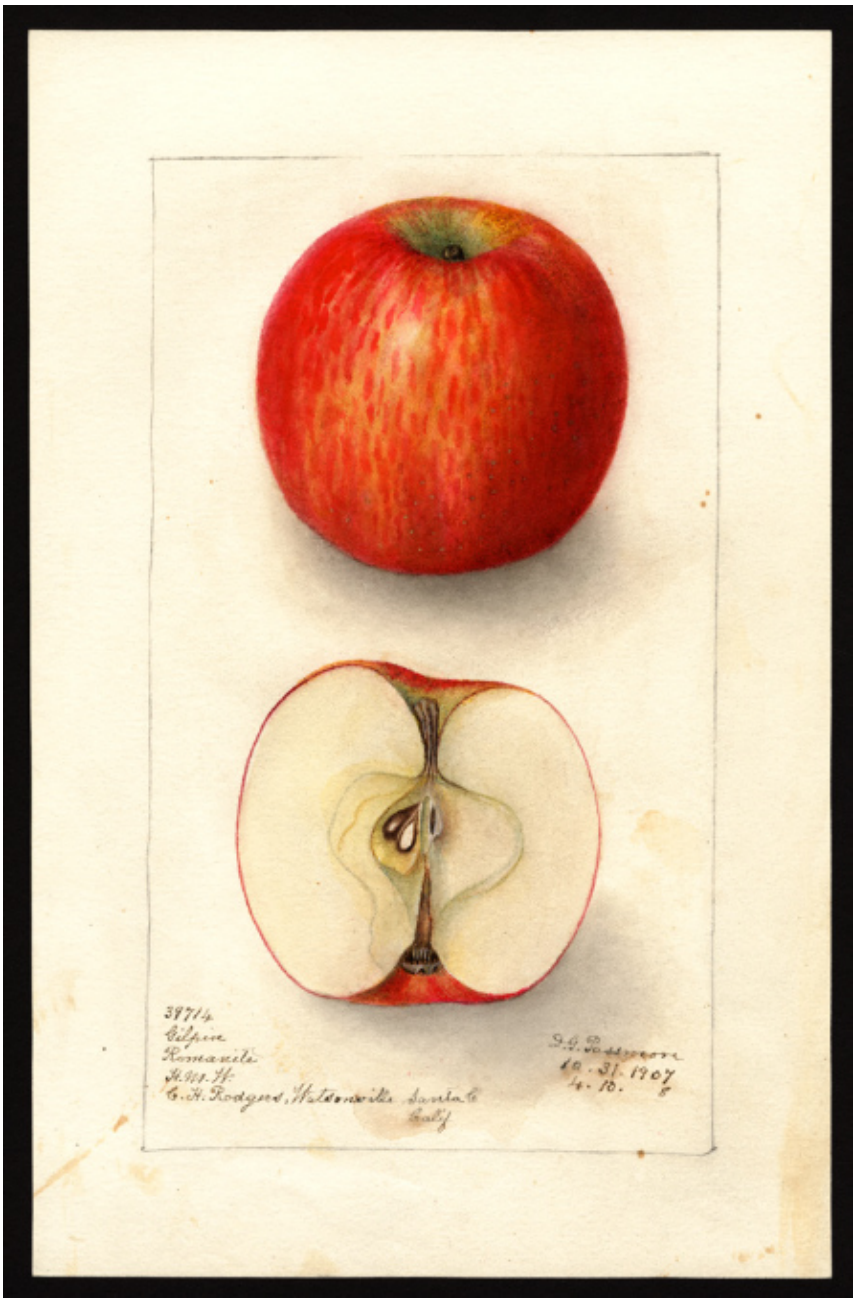
"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

Artist: Steadman, Royal Charles, b. 1875
Scientific name: Malus domestica
Common name: apples
Variety: Pumpkin Sweet
Geographic origin: Rosslyn, Arlington County, Virginia, United States
Physical description:1 art original : col. ; 17 x 26 cm.
Specimen: 106796
Year: 1925
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"

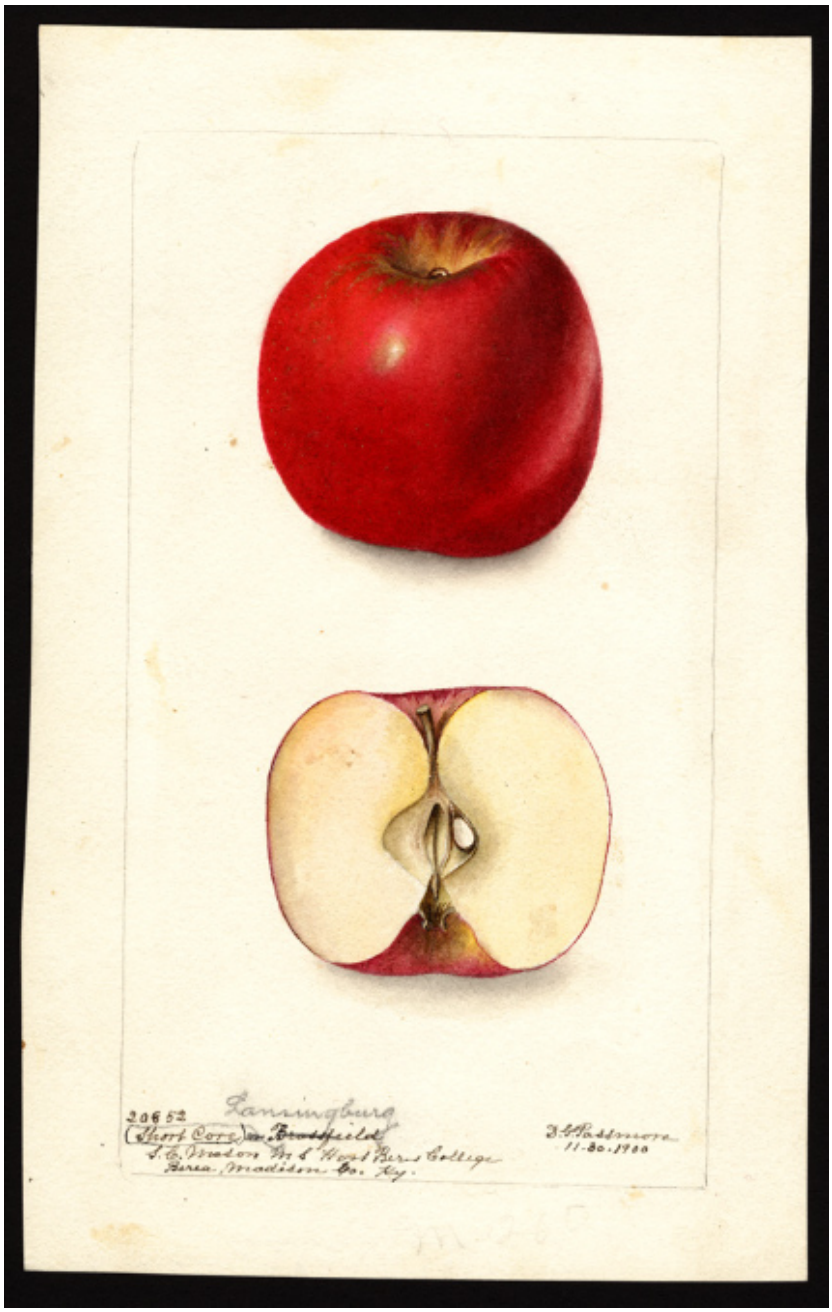
Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Milam
Geographic origin: Rockville, Montgomery County, Maryland, United States
Physical description: 1 art original : col. ; 16 x 25 cm.
Specimen: 35728
Year: 1906
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



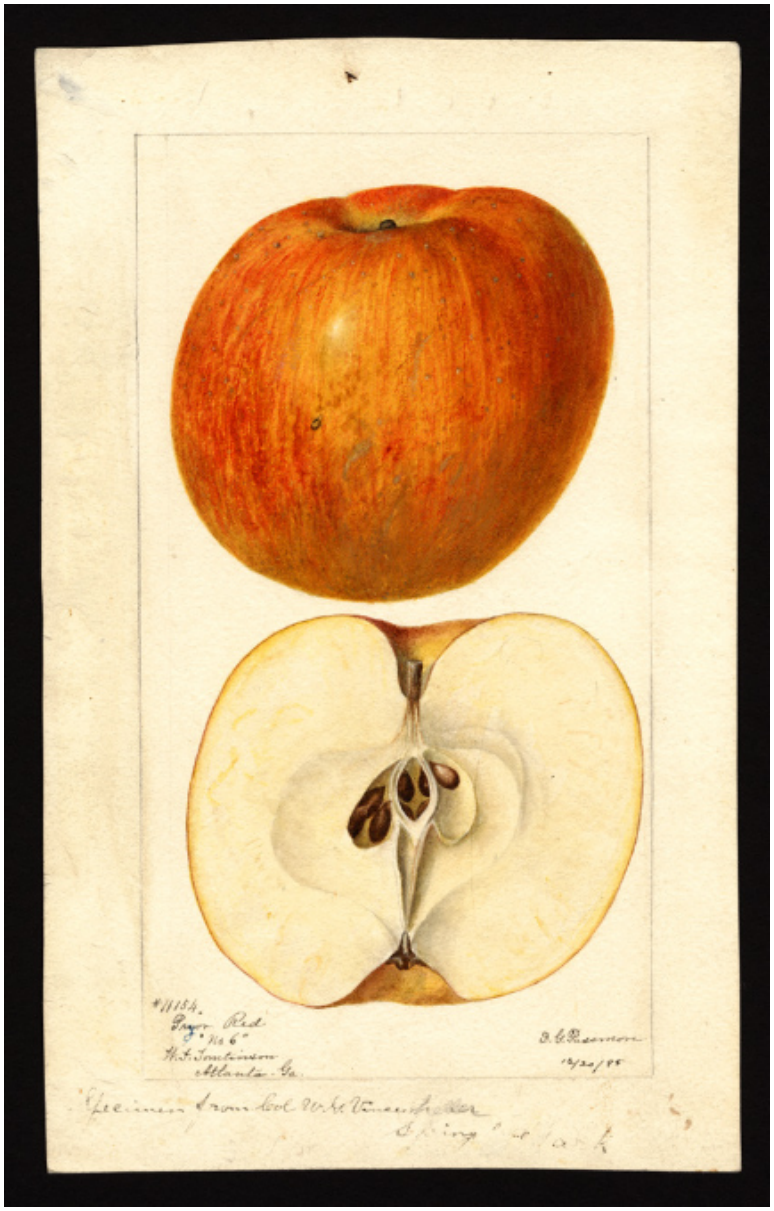
Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Gilpin Romanite
Geographic origin: Watsonville, Santa Cruz County, California, United States
Physical description: 1 art original : col. ; 16 x 25 cm.
NAL note: Alternative variety name(s): Gilpin
Specimen: 39714
Year: 1908
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



Artist:Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Lansingburg
Geographic origin: Berea, Madison County, Kentucky, United States
Physical description: 1 art original : col. ; 15 x 24 cm.
NAL note: Alternative variety name(s): Lansingburg Short Core
Specimen: 20852
Year: 1900
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

"U.S. Department of Agriculture Pomological Watercolor Collection. Rare and Special Collections, National Agricultural Library, Beltsville, MD 20705"



Artist: Passmore, Deborah Griscom, 1840-1911
Scientific name: Malus domestica
Common name: apples
Variety: Pryor Red
Geographic origin: Atlanta, Fulton County, Georgia, United States
Physical description: 1 art original : col. ; 15 x 24 cm.
Specimen: 11154
Year: 1895
Notes on original:
Specimen from Co. W.G. Vanheller[?], Spring[?], Arkansas
http://usdawatercolors.nal.usda.gov/pom/catalog.xhtml?id=POM00000538&start=0&searchText=jonathan+apple&searchField=All+Fields&sortField=

APPENDIX C
Photographs

PHOTOGRAPHS

Older orchards at Hillgate Farm

Apples developing

Apple leaves

Slope where apples trees will be planted

PHOTOGRAPHS

Another view of sloped area

Start of fenced enclosure

Laying out enclosure

Another photo of layout

PHOTOGRAPHS

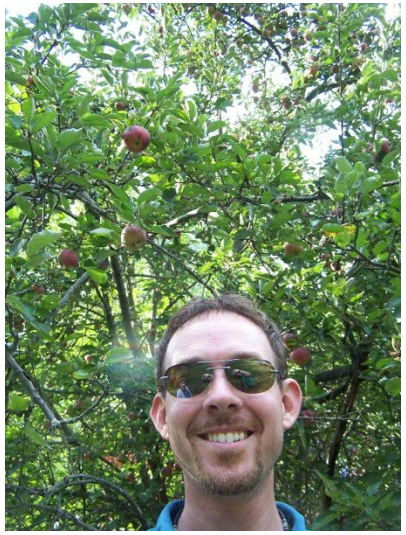
Beginning construction of fenced area

Fenced area

Adam Wilson with OU posing with apples

Adam with apples

PHOTOGRAPHS



Adam

Adam

Adam

Adam

PHOTOGRAPHS

Apples picked from trees grown from seed located in the pasture of Hillgate Farm

PHOTOGRAPHS

Apples picked from trees grown from seed located in the pasture of Hillgate Farm

Apple grown from seed, size of large grape or cherry

Greg Huff Farm located at Getaway, formerly Unionville

PHOTOGRAPHS

Two trees that came up from seed, apples are tart, good size

The tree bark

Apple tree limbs

Limbs on other tree

PHOTOGRAPHS

Leaves of another tree that came up from seed

Apple tree growing amoung more mature woodlands. The fruit on this tree has a nice sweet taste

PHOTOGRAPHS

Apple trees growing in forest

PHOTOGRAPHS

Farms checked for any remnant orchards

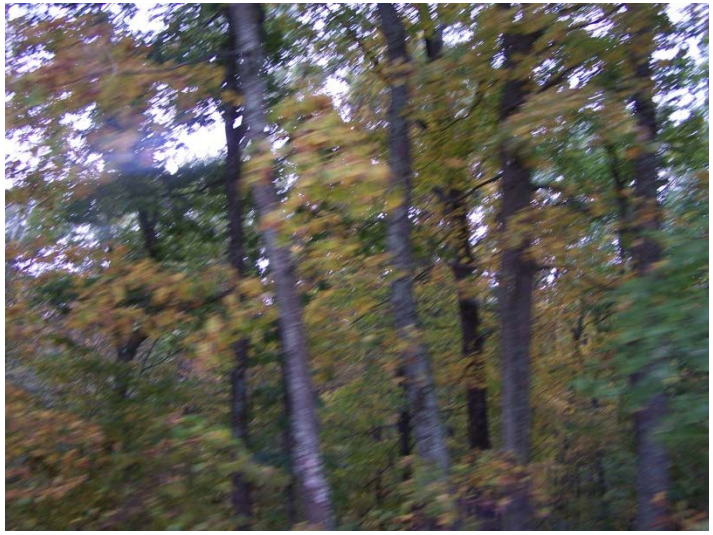
PHOTOGRAPHS

Farms checked for any remnant orchards

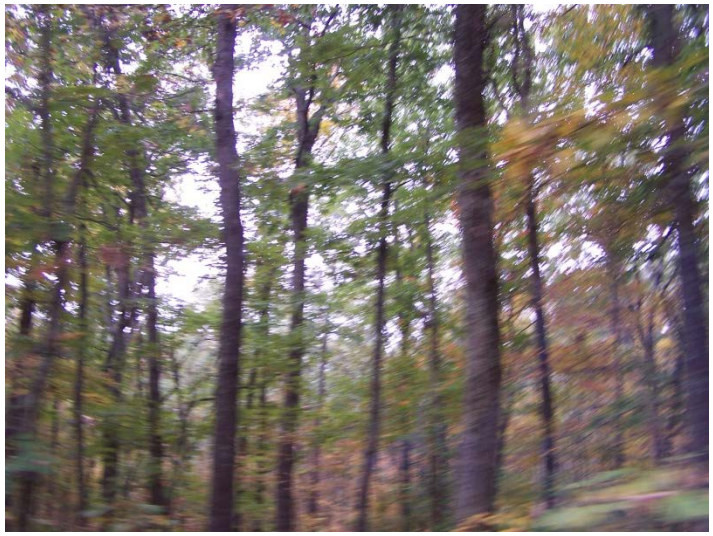
Northern locations in Lawrence County

PHOTOGRAPHS

Former Wilson Farm where apple trees once grew, now mature forest



PHOTOGRAPHS



Former Wilson Farm where apple trees once grew, now mature forest

PHOTOGRAPHS

Former Wilson Farm where apple trees once grew, now mature forest

PHOTOGRAPHS

County Farms checked for remnant apple trees

PHOTOGRAPHS

Former Wilson Farm where apple trees once grew, now mature forest

Driving into Aid, Ohio

PHOTOGRAPHS

County Farms checked for remnant apple trees

PHOTOGRAPHS

Location of Nelson Cox orchards from the late 1800s and early 1900s Greasey Ridge

PHOTOGRAPHS

Location of Nelson Cox orchards from the late 1800s and early 1900s Greasey Ridge

Home built by Nelson Cox during the peak of the apple industry

PHOTOGRAPHS

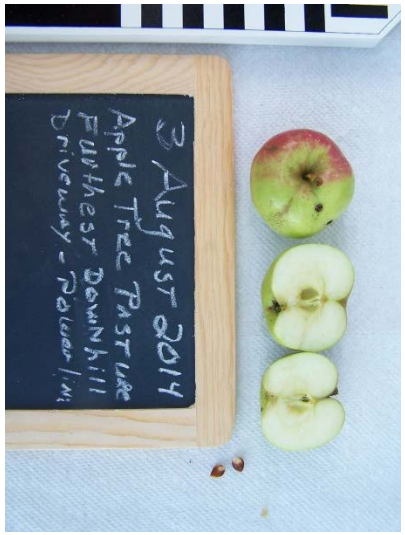
Location of Nelson Cox orchards from the late 1800s and early 1900s Greasey Ridge

PHOTOGRAPHS

Apples collected from Hillgate Farm trees
grown from seed.

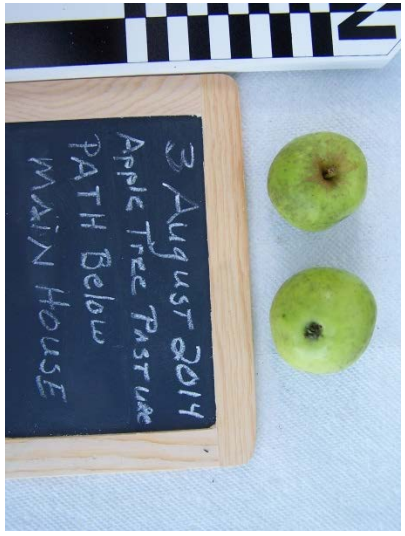
PHOTOGRAPHS

Apples collected from Hillgate Farm trees
grown from seed.



PHOTOGRAPHS

Apples collected from Hillgate Farm trees
grown from seed.



PHOTOGRAPHS

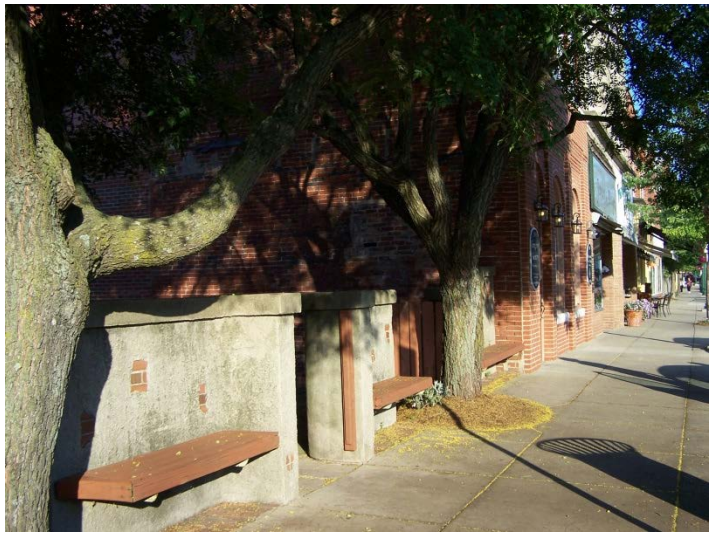
Apples collected from Hillgate Farm trees
grown from seed.

101_5470

PHOTOGRAPHS

Marietta, Ohio

PHOTOGRAPHS



Marietta, Ohio

PHOTOGRAPHS

This apple collected by Adam Wilson, had no seeds.

Twp. Rd. 293 S

38.466742° -82.470916°

PHOTOGRAPHS

Apples collected from Dave Wolfarth Farm located on Scary Creek.
38°27'22.35"N 82°31'3.74"W

PHOTOGRAPHS

Apple trees from Dave Wolfarth Farm
located on Scary Creek.

PHOTOGRAPHS

Apple trees from Dave Wolfarth Farm located on Scary Creek.