CARRIAGE HILL FARM VOLUNTEER INTERPRETIVE GUIDE

Revised 2022

FIVE RIVERS METROPARKS

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Five Rivers MetroParks Welcomes You!

We are pleased to have you join our organization as a volunteer, and we appreciate your time and commitment, and the valuable skills you bring to this new assignment.

As a volunteer, you are a part of a team of staff and volunteers working together to enable Carriage Hill Farm to achieve its mission. Your contributions, dedication, and commitment are truly extraordinary and vital to our park and program success.

Alongside the Education staff, volunteers represent what living in the 1880s might have been like. Volunteer opportunities include the historic house/kitchen, blacksmithing, woodworking, historic steam operations, and farm chores. These volunteers share their time and talents to put the LIVING into the Carriage Hill Living History Farm both during the week and on weekends, throughout the year in accordance with the park's seasonal schedule.

Volunteer scheduling and opportunity sign-up is done through our online volunteer system, Get Connected. You can access the system at www.metroparks.org/volunteer.

This Volunteer Handbook will introduce you to Carriage Hill's history and information on the time period. It is a resource to guide you through your time as a volunteer. Please familiarize yourself with its contents to assist you in your volunteer duties. You are more than welcome to have this manual with you on the farm and to reference it when needed.

Once again, thank you in advance for giving us your time and efforts.

Sincerely,

Carriage Hill Farm Staff & Volunteer Services

FIVE RIVERS METROPARKS

Protect the region's natural heritage and provide outdoor experiences that inspire a personal connection with nature,

CARRIAGE HILL FARM
STATEMENTS OF PURPOSE

Five Rivers MetroParks Mission:
Protect the region's natural heritage and provide outdoor experiences that inspire a personal connection with nature.

Carriage Hill Farm Mission:
Carriage Hill Farm is a public educational facility of Five Rivers MetroParks which, as a living history museum, is dedicated to the interpretation, preservation, and reconstruction of the farmstead and recreation of the lifestyle of a conservative farm family of the 1880s.

INTERPRETIVE FOCUS OF CARRIAGE HILL METROPARK FARM

The interpretative purpose of the farm is to use the Arnold Family, who once lived at Carriage Hill Farm, as a guide to how a real conservative farm family lived in the 1880a. Through oral history, letters, diaries, government records, and other primary and secondary sources, a picture of a lifestyle emerges that Carriage Hill interpreters can bring to life for the public. This is the challenge for each interpreter.

GENERAL INFORMATION ON CARRIAGE HILL FARM

The original farm was purchased by the Arnold family in the 1830s. Henry H. Arnold died in 1910 and the farm was sold to Sallie B. Turner and her husband in 1916. The Turners later sold the farm to Lillie Shoup, a widow with 13 children. The Shoup family sold it to Ernest and Rhea Fourman in 1954. The Fourmans modernized the Arnold homestead and named it "Carriage Hill" before selling it to the Park District of Dayton-Montgomery County in 1968. The Park District is now named Five Rivers MetroParks. It is supported by a levy voted on by the residents of Montgomery County.

The park now encompasses almost 1000 acres. There are horse trails around the perimeter of the park and a MetroPark riding center on Shull Road. Carriage Hill has numerous trails, woods, wetlands, meadows, a duck pond, fishing lakes, the Daniel Arnold home and outbuildings, the Joseph Arnold home, orchard, cemetery, and equipment graveyard. The animals at the farm are those that would have been there a century ago - cows, draft horses, sheep, pigs, and chickens.

The brick house, barns, outbuildings, and the sided log house have been restored or reconstructed to their 19th-century appearance. The lifestyle of a conservative farming family of the 1880s is being recreated at Carriage Hill Farm. The 1880s was chosen for the restoration period because it is the decade that includes the major buildings (the barn and

house additions were built in 1878) and the last period that the head of the household was also the owner of the farm. There is also a large amount of documentation (diaries and account books) on everyday life and activities on the farm.

Life at Carriage Hill follows the farm season just as it did over 140 years ago. From ice harvesting and butchering in the winter through plowing and planting in spring, and harvesting in the fall, the rural heritage of the Miami Valley comes alive.

Carriage Hill is open to visitors all year long. The historic farm is open from April 1st to October 31st, with some special events and programs during the offseason. During the week, the historic homemaker greets the visitors in the brick house and the outbuildings are open. The farm work is done as required. The trails are accessible at the farm during open hours. On weekend afternoons, volunteers are working in the woodshop, blacksmith shop, house, and kitchen. Throughout the year, activities or special programs are scheduled.

The Children's Interactive Center at the Carriage Hill Visitor Center is available daily to visiting families and to schedule school groups where young people can use child-size household utensils to do farm activities and play pretend in a 19th-century school. An exhibit area and orientation video prepare visitors for their living farm museum experience.

Carriage Hill hosts over 10,000 children a year in scheduled groups. Groups are scheduled by calling the office on weekdays at 275-PARK for reservations. No reservations are needed for weekend activities. Individuals and families are welcome to drop in any time.

GUIDELINES FOR INTERACTING WITH THE PUBLIC

The following guidelines have been put together to help reiterate the importance of interacting with the public. Because we are here specifically for the visiting public to enjoy, we must ensure that the visitor is given a safe and enjoyable experience. Through friendly and educational interaction, the visitor must be regarded as our top priority and thus want to visit

our site again. However, when interacting with the public, we must all remember that there are certain dos and don'ts:

- All visitors must be greeted in a friendly manner and treated with the proper respect. A nice friendly welcome can set the standard for the public's entire visit.
- Please offer information to the public, if it is needed, to orient them to the site. For instance, directions to the public restrooms, water fountain, and visitor center.
- When demonstrating an activity to the public, i.e., blacksmithing, cider pressing, pie baking, etc., make sure to offer information on the task itself and how it was important during the 1880s. Try not to interpret an activity as it is done today. For example, "we use the ice from the icehouse for demonstrations." This is essentially interpreting the present and not the past.
- Please answer and encourage questions from the public. Provocation is one of the basic elements of quality interpretation. However, do not ever makeup information when answering a question or interpreting for the public. The public relies on your information to be accurate and correct. For this reason, only accurate information must be provided. If you do not know the answer, either direct them to someone who does or simply state, "Sorry, I don't know, but I will find out!"
- **A visitor will not ever be treated in a rude or impolite manner**! As stated earlier, they are our reason for being here. If it were not for them, we would not be here.
- If a visitor is difficult to deal with or must file a complaint, please direct them to the staff member present or the Education Coordinator.
- Improper language or inappropriate comments by staff, volunteers, or visitors will not be tolerated. This includes using obscene words or phrases, comments of a sexual nature, or racial slurs.
- Suggestive comments or innuendo by staff, volunteers, and visitors is regarded as sexual harassment and will not be tolerated. In today's workplace, even simple comments can be construed as sexual harassment. Be always aware of these when dealing with the public.
- At no time should there be physical contact with a visitor whether they are an adult or child. Anything beyond a simple handshake is regarded as inappropriate.
- When dealing with the public, do not solicit personal business. This is not appropriate when the visiting public is present.
- Lastly, try to treat each visitor as if it is his or her first time at Carriage Hill. Be friendly, informative, and educational at all times. An enjoyable experience will promote a return visit to our site.

HISTORICAL INTERPRETATION AT CARRIAGE HILL

The Educational Purpose of Carriage Hill

To interpret Carriage Hill Farm, we must first understand what it is we are trying to recreate. Hopefully, then, we can build a stronger interpretive program and experience for the visitor. An overarching theme for the historic farm is that "The historic farm is a real site, in that several generations of the Arnold family both lived and died there".
Over time, the farm has been restored to its appearance in the 1880s. Due to the documentation and history of the site, we are blessed with a wealth of information about the farm, buildings, crops, and animals. For this reason, these items are faithfully represented. It is only natural when restoring a historic site to restore it to its original state. A historic site uses documentation to guide them in all aspects of physical representation. However, how does this affect our interpretation?

In interpreting Carriage Hill Farm, we have decided to use the documentation of the Arnold family as a guide to all aspects of the site. This includes the buildings, animals, crops, and even demonstrations and crafts. The daily life of an 1880s farm family gives us great insight into what we portray and recreate.

One aspect of the Arnolds that we are not recreating is their religious beliefs. This is interpreted as part of the history of the farm, but the interpretive staff is not portraying themselves as members of the German Baptist church. The original inhabitants of the farm at Carriage Hill were Old Order German Baptists. If we were to recreate their lives completely, we would have to adopt every aspect of their lives, including clothing, religion, and social activities. This would also mean no programming on Sunday for authenticity's sake and other restrictions on what we could do. Out of respect for the existing German Baptist community, however, we cannot do this. Instead, we must interpret ourselves as a typical upper-middle-class farm family of the Miami Valley region of Ohio, but who are guided by the Arnold families' daily tasks and chores.

Because we are portraying a typical farm family, our programs can be much more diverse. For example, barn dances, Christmas holiday programming, and period music are all typical parts of everyday life on a farm. This would not be possible if we were portraying a German Baptist farm family.

However, questions still arise over the use of the Arnold diaries for documenting the site. Even though we are not portraying the German Baptist faith, their diaries do give us a vast amount of information about everyday life on a farm in the 1880s. The diaries are essentially the same as any other farm diary of the time, aside from references to the church. The diaries give us an excellent insight into the life of an average farm family.

To summarize, even though the physical aspects of the farm have been restored or recreated to their 1880s appearance when the Arnolds lived here, we are portraying a typical upper-middle-class Ohio farm family of the time. The outbuildings, crops, vegetables, and animals are all indicative of what was common at the time and are not necessarily limited to just German Baptist families.

DEFINITIONS OF INTERPRETATION

Before discussing historical interpretation, it is important to define it. The following is a basic definition of the word "interpretation" and how it applies to what we do. In addition to this, a basic understanding of the different types of historical interpretation is provided.

Interpretation: Interpretation, or interpreting, is an activity that consists of establishing, either simultaneously or consecutively, oral, or gestural communications between two or more speakers who are not speaking (or signing) the same language.

Interpretation in the Historical Field: Translating material culture and human or natural phenomena to the public in a meaningful, provocative, and interesting way.

Types of Interpretation

There are many different forms of historical interpretation used today. The three methods most widely used are first-, second-and third-person interpretation. First-person is a method where the interpreter takes on the persona of someone from the past and only speaks as if it is that historical year. For example, George Washington at Colonial Williamsburg is using first-person interpretation to discuss his life. Second-person interpretation is a method that allows the interpreter to discuss history from a historical perspective. They are speaking from the period perspective but at the same time drawing comparisons. Lastly, third-person interpretation is a method that allows the interpreter to speak in the present time and draw comparisons between then and now. This is the method that we currently use at Carriage Hill. The following are examples to illustrate these various methods:

First-Person: "This is how I cooked my meal."
Second-Person: "Let us cook in an old-time way"
Third Person: "This is how they cooked the meal."

Basic Guidelines for Interpretation

Historical interpreting may seem easy to some, but to others, it can be an intimidating task. The following information should provide you with some guidelines or suggestions when interpreting for the public.

When dealing with the public, remember to always give them a nice greeting. A first impression can make a difference in one's visit. To provide a good feel for the 1880s, try a period greeting like "Good Morning", "Good Day", etc.... or a simple "Welcome". After giving

the visitor a nice greeting, utilize what is called an “ice breaker”. An ice breaker is a way to find out a little bit more about the visitor and work off their interests. For example, “Have you ever been here before?” or “Would you like a tour?" The visitor’s response can be crucial in determining what facts you will be presenting. If the visitor is a regular visitor, they will probably not be interested in the full history of the farm. In turn, they might be more interested in what is new, or what you are currently working on. If the visitor states that it is their first visit, you can provide more of an overview of the farm’s history and the most essential facts a visitor should come away with. Lastly, an ice breaker also shows the visitor that you view them as a guest and that their interests are your priority.

When interpreting to a visitor, you must first read the visitor. Does the visitor want to simply breeze through the building, or do they want a 45-minute lecture? Do they want a lot of information or simply some important facts? After you have had a chance to see what your visitor wants, then provide them with the information needed. If you are a new volunteer or have not had a lot of public speaking experience, then try to pick out at least three important points you would like to get across to the visitor. A few vital bits of history are better than no information at all. Afterward, build off these points and develop your talk for the public. If you are doing a historic demonstration, then usually the demonstration itself will be the focus of your interpretation. However, if the visitor wants more information, then tie in what you are doing with the overall farm. This allows you to expand upon bigger facts and information. When presenting information to the public make it interesting and try to bring to life the 1880s. Don’t simply turn your talk into an “antique” show and tell. Explain how a farm family used these items and how they were important in the 1880s. Also, when describing an item or how it was used, try to describe how they used it back then and not how we use it today. Also, when providing period information, make sure it is factually correct. Please do not make up any information. When you give out facts, the visitor is strictly relying on you that the information is historically accurate. If you do not know an answer, please tell them that you can find out the answer or you simply are not quite sure.

One of the most essential parts of interpreting is to make the visitor try to picture life in the 1880s. To accomplish this, we must provoke the visitor into asking lots of questions and making inquiries. When a visitor asks questions, it does show that they are interested and want to learn more. This is one of the most important aspects of interpreting as education helps convey information in a meaningful way. But remember, a good teacher doesn’t tell everything. Make them want to learn more and return for another visit.

Finally, make sure that the visitor is given a nice “Goodbye”, or an “Enjoy your visit”. This will also leave a good impression on the visitor as they leave the site. Remember, wear a smile and be informative, your positive attitude will make a visitor’s experience a memorable one.

THE PEOPLE OF CARRIAGE HILL

As stated in the mission statement, Carriage Hill recreates the lifestyle of a conservative farming family of the 1880s. The purpose is not to memorialize the Arnold family, but rather to use them as a guide as to what a 19th-century farming family was like. The most important aspect of the farm to remember is that it is a real farm that a real family lived and died on. We are not a completely fabricated site but an original site that has been restored to what it would have been like.

This sketch of the Arnold family is based on family documents and diaries, tax and census records, local histories, and interviews with descendants of the family. There are 46 diaries from seven family members: Henry H. Arnold, Joseph Arnold, Lizzie (Elizabeth) Arnold, Betsy (Elizabeth) Arnold, Samuel Arnold, James Brubaker, and Henry C. Arnold.

In the eighteenth century, many brethren families fled southern Germany to escape religious persecution. Among those who immigrated to America were John George Arnold and his wife who arrived in Philadelphia in 1738 and later settled in Frederick County, Maryland. John George's grandson, Zachariah, along with two of his brothers moved to a large farm near Romney in what was then Virginia. (The land is now in West Virginia.)

Zachariah and Abigail Miller Arnold reared eleven children. All but a son, Daniel, had farms near Romney. On September 3, 1816, 24-year-old Daniel married 21-year-old Catharine Harshbarger who lived near Dayton, Virginia, about 50 miles south of the Arnold home. Daniel and Catharine farmed and ran a sawmill in Rockingham County (VA) until 1830 when they decided to move west. They sold their land, packed their possessions in wagons, and set off for Ohio with her parents, sisters, and families. Among the travelers were Daniel and Catharine Arnold's children, Samuel, 13; Joseph, 12; Elizabeth, 9; Henry H., 3; and year-old Abigail.

The travelers followed the National Road (now U.S. 40), which was completed to Columbus (OH). From Columbus, they made their way to Wayne Township, Montgomery County, Ohio. Many of the family members were elders or deacons in the German Baptist Brethren Church and formed the core of what was to become the Maple Grove Old German Baptist Church. They remained active in the church throughout their lives and many of their descendants remain, active members of the church, today.

On October 4, 1830, Henry Harshbarger, Catharine Arnold's father, bought 158 acres of land, part of which is now Carriage Hill Farm. He moved into the log house on the property. (The log house is now the volunteer office building.)
During the winter, Henry Harshbarger built a sawmill on Dry Run, the creek down the hill from the house. It was the first sawmill in Wayne Township, and it remained in use for 44 years.
In the spring, Daniel Arnold bought the 158 acres from his father-in-law for $2,000. Daniel, Catharine, and their five children moved into the log house, where they lived until they built a two-story brick house next door.

Bricks for the new house were fired in a kiln near the orchard, directly across Creek Road (now the farm access road) from the house. The location is near the present volunteer parking lot. The family moved into the house in 1836. At the time, Daniel was 44, Catherine 41, Samuel 19, Joseph 18, Elizabeth 15, Henry H. 9, and Abigail 7.

CHILDREN OF DANIEL AND CATHARINE ARNOLD & EXTENDED FAMILY RELATIONSHIPS

Daniel's son Samuel helped with the building of the house. His signature can be seen above the mantle in the first-floor bedroom. Samuel married in 1839 and moved to the western part of Montgomery County.

Another son, Joseph Arnold, attended school and worked with his brothers on the family farm and in the sawmill, becoming a talented mechanic, carpenter, and millwright. On May 19, 1840, at the age of twenty-two, he married Elizabeth (Betsy) Frantz of Clark County. For the first few years of their marriage, they probably lived in the log house. In 1843, Joseph bought 76 acres from his father. By 1846, he built a small, two-story frame house on his property. It is no longer standing but is thought to have been located behind and to the west of the present Joseph Arnold home. The lumber was probably prepared at the family sawmill. Joseph was very talented at planning and erecting his buildings. He also built a barn and outbuildings including a spring house, smokehouse, icehouse, and bake oven in the following years.

Elizabeth Arnold married in 1840 and moved to Miami County. In March, Abigail, the youngest child, died at age ten and was the first person buried in the family cemetery at Carriage Hill Farm.

Henry H. Arnold married Magdelina Crist in 1847 and moved into the log house. Joseph and Henry continued working in the sawmill together as well as working on their farms; Henry helping his father and Joseph working on his land. The brothers helped each other with large farm tasks such as planting, harvesting, and butchering.

Family ties were further strengthened when Betsy Arnold's father, Michael Frantz, married Magdelina Arnold's stepmother, Catherine Ohmart Crist. The two families would share Grandmother Frantz for many years to come.
Joseph and Elizabeth, or Betsy as she was called by family members, never had any children of their own, but in 1850 they fostered an infant child, Catherine Neher, and raised her. Henry and Magdelina's first two children died in infancy, but a third, Elizabeth, or Lizzie, as she came to be called, was born in 1851. Later, they lost twins shortly after birth. They eventually lost five of nine children.

In 1852, Catherine Arnold, Joseph, and Henry's mother died and was buried in the family cemetery overlooking the farm. Henry, Magdelina, and their one-year-old daughter Lizzie moved into the brick house with Henry's father, Daniel.
In 1853, Joseph Arnold was elected to the office of the Visit, a position which required him to visit needy Brethren families. He loaned his time and money to family and friends throughout his life when needed.

In 1853, Joseph probably built the Country Federal house now known as the Joseph Arnold House. Joseph's brick house was originally rectangular, the cooking is done in the front east room, first in the fireplace which had a log beam mantle and sides dovetailed at the corners, and eventually on a cook stove. An enclosed walnut staircase separated the kitchen from the parlor or living room. His bank barn was built in 1856.

In 1861, Henry bought 144 acres of the old Arnold homestead from his father, Daniel. During these years, Joseph's foster daughter, Catherine, and Henry's children undoubtedly spent many hours playing together on each other's farms. Joseph wrote to his uncle, Henry Harshbarger, in Virginia that "we are all well, meaning my family and brother Henry's with father for we are close together nearly as one family."

In 1864, Daniel Arnold, Joseph, and Henry's father died. By this time Joseph's daughter Catherine (Caty) was fifteen. Henry's children numbered four; Lizzie was thirteen, Daniel was nine, Silas was four, and Henry C. was two. The following year, Henry and Magdelina buried their son Daniel, aged almost ten years, a victim of diphtheria.

The two families remained close. Betsy Arnold, Joseph's wife, recorded in her diaries in 1868 and 1876 that she and Caty often went to Magdelina's to quilt, and that Caty and Joseph would go to help butcher. The families would visit back and forth throughout the week and eat together after Sunday meetings on numerous occasions. In 1869, Henry's last-child, Emma Alice, was born.

In 1870, Joseph attended his first annual meeting of the German Baptist Brethren and would do so every year until his death thirty years later. The year 1872 brought the death of Joseph's foster daughter Catherine, at the young age of twenty-two, a victim of tuberculosis. It also brought two new foster children to his door, a sister and brother, Melissa, and John Baird, aged twelve and ten.

Joseph's diary of 1873 records many days of helping his brother Henry saw wood, load barley, butcher, cut wheat, and repair machinery. Henry's diary for the same year records how Joseph was ill for several weeks and every day Henry was there as well as Magdelina to help care for him and tend to farm chores like threshing and apple picking. Joseph and Henry helped each other maintain the graveyard.

John and Melissa visited their cousins almost daily. Aunt Betsy helped Lizzie quilt. Lizzie made Melissa a bonnet and both girls wove a basket together. Lizzie and the younger ones crossed the creek often to visit Uncle Joe (Joseph Arnold).
In 1875 Joseph advanced to the position of Elder in the church. That same year, the family sawmill operation on Dry Run ended. In 1876, Henry's oldest daughter Lizzie married James Brubaker and the newlyweds moved into the log house. The log house soon became known as "the weaning house." Their first child, Alfred, was born in 1878.

Joseph and Henry each constructed a two-story brick addition to his house in 1878. Henry had the bank barn constructed at the same time. Henry sided the log house in 1879.
Joseph's and Henry's children were growing up. John was sixteen. Melissa was eighteen as was Henry's son Silas. Henry C. was fifteen and Emma was nine. James and Lizzie welcomed the arrival of a new daughter, Adria, in 1879. The children still played on each other's side of the creek. Emma found a swarm of bees on her Uncle Joe's property and Henry hived them. Joseph continued to progress in the church. He was ordained in 1880 and his ministry was always an important part of his life.

The year 1881 was a tumultuous one among German Baptists. The favorable response of some members towards progress and change and away from the simplicity and fundamental teachings of the church resulted in a split of congregations throughout Southern Ohio and elsewhere. The congregations split into Old Order German Baptists who wished to retain the old ways, and what eventually became the Church of the Brethren, or conservatives, as they called themselves. Joseph held the oversight at the Hickory Grove Church at this time and preached extensively throughout the valley. He stayed with the Old Order as did the rest of his family when the church split. Joseph and Henry were instrumental in planning and constructing a new meeting house for the Old Order congregation when the conservatives retained the original meeting house. Joseph donated the land for the new church.

Despite the church controversy, Joseph found time to begin the construction of a house for James and Lizzie. They moved out of the log house to Miami County near New Carlisle.

An event that further strengthened ties between Henry and Joseph was the marriage of Henry's son Silas to Joseph's foster daughter Melissa in 1881. Silas and Melissa made their first home in the log house. Their first child, Effie, was born in 1882. Joseph made the benches for the newly completed meeting house that same year.

Joseph and Henry worked together in Henry's woodshop to build a footbridge to lay across Dry Run about this time, making it easier for family members to visit back and forth. The story has been told that Joseph's foster son, John, used to lie on his stomach on the bridge with a chew of tobacco in his mouth and snare fish with a copper wire on Sundays when everyone else was at the meeting. He couldn't take any fish home though, because he would have gotten into trouble for fishing on Sunday.

In 1884, Joseph's foster son, John Baird, married Phoebe Crist. Melissa helped to ready Joseph's original house for them to live in. Joseph built his farm pond this same year. A daughter, Clara, was born to John and Phoebe in 1885. In 1886, the Bairds moved to a house built for them by Joseph on property near the new Maple Grove Church. The birth of a grandson named Joseph surely warmed Grandpap Arnold's heart. When John Baird moved his family away from Joseph's house, Silas and Melissa moved from the log house to live with Joseph and Betsy. A son, Charles, was born to Silas and Melissa in 1890.

In December of 1891, Henry C., Henry H's son, married Sally Deeter. Henry and Sally set up housekeeping in the Daniel Arnold House, while Henry H., Magdelina, and Emma moved into the log house, no longer needing so much room. In 1892, Silas and Melissa moved with their two children, Effie (ten) and Charles (two), to Beavertown in Van Buren Township where they set up a poultry and horticulture business.
Joseph and Betsy were in their seventies by then and unable to take care of the farm by themselves. At some time in the 1890s, another church family, Solomon and Sophia Click, and their two daughters moved into the back section of Joseph's home to keep house and help with the farm chores. Henry H. was nine years younger than Joseph and continued to help when needed. Silas and Melissa, James and Lizzie, Henry C. and Sally, and John and Phoebe and the numerous grandchildren they brought back to the Arnold homestead kept the spirit of closeness and large extended family alive during the nineties.

Joseph is remembered as a man of average height, a little chunky perhaps, but very congenial, generous, and hardworking. The family says, "he looked like Henry", with his white beard, but was soft-spoken, while Henry was a bit sharper-tongued and independent.
In 1899, Betsy, Joseph's wife of fifty-nine years, died. Joseph had done much for her; washing, sewing, and caring for her as she had always been frail. He took her loss very hard.

On June 25, 1900, Joseph reached the end of his life. Grandchildren remember him lying in bed in the downstairs bedroom of his home, his white hair spread out on the pillow. The window was open, and a little bird flew in and hovered over his head. He died soon after.

Joseph was buried in the Hickory Grove Cemetery. Henry bought his brother's boots and hat when Joseph's possessions were put up for sale after a nephew contested his will. The farm passed to Melissa Arnold, Joseph's foster daughter. Henry's wife, Magdelina, died of cancer in 1902. Henry C. and his wife lived in the brick house until 1908 when they moved to her family's farm near Covington. Henry lived on with his daughter Emma in the log house until he died in 1910.

There is something to be learned from the network of support and inspiration enjoyed by the Arnolds over a century ago. It is this extended family relationship, the farming lifestyle, and the typical daily activities of a conservative family, like many others in the Miami Valley, that the volunteers at Carriage Hill bring to life.

Henry H. Arnold and Magdelina Arnold, ca. 1847

SEQUENCE OF TIME

1830 Daniel and Catherine Arnold came to Ohio. Sawmill operation began on Dry Run. The family lived in the log house.

1836 Front section of Daniel Arnold House built.

1839 Catharine and Daniel's son, Samuel, married and moved.

1840 Joseph married Elizabeth (Betsy) Frantz of Clark County. Abigail Arnold died and was buried on the farm. Elizabeth married Daniel Funderburg and moved.

1843 Joseph bought 76 acres south of Dry Run from his father Daniel Arnold.

1846 Joseph built a frame house on the hill south of Dry Run.

1847 Henry H. Arnold married Magdelina (Maggie) Crist and moved into the log house.

1848 Henry H. and Maggie's daughter, Catharine, was born and died.

1850 Joseph and Betsy took in an infant daughter, Catherine Neher.

1850 Henry H. and Maggie's son, Noah, was stillborn.

1851 Henry H. and Maggie's daughter, Elizabeth Crist, was born.

1852 Joseph and Henry's mother, Catherine Arnold, died. Henry H. and his family moved into Daniel Arnold's house with him.

1853 Joseph built the front section of the red brick house next to the frame house on the hill south of Dry Run, now known as the Joseph Arnold House.

1855 Henry H. and Maggie's son, Daniel, was born.

1858 Henry H. and Maggie's sons, Joseph, and Jacob were born and died.

1859 Joseph built his barn.

1860 Henry H. and Maggie's son, Silas, was born.

1861 Henry H. buys farm from father, Daniel.

1863 Henry H. and Maggie's son, Henry C., was born.

1864 Daniel Arnold died.

1865 Young Daniel Arnold died.

1869 Henry and Maggie's last-child, Emma, was born.

1872 Joseph's foster daughter, Catherine Neher, died of tuberculosis. Two new foster children, a brother and sister, John, and Melissa Baird, came to Joseph's to live.

1875 Sawmill operation on Dry Run ended.

1876 Henry H. Arnold's daughter, Elizabeth, married and moved into the log house. Her husband, James Brubaker, worked on the farm.

1878 Henry H. and Joseph added on to their houses; Henry's bank barn was built.

1879 Log house was sided.

1881 Church division occurred.

1881 Melissa Baird, Joseph's foster daughter, married Silas J. Arnold, Henry H. Arnold's son. They moved into the log house. Elizabeth and her family had already moved to Clark County.

1884 John Baird, Joseph's foster son, married Phoebe Crist and moved into Joseph's original frame house. Joseph built his farm pond.

1886 Joseph and Henry built the footbridge across Dry Run. John and Phoebe moved to Miami County. Silas and Melissa moved in with Joseph and Elizabeth.

1891 Henry C. Arnold, Henry H. Arnold's son, married Sally Deeter. They set up housekeeping in the Daniel Arnold house. Henry H., his wife, and daughter, Emma, moved into the log house.

1892 Silas and Melissa moved to Beavertown. Solomon and Sophia Click moved to Joseph's.

1899 Joseph's wife, Elizabeth, died.

1900 Joseph Arnold died.

1902 Henry H. Arnold's wife, Magdelina, died.

1910 Henry H. Arnold died.

1968 Carriage Hill is acquired by the Dayton-Montgomery Co. Park District (Now known as Five Rivers MetroParks)

THE ARNOLD FAMILY CEMETERY

The Arnold Cemetery is located on a knoll in the field south of the Old Arnold Homestead. The Cemetery is enclosed in a 20-foot square limestone wall built by the family, probably between 1873 and 1874. There are references in Joseph Arnold's diary in 1873 to support this:

June 2, 1873 "Helped to haul stone to the graveyard"
December 4, 1873 "Helped to haul stone to the graveyard"
December 5, 1873 "Finished hauling stones to the graveyard"

The slabs are set into the ground to help stabilize them. In addition, metal tabs are attached near the top of each slab section to hold them together as a wall. These walls reflect the skill, craftsmanship, and lifestyle of the Arnold Family.

Row 1
Daniel Arnold, died 14 July 1864, age 72y 11d
Catherine Arnold, the wife of Daniel, died 6 Dec 1852, age 57y 10m l9d
Daniel Arnold, son of H.H. and M., died 16 Mar 1865, age 9y 7m 22d
Henry H. Arnold, father, 11 Jan 1827, died 10 Dec 1910, age 83y 10m 29d
Magdelina Arnold, the mother, and wife of Henry H., born in Clark Co., Ohio, 5 Aug 1825, died 9 Mar 1902, age 75y 7m 4d

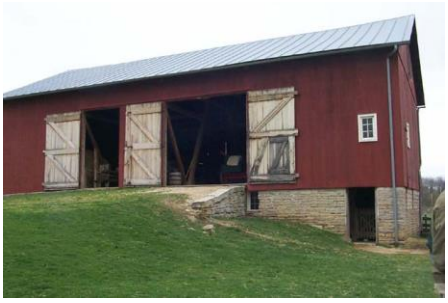
Row 2
Abigail Arnold, daughter of Daniel and Catherine, died 26 Mar 1840, age 10y 6m 22d
Catherine Arnold, daughter of Henry and Magdelina, died 3 July 1849, age 10m.
Noah, son of Henry and Magdelina Arnold, born July 21, 1850, died July 21, 1850
Joseph and Jacob Arnold, (twin) sons of Henry H. and Magdelina, died 10 Aug 1858, age 12d

A rose is inscribed on one of the stones in the cemetery.

The Diary of Henry H. Arnold dated July 25, 1894, reads: "Mrs. Greider, Mary, and Jacob were here today. I and Jacob make a new fence around the graves of the Wolf, Bealer, and Greider Children." This would indicate that 3 graves were located outside of the stone wall. One original stone remains. Samuel Wolf, son of J+S., died 8 Oct 1843. 3y 5mo 8d. Family memory

indicates that a paling fence surrounded these graves, and the stones were very close to the wall.

Based on the brochure written by Hal and Phyllis Miller



FARM BUILDINGS AND AREAS

The Arnolds were relatively affluent farmers and the variety of buildings used by the family exemplify their lifestyle very well.

Bank Barn

The original barn was built in 1878. Henry Arnold contracted with stonemasons by the name of Braumiller to lay the foundation for the barn. The Braumiller family tradition indicates that at the same time they also laid the bricks for the addition to the house. A stone on the southeast side of the barn gives the builders' names and dates. This structure is called a bank barn because of being built on a slope and has entrances on both levels.

The upper level is used for storage. Straw is stacked on the north side; wagons are stored in the center and hay is stacked on the south. Grain storage bins open into the center section. There are three feed chutes and hay drops leading to the lower barn. At the time the barn was built it was thought quite extraordinary that Henry Arnold had built a regular stairway leading to the loft rather than having a ladder installed. A few short-hewn beams are placed at right angles to the structural timber in the right-center section. This could have been used for the hanging of tobacco and the storage of their sleigh and other light implements. The barn was reconstructed after a fire in 1987.

The layout of the lower barn has been changed somewhat to accommodate the public. An animal viewing walkway was built into the center section. Originally the barn had a dirt floor, but this has been covered with concrete. The barn foundation is original.

Log Barn

A log barn stood on the south slope of the Farm until into the twentieth century. It was constructed with hand-hewn timbers and partitions and then was sided. The three-bay

structure was used for hay and implemented storage by the 1880s. This period building was moved to the site and reconstructed in 1981.

Woodshop & Engine Shed

The Arnold men were fine woodworkers in addition to being sawyers. Much of the family furniture was built by them. Henry Arnold drilled his initials in his workbench which stood on the west wall. The workbenches are now arranged to separate the visitors from the woodworking equipment. Attached to the north side of the building is the engine shed. This building was reconstructed in 1979 by volunteers and staff.

Smokehouse

After butchering, the meat is heavily salted and hung in the smokehouse. A low smoky fire is kept burning night and day for a week until the curing of the hams, bacon, and sausage is complete. This building is a reconstruction on the original site where the smokehouse was.

Windmill

The Arnolds built a wooden windmill near the barn to pump water. This blew down in 1901 and was replaced by a metal structure. This reconstructed structure is based on a family photograph.

Icehouse

The icehouse is constructed to be as airtight as possible; this keeps the least amount of air circulation around the ice to help keep it cool. The creek was dammed to deepen it and the ice was cut in January or February and stored in the icehouse. Sawdust was spread over the blocks to insulate them. This building is a 1979 reconstruction.

Blacksmith Shop

The blacksmith shop was reconstructed on its approximate original site in 1976. Although the Arnolds were not farriers and did not smith for the community, they probably crafted many of their hinges, and buggy parts and implemented the repair. Most people took their metal repairs to a commercial blacksmith.

Poultry House
This small, reconstructed building built with board and batten construction, housed chickens for family use as well as egg production for selling as a cash crop. The chickens were not fenced in, but rather the yard and kitchen garden was fenced to keep them out. The chickens are fenced in at night to protect them from predators.

Buggy Shed
The small frame building was used to house the buggies. It could hold two buggies, side by side. This is a reconstruction.

Woodshed
The primary fuel for all heating, cooking, and steam power was wood. It was necessary to store it as conveniently as possible near the house, summer kitchen and engine shed. Keeping the wood dry was also a necessity. This building is a reconstruction.

Wash House and Summer Kitchen
This building was built in 1851. A fireplace or stove had to be stoked all day to cook the meals and the amount of heat buildup was tremendous. To remedy the heat problem in the summer, many people had kitchens removed from the main house to which they would move their kettles, utensils, dishes, and food. In the fall, everything would be moved back into the house to take advantage of the kitchen heat. The screened portion of the building was used as a washhouse throughout the year. The building off to the side was a cooling shed. It was used to keep items cold by placing them in a stone trough filled with water and ice.

After the family purchased a cook stove, it was also moved back and forth seasonally. A small summer kitchen to contain the stove was added to the original structure. The family continued to use the original summer kitchen as a wash house and ate their meals in it during the warm months while the cooking was done in the new building. Carriage Hill Farm now has two cook stoves so that these fragile period pieces do not have to be moved. The new summer kitchen was reconstructed in 1997.

HISTORIC HOUSE INTERPRETIVE INFORMATION

The People of Carriage Hill

- The Arnold family was German Baptist Brethren, and their religion greatly influenced their lifestyle
- They were somewhat affluent, not merely subsistence farmers
- They were above-average craftsmen
- They were progressive in their farming practices and mechanical interests

Construction of the House

- The brick farmhouse is called the D. A. house because it was built by Daniel and Catharine Arnold. They lived in the Log House from 1830 until the brick home was completed in 1836
- The brick home was originally a "center hall house" common in Virginia, with 2 rooms down and 2-3 up
- The woodwork throughout the house is walnut. The woodwork was painted in the 1950s but has been stripped and restored by staff and volunteers.
- The wall separating the front parlor and the bedroom is made of poplar with a chair rail of walnut. This wall had been removed during a 20th-century renovation and was reconstructed to match the original wall immediately above it on the second floor.
- All the floors in the house are made of ash and are original
- The doorway leading from the parlor to the porch is newer (between 1898 and 1906). It replaced a window, which was moved to the west wall in the downstairs bedroom.

- The windowsills are wide due to the thickness of the outer walls.
- The window glass in the front section of the house appears wavier than that in the newer section due to technological improvements. The early windowpanes contain glass which was made by blowing a sphere and spinning it to form a flat sheet, thus creating waves and bubbles, and was limited in size. Improvements in technology in the 1850s and 1860s allowed the creation of smoother and larger panes of glass.

Furnishing the House

- The house is furnished in a very plain and simple fashion, based on the recollections of Henry H. Arnold's grandchildren who lived in the house in the 1890s.
- The family being German Baptist affected their furniture selection. We have no evidence that there was ever a sofa in the house, only many rockers and straight-back chairs

Parlor

- Two of the arrow-back chairs were built by Henry H. Arnold.
- The parlor was reserved for company, and diary entries cite its use for the first meeting of the Old German Baptist Church.
- An album containing family photos is located on the table in the front parlor.
- Fireplaces and wood stoves were the sources of heat for the home.

Bedroom

- The downstairs bedroom was always the master bedroom.
- The bed and bureau are plain in comparison with the ornate Victorian furnishings common to the period.
- The bed has both straw and feather ticks (mattresses) which are held up by tautly stretched rope. The wooden "key" on the bed is used to tighten the ropes. Note: Although you may have heard that the phrase "sleep tight" refers to tightening the ropes on a bed, please do not mention this in your house tours. Our research has shown that the word "tight" in the 18th and 19th centuries meant to do something well or completely. The phrase simply meant sleep well. We have found no documentation from the 19th century that traces the phrase to rope beds, and a leading university word specialist has reached the same conclusion. We need to be careful about repeating what we hear at other sites – they may not have it right!
- The chamber pot under the bed would have been used when it was dark and a trip to the outhouse was necessary.
- In fall, pumpkins were stored under the bed, because the bedroom stayed drier than the basement.
- The barrel in the corner would have been used to store sweet potatoes.
- The trunks were used to store blankets and clothing.

- The pitcher and bowl set would have been used for face-washing in the morning and a daily sponge bath.
- Samuel Arnold, a young adult when the room was plastered, wrote his name above the mantle. It was left uncovered to share this bit of family history with the public.
- The walnut cradle is a reproduction of the one built by Henry Arnold for his children.
- The family chart on the wall did belong to the family. Aside from this piece, the church frowned upon decorating with pictures.

Dining room/family sitting room

- The dining room was used for big family dinners and threshing dinners. It was often used in the same way that we use our family rooms today. The family would gather there to sew, read, or talk.
- A wall pocket is located to the right of the medicine chest. This is one of the few family pieces that reflect the Victorian style. It was used to hold newspapers and magazines.
- The period clock is like one owned by the family.

Kitchen

- The fireplace was used for heat, and perhaps for heating water. Very few people were cooking on a hearth when this 1878 addition was built. The bathing was probably done here.
- The table is a reproduction of the one used by the family in the 1880s and the chairs are copied from those brought from Virginia when the Arnolds came in 1830.
- Two panes of glass in the window by the table have "MINA" scratched on them. Mina's brother Lawrence did this as a childhood prank at some point in the 1890s.
- The pie-safe cabinet has pierced tin panels that permit air to circulate while food from flies and mice.
- The pitcher pump in the pantry originally brought cistern water into the house but is now attached to a drinkable water supply.

KITCHEN INTERPRETIVE INFORMATION

Our primary function in the kitchens at Carriage Hill is to interpret farm life as it relates to kitchen activities. It's an opportunity to integrate information about the gardens, food storage methods, the availability of foodstuffs in urban situations, women's work on the farm, and seasonal changes. Our goal is to share our knowledge and talents with the visiting public and help them experience daily farm life a century ago. Remember that a smile and enthusiasm are as important as your talents and knowledge.

Carriage Hill Farm has both summer and winter kitchens, as well as an outdoor bake oven.

The winter kitchen is in the main house and includes the cook stove, water pump, and pantry.

- It is part of the house addition built in 1878 by Henry H. Arnold.
- The fireplace in the kitchen was possibly used for cooking until the cook stove was purchased sometime before 1891, although fireplace cooking was becoming obsolete in this area by the latter part of the 19th century. A more probable explanation is that the fireplace was used during cool spring and fall days when the stove was out of the main house.

The original summer kitchen/wash house, with its large fireplace, was built in 1851.

- Built away from the main house, its major purpose was to keep the extreme heat from cooking away from the house during warm weather.

- Each spring the family would move its kettles, utensils, dishes, and food to the summer kitchen. In the fall everything would be moved back into the main house.
- After the cook stove was purchased, it was also moved back and forth seasonally and was in the room next to the brick building.
- The dinner bell on the roof was used to call the men to dinner.
- The screened portion of the building was used as a wash house year-round.

Kitchen Furnishings

- A large work/eating table, chairs, a dry sink, a pie safe, and a cook stove were usually the only major furnishings.
- The dry sink allowed the storage of water containers, towels, and soap and provided a place for washing hands and dishes.
- The pie safe with its pierced tins, permitted air to circulate throughout the cabinet. Non-perishables were placed in the cabinet to keep flies and mice out of the food supplies.

Cookstoves

- The winter kitchen cook stove firebox is on the left-hand side. Shake down the ashes and lay the fire. Be sure to have the lever on the front next to the oven door pushed in.
- After a fire is burning, it can be regulated by closing the drafts' part way.
- If you are planning to use the oven, pull the lever near the oven door out. It is necessary to have a fire going well before the lever is pulled to prevent the escape of smoke through the stove lids.
- The summer kitchen cook stove operates in a similar manner. The firebox and oven open on the left-hand side of the stove.

Bake Oven

- The bake oven was probably not used regularly after the cook stove was purchased. We do know that it was repaired and used for many baked goods for a church meeting. It was easier to use a cook-stove oven for the weekly baking. Carriage Hill's bake oven is a reconstruction of its original foundation site.
- To use the bake oven, open the draft in the front door and build a large fire in the oven. Keep a large fire going for an hour or so, stoke it again and let it burn down for another hour. Scrape the wood and ashes into a metal container in front of the oven and put your pans inside the oven. It is the heat in the bricks that will bake the bread. Close the door draft to keep the heat in.

Fires

- Many interpretive demonstrations include building fires. Fires in the bake oven, parlor stove, and cook stoves are all built in a similar fashion using paper, kindling (corncobs, twigs, or shavings), and wood. Do not put other things into the fires as it may ruin the ashes that are used for making lye.
- Newspapers can be found in the barrel in the pantry.
- Kindling is next to the wood box.
- Wood is in the wood boxes in the kitchen and on the side porch.
- Know where the fire extinguishers are. Extinguishers are located behind the door in the wash house, on the door frame inside the pantry, in the summer kitchen, and the basement stairwell.
- Be cautious with long dresses, as it is very easy to scorch them.
- Lastly, always be aware of where visitors are when standing near a wood stove.

Flies

- Flies were a fact of life to the 19th-century homemaker. Interpret them by keeping towels over food, lids on pots, using the fly screen, and the flycatchers.

Freezer

- The refrigerator freezer can be used for storing items that need to be frozen. The upright freezer is for long-term storage and must be closed securely.

Recipes

- All recipes must be documented in a period cookbook. We have many recipes available both in the pantry and the library. Please contact the Education Coordinator for additional period recipes.
- Be sure you are using ingredients that were available at this time of year. Explain to the visitor where you would have gotten the ingredients – cellar, garden, purchased canned, brought in by the railroad, etc.

Staples

- Most of the staples are provided. Staples will be stored in jars in the pantry or jars on the shelf in the summer kitchen. Additional staples are stored in the plastic containers in the basement.
- If you plan to fix an item we normally do not keep on hand, please contact the Education Coordinator a few days ahead of time so that the item may be purchased for you. Also, check ahead of time to make sure we have ice available if you plan to make ice cream.
- When needed, transfer ingredients to period-correct containers keeping all modern items out of sight.

Water

- The pump in the pantry does have drinkable water. The pump may have to be primed by pouring a little water in the top while pumping.
- Remember that the sink has no drain so when members of the public pump water you must also take the pan out and dump it.
- Be sure to leave a full pitcher of water so the next person may prime the pump.

Matches

- Matches are kept in a tin in the pantry or on the kitchen mantle. Please be careful to keep them away from the public.

Clean Up

- Kitchen cleanup is an important part of a period cooking demonstration. Plan your kitchen cleanup so that you can be finished by closing time.

Non-Cooking Demonstrations

- You may choose to demonstrate other homemaking skills such as apple drying (we have drying racks), shelling peas, washing clothes in the summer kitchen, washing oil lamps, ironing clothes, ice cream making, butter churning, snapping beans, stringing beans to dry and cutting garden vegetables to give a few suggestions. Contact the Education Coordinator or Volunteer Coordinator for information.

Samples

- Our visitors enjoy sampling period cooking, but the demonstration is always the most important part. Please read and familiarize yourself with the Parks Food Safety Policy.
- Disposable cups, utensils, etc. are kept in plastic containers in the basement on the shelves by the water heater.

KITCHEN GARDEN & TRUCK PATCH INTERPRETIVE INFORMATION

Selecting garden seeds, hotbeds, and cold frames, and planting, maintaining, and harvesting garden produce was a very important part of 19th-century life. Although foodstuffs were available in the stores most farmers relied on the success of their gardens for their year-round diet.

At Carriage Hill Farm, there is ongoing research into what varieties were available to the ordinary farmer in the 1880s and what might have been planted in this area. References have been gleaned from period diaries, advertisements, books, papers, seed catalogs, and agricultural reports. Contemporary books addressing the problems of heirloom seeds, individuals who have preserved seeds, and information supplied by Seed Savers Exchange and the Association of Living Historical Farms and Agricultural Museums have been helpful.

Carriage Hill Farm has both a kitchen garden and a truck patch in their 19th-century locations. The kitchen garden is a relatively small garden area close to the house. It was planted with those small quantities of vegetables that were most likely to be used fresh in the summer kitchen. The northern end of the garden was planted with herbs, so they would be convenient for summertime cooking. The size, location, and appearance of the kitchen garden were described by the members of the Arnold family who were remembering the farm at the turn of the century.

The garden layout is typical of 19th-century German gardens both in Europe and in America. They were made with small beds with walkways between them, and they were usually fenced.

The large quantities of vegetables needed for winter storage and processing were grown in this garden. The pole beans, quantities of pumpkins, and other vegetables that require a lot of space were typically grown in the larger garden.

The term “truck patch” or market garden usually refers to a larger plot used to grow heavier produce to take to market. Farms that were located near a larger city or town would often rely on growing various items to sell to bring in extra income. Crops like pumpkins, potatoes, turnips, beans, and melons were all grown in these large plots. In some cases, a farmer could produce his yearly income by selling just heavy vegetables and crops. In the case of the Arnold family, they discuss in their diaries that they produced “two wagon loads of turnips to take to market”. This gives a better idea of the quantities that would be produced through market gardening. The term “truck” was used in several different ways during the 1880s. It could refer to heavy products that would be taken to market to sell. It could also refer to a

heavy wagon used to haul produce. Lastly, it could be used as a verb in describing how something was hauled to town. Thus, the produce was “trucked” to town.

BLACKSMITH SHOP INTERPRETIVE INFORMATION

The blacksmith shop at Carriage Hill represents a farm shop that would be used to repair implements and make ordinary repair tools around the farm. Henry Arnold, the head of the household a century ago, characterized himself as being a "natural mechanic and farmer" and undoubtedly had more than the usual abilities as a mechanic and probably as a blacksmith. The very fact that separate buildings were used for woodworking and blacksmithing indicates that there was more than ordinary interest in the two activities.

Henry Arnold, according to his grandchildren, was always more interested in his mechanical pursuits than he was the farming, although most of his income came from farming. He was interested in and purchased the more innovative farm implements.

The size, appearance, and location of the shop were dictated by family recollections. A wagon or piece of machinery could have been stored there awaiting repairs. Diary entries indicate that both wagon and steam engine repairs were done there, however, most entries just say, "I worked some in the smith shop."
The following article was provided by Charlie Wiltrout:

Spend a few hours in the blacksmith shop and you will hear several standard comments from visitors:

"This is where they made all the metal things they needed because they couldn't just go to the store."

"This is the blacksmith; he makes horseshoes."

The truth is that the Arnolds did not make all the metal things they needed, and Henry's diary indicates that they had their horses shod by blacksmiths in the area within a few miles of the farm.

The shop at the farm was a farm shop, not a production shop. The shop did not utilize full-time smith-making items for sale. It was used by the Arnolds as needed primarily for repairing tools, implements, etc. It would not have been used every day, and due to the relatively simple lifestyle of the German Baptists, they would not have made fancy decorative items. They also would not have spent time making labor-intensive iron items that they could easily buy at a hardware store. For example, why would they go through the tedious time-consuming job of making nails by hand when they could buy a pound of machine nails for a few pennies? (There were nail-making machines patented as early as 1790.)

Probably most reasonably sized farms of the time had some kind of "blacksmith shop" somewhere on the farm even if it was just a corner of a wagon shed. The farmer needed a place to repair a broken mower blade, sharpen a pickaxe or make an occasional simple gate hook, bracket, or brace. (The iron wall braces on the wall of the family cemetery at Carriage Hill were probably made at the shop on the farm.

An ad in a 1902 Sears catalog for blacksmith tools says:

"Buy your own tools, do your own work and save money. Sharpen the plows, shoe the horses, set the loose tires, and mend the machinery. With an outfit selected from this list every farmer, ranchman and mechanic can be his own blacksmith. No delay for repairs in the busy season while the team and a man have gone to the blacksmith shop. Again, if you have an outfit, you will improve rainy days to fix up things that are showing wear and avoid costly vexations and dangerous breakages in a busy time."

An "outfit" consisting of a metal forge, an anvil, a vice, a post drill, a couple of hammers, and a couple of pairs of tongs could be purchased from Sears in the 1902 catalog for $25.00. Since the Arnolds had a sawmill, and Henry had a fondness for machinery and equipment, they probably had lots of things to repair.

Visit any working farm today and you will find the equivalent of Arnold's blacksmith shop. The farmer will have some place where he has an oxy-acetylene torch, a welder, a vice, some tools, and maybe even an old anvil or a piece of a railroad rail to use as an anvil. He uses his modern-day blacksmith shop to save time and money to make needed repairs just as the Arnolds did 100 years ago. (C.W)

Not all 19th-century farms had blacksmithing capability as evidenced in 31 property appraisals were only 2 listed blacksmith tools. While many farmers exhibited fine mechanical skills, many had to rely on the local blacksmith for support.

The following information pertains to early 19th-century ironwork however, most remains applicable to the 1880s. This information was provided from a lecture entitled "Early 19th Century Ironwork" by Thomas Sanders, Fort Snelling, Minnesota.

BASIC BLACKSMITHING TECHNOLOGICAL TYPES

Additive	Manipulative	Subtractive
Welding	Drawing	Filing
Brazing	Upsetting	Cutting
Soldering	Spreading	Drilling
Riveting	Bending	Threading
Case-hardening	Piercing	
	Hardening	
	Tempering	
	Splitting	
	Welding	
	Swaging	

"Smithing is the art of uniting several lumps of iron into one mass, and of forming any lump or mass of iron into any intended shape." (Nicholson, 1811:260). Blacksmiths unite and form lumps of iron by heat and pressure. To form (or forge) and unite (rivet, weld, braze, or solder) iron, a blacksmith needs to heat iron to temperatures between 1550- and 2400 degrees Fahrenheit. This is done in a forge fueled by charcoal or coal. For the pressure needed to forge and weld iron, a hammer is struck against an anvil with the heated iron between.

The temperature of iron is controlled and used by the smiths according to the process he is planning to use. He controls the temperature by the length of time he leaves the iron in the fire, the amount of air supplied to the fire and the size and depth of the fire. Since the subject of our study is the early 19th-century blacksmith, the different temperatures of heat used here will refer to those used on wrought iron, blister steel, shear, and cast steel. The mild steel and tool steel of the late nineteenth and 20th- century smith required the use of different temperatures when working them. The basic heats used by the early 19th-century smith were blood-red heat, white flame heat, and sparkling or welding heat (Nicholson 1811:265). The blood-red heat (1550 degrees Fahrenheit) is used to smooth the surface with a hammer after its shape has been achieved. The white flame heat (2000 degrees Fahrenheit) is used to draw, upset, spread, bend, pierce, cut, and split iron. The sparkling heat (2200 2400 degrees Fahrenheit) is used to weld iron.

Blacksmithing includes **additive, subtractive and manipulative technology**. For a list of the basic blacksmithing processes by their type of technology, see Table I.

Listed under **manipulative technology** are drawing, upsetting, spreading, slitting, bending, piercing, hardening, and tempering. All manipulative processes alter the form of iron without a significant loss or gain of volume.

Drawing is the reduction of iron or steel by cross-sectional area and at the same time increasing its length. This is done by hammer and anvil, either using the face or the peen of the hammer or by using a fuller, hammer, and anvil. (For a more detailed description of tools and their use, see the tool section.)

Upsetting or jumping up is the thickening and shortening of iron and steel by driving it into itself with a hammer.

Swaging is a molding process like casting except the iron is not melted but softened by heating to a yellow or white heat and formed between two blocks of iron: each having one-half of the desired shape. The bottom half is fixed to the anvil in its square hole. The top half is handled. The heated iron is placed between the swages and struck with a hammer.

Spreading is the reduction of iron or steel in thickness while achieving optimum lateral spread at a right angle to the central axis of the bar. This process is done by using the peen of a hammer and anvil. This can also be done using a fuller.

Bending is the changing of the direction of a bar of iron in any of various angles or arcs of any degree using a vice, the horn of the anvil, or the corner of the anvil, and a hammer. If the stock is thin enough, pliers or tongs may be used to bend it.

Piercing is driving a punch through iron at a yellow heat. This is done with iron thicker than one-eighth of an inch. It can be done cold with iron less than one-eighth of an inch. A punch can be of almost any shape. For example, it can be round, square, or rectangular. A hole is pierced in iron by driving a punch with a hammer, with the iron placed on the anvil, until it is almost all the way through. Then the iron is turned over and placed on a bolster and the hole is finished by driving the punch through the reverse side. A bolster is a thick plate of iron with various-sized holes that are placed on the anvil to finish punching holes.

For iron to be **hardened and tempered** it first must have carbon added to make steel. In the early 19th century this was done by cementation, either by steel manufacturers or by the smith himself. The cementation process done by the smith was called case hardening and formed a very thin layer of steel on the piece of iron. In the process of case hardening, carbon is added to wrought iron to form a hard skin of steel on its surface. The cementation process done by the steel manufacturers could produce steel with the carbon distributed throughout the piece. Steel has the unique ability to be hardened and tempered. The process is done by heating the piece to a blood-red heat (1550 degrees Fahrenheit) and by rapid cooling in water it becomes harder than iron. However, at this point it is so hard it is brittle and must be tempered. It is tempered by slowly reheating the piece until oxidation colors begin to show.

These colors begin with yellow at 400 degrees Fahrenheit, brown at 500 degrees Fahrenheit, purple at 550 degrees Fahrenheit, and end with blue at 600 degrees Fahrenheit. Tempering controls the hardness of steel. Yellow is the hardest temper but is still too brittle to be used for anything but straight razors. Brown is good for pocketknife edges. Purple is used for blacksmith tools that are to be used on hot metal. Blue is good for cold chisels. A blue temper is the least hard and brittle.

Splitting is the cutting of iron while either hot or cold (best done at a yellow heat) but not completely removing any iron. For example, splitting the end of a bar of iron to form a fork. This can be done with either a hot or cold chisel. A hot chisel has its cutting edge shaped to a 30-degree angle and a cold chisel has a cutting edge shaped to a 60-degree angle.

Welding is the union of two or more pieces by heating them to a white sparkling heat (2200 2400 degrees Fahrenheit) and sprinkling the intended surfaces with flux (borax or sand) to clean the surfaces. Then the pieces are reheated to the sparkling heat and hammered together on the anvil. When a bar of iron is folded back upon itself and welded to increase its size, welding is a manipulative technology.

Additive Technology includes the processes of welding, brazing, soldering, riveting, and case hardening. Additive processes alter the forms of iron by the union of separate pieces of iron into one piece or, as in the process of case hardening, carbon is added to wrought iron to form a hard skin of steel on its surface.

Welding is an additive technology when two or more separate pieces are combined.

Brazing is joining two or more pieces of iron using brass or copper heated to a fluid state (brass 1900 degrees Fahrenheit, copper 1900 degrees Fahrenheit) in conjunction with its edges to be joined and then allowed to cool slowly. This process is used to repair cast iron (which cannot be forged or welded) and to join iron that is too thin to weld.

Soldering is joining two or more pieces of iron, brass, or tin. The solder and the pieces to be joined are heated to approximately 200 degrees Fahrenheit where the solder is reduced to a fluid state. Solder is an alloy of lead and tin.

Riveting is the union of two or more pieces of iron by battering the ends of a pin that has been placed through a hole that passes through both pieces.

Case Hardening is the process by which wrought iron has its surface converted into steel. This is done by packing an iron piece that has been forged into its intended

Shape in an iron box filled with vegetable or animal charcoal and kept at an orange heat (1900 degrees Fahrenheit) for an extended time. The longer the time the deeper the steel surface.

Subtractive Technology includes the processes of filing, cutting, drilling, and threading. Subtractive technologies alter the shape of iron by the removal of part of the iron to form the intended shape.

"**Filing** is the operation of cutting or tearing iron into particles or very small parts, called filings, using an instrument toothed all over its surface: the instrument itself is called a file" (Nicholson 1811:267).

Cutting is the removal of iron using chisels (either used hot or cold), metal saws, or shears.

Drilling is the boring of holes with a spinning bit, which cuts an exact round hole in the iron. This is done when an exact round hole is desired in a piece that has acquired its shape and punching would deform it, or the piece is too thick to punch.

Threading is the cutting of spiral grooves on screws and bolts with a screw plate and the cutting of spiral grooves in a hole in a plate of iron or a nut. Some early l9th century threading devices split thin slivers of metal and bent them to form threads. This type of threading is a manipulative technology.

WOODSHOP INTERPRETIVE INFORMATION

The interpretation of the tools and methods of work performed in the woodshop at Carriage Hill Farm is more important than the actual production of wooden items. Through proper interpretation, visitors will begin to understand the pride of craftsmanship and satisfaction experienced by woodworkers of the 1880s in producing useful items.

This section provides some specific information about the woodshop and its contents. It also briefly covers the procedures and provides some helpful suggestions.

The Shop

The shop has been reconstructed in the original location using the construction methods common to the 19th century. A band saw was used to cut the beams. The straight saw marks on the beams are typical of marks left by a vertical sawmill. The ceiling joists were recovered from a summer kitchen originally located at Possum Creek Reserve. (Limestone from the same building was used in constructing the icehouse.) The shop has mortise and tenon construction. The structural beams were raised in August 1979 by volunteers and MetroParks Staff.

Types of Work

As a farm wood shop, the type of work performed differed from that of cabinetry shops. While furniture making was still a fine art, handmade furniture was declining by 1880. The heavier Victorian furnishings popular at the time were mostly machine cut. Furniture was readily available in the stores in Dayton and could be ordered from the Montgomery Ward's Catalog.

From the review of family records and original family furnishings still available, we know that Henry H. Arnold was a skilled woodworker. Henry made many articles for his family, yet fine woodworking was only a small portion of the work performed in the shop.

The Arnolds had an overhead line shaft which, through a series of pulleys and belts, could be connected to the steam engine located at the north end of the shop. The shaft was used to power some of the shop machinery and a mill. There is a cistern under the engine shed that collects water for operating the steam engine. The cistern has been covered for safety reasons.

The building was probably most often used for grinding feed, although the present shop cannot accommodate the steam-powered mill and still leave room for the public. The woodshop was also used for butchering. The water in the scalding trough came from the cistern and was heated with steam from the steam engine. The hog was hung from the rafters and the benches were used to process the meat.

Maple syrup was boiled down in pans that were placed in the walkway between the engine and the woodshop. The pans were heated by steam like the way we presently boil down sorghum for molasses.

Most of the work in the woodshop consisted of repairs. Many pieces of farm machinery were wooden and replacement parts could be fashioned in the shop. Repairs of metal parts were done in the blacksmith shop. Typical items repaired might have included wagons, buggies, various farm machinery, and furniture.

Our work now includes repair and restoration of antiques, small projects to demonstrate the various tools, and some restoration of the house and the outbuildings. We try to have samples of our work on exhibit and, whenever possible, have projects in various stages of completion to aid in interpretation. There are ongoing projects of crates and benches for use on the farm.

The Tools

The woodshop contains a variety of tools, each with its specific purpose. We have a combination of restored, reproduction, and shop-built tools. We have a variety of tools to use in the shop to recreate an atmosphere of an 1880s woodshop. We try to obtain tools made before or during the 1880s as much as possible. Unfortunately, these tools often lack the strength and precision of their early years. We spend considerable time restoring them to usable condition and we must learn to properly use them. Many of these tools are quite delicate due to age. If you are not sure of the proper use of a tool, you may do research in the farm library or contact the volunteer coordinator who will try to find the information for you.

At times, we need tools that we have not been able to locate. We then use reproduction tools, make them ourselves, and if all else fails, use newer tools. Earlier craftsmen made many of their specialized tools. When making our tools, we attempt to make them in a design consistent with the period of the farm.

Treadle Wood Lathe

This model is circa 1890. Lathes of this type cost approximately eight dollars new. Only the metal parts were purchased. The craftsman built his table to suit his needs. This unit has a two-step pulley to allow changing speeds.

If you feel you need practice in lathe work, we always must turn stock to work on. This demonstration is popular with the visitors. What better way to improve your skills than on-the-job training? Do not allow visitors to use the lathe.
We perform our maintenance on the shop equipment. Be sure to put a drop of machine oil in the bearing holes on the headstock occasionally. The oil can is above the toolbox. Do not loosen or remove the headstock mounting bolts. This will change the alignment of the machine. If you have a problem with the machine, notify the Volunteer Coordinator or the weekend staff person.

Treadle Scroll Saw

This model dates to circa 1890 and 1900. It is used for making the intricate cuts and curves which are performed today by power band saws and jig saws. Some models had a seat mounted to the frame so the craftsman could sit down while working. Only trained woodshop volunteers should use this saw.

Jack Planes

These short planes sometimes called Scrub planes, often have a convex ground iron (blade). They are used to do the initial planning of the mill cut boards. These planes take off wood very quickly. Most of the older planes have wooden bodies. The iron is held in place by a wedge. The iron is adjusted by tapping one end or the other with a wooden mallet to raise or lower the iron (the toe to lower, the heel to rise, not the iron).

Trying Planes

These planes have a little longer body than the jack plane. They provide a finer cut than the jack planes and are used to smooth out wood after using the jack plane.

Jointer Planes

These long-bodied planes sometimes measure up to thirty inches long. They are used to plane the wood to a perfectly flat surface. The extreme length prevents the iron from cutting into the hollows until the hills are taken off. The craftsman can tell the wood is flat when an unbroken shaving emerges for the whole length of the workpiece.

Plow Planes

These specialized planes have an adjustable fence (guide) which allows the craftsman to cut a groove a given distance from one of the edges of the workpiece. These planes are used for making dados, plows, etc.

Molding Planes
These specialized planes are used to make the fancy wood trim seen in many old houses. Each plane is designed to cut a specific shape. Some have a fence to aid the craftsman. Some are two planes combined such as the tongue and groove plane. One side cuts the tongue and the other cuts the groove.

Draw Knife and Shaving Horse
These two tools are used together to quickly shape rough wood. The workpiece is held in the vice by pressure applied by the craftsman's foot. The knife is held with the bevel down and drawn toward the woodworker. Holding the blade at a slight angle allows easier cutting. Some items made with these two tools are shingles, handles, stool legs, etc.

Wood
The type of wood used is determined by the purpose of the item being made and the wood varieties available in the area. In this area, oak, walnut, cedar, maple, poplar, ash, elm, and hickory were common in the time of the Arnolds. Ash is used to make many tool handles as it becomes smoother with wear and will bend by steaming. Elm is considered the best material for manufacturing wheel hubs since the interlocking grain made it almost impossible to split. Poplar was, and currently is, one of the cheapest of the hardwoods and is used extensively for painted furniture, moldings, and siding.

Materials and Supplies
Carriage Hill MetroPark maintains a supply of wood for use in the woodshop. This material belongs to the Farm and should not be used for personal projects that are to be taken home. You are welcome to bring in personal projects to work on as long as the item is consistent with the 1880 farm scene. If you have a specific project you want to do for the farm, notify the Volunteer Coordinator or Education Coordinator of the quantity and type of wood and supplies you would like to request

Many volunteers are working in the shop, therefore please be careful when you pick some wood for a project. Stack or bundle any wood you have for a specific project against the wall and mark it with your name. This will prevent any misunderstandings caused by someone inadvertently using wood chosen for another project. The scrap pile is fair game for impromptu projects.

Safety and Accidents
Ensuring the safety of our visitors, volunteers and staff is our primary concern. The shop is arranged so that the workbenches act as a buffer between the public and the tools. Care must be taken to keep tools away from the front edges of the benches. Also, watch out for hands getting into the belt of the lathe.

The fire extinguisher is located on the south wall by the door on the way out. If you need to use it get everyone out of the shop, use the extinguisher, get yourself out of danger, call the fire department, and notify the park staff.

STEAM ENGINE INTERPRETIVE INFORMATION

The Arnold family records indicate that they owned and used a steam engine, a Brownell, during the 1880s period. It was purchased in 1866. Carriage Hill Farm now owns two steam engines. The Carriage Hill Historic Steam Engine volunteer group maintains and operates both engines for use in demonstrating seasonal farm operations. Each steamer has completed classroom and hands-on instruction, including extensive written tests.

Steam Engine History

By 1870 the horse was being challenged by a new entry into the field of farm power. Portable engines with their attendant smoke, sparks and escaping steam were ushering a new epoch into American agriculture. Steam power became an important part of farm life. Tasks that had once been done completely by hand, such as threshing wheat, could be accomplished faster and with fewer workers with the use of steam power. By the late 1800s, steam, which had been used on the farm since mid-century, was an accepted part of farm life.

There were three common types of steam power in farm use; the portable steam engine which was hauled to the worksite by horses and could not change location under its power; the stationary steam engine which was always located in one place; and the steam traction

engine which could move under its power and entered the scene during the 1880s. Farm steam engines did these typical types of jobs:

- Jobs of powering machinery by running a belt from the engine's flywheel to a grinder, sheller, separator, or saw.

- Jobs requiring steam conducted through a pipe for boiling water for butchering (scalding), heating pans for cooking sorghum molasses or maple syrup, or steaming tobacco during the stripping process.

- Jobs using a belt-driven line shaft to run woodworking tools or grinders. A stationary engine was used in the 1880s at Carriage Hill Farm to operate a line shaft that powered woodworking tools in Joseph Arnold's farm woodshop.

Seasonal activities of the first two types of jobs are demonstrated throughout the year at Carriage Hill Farm and typically include: scalding hogs during butchering, grinding corn, sawing wood, operating a sorghum press, cooking sorghum molasses, and threshing grain.

Principles of Steam Power

Steam engines are external combustion engines in which the water is heated in a boiler by heat from wood, coal, or straw to produce steam. The steam is controlled by a throttle and governor and is piped to the cylinder where it powers a piston and piston rod. The piston rod rotates the flywheel which provides the source of power for most mechanical uses. Live steam can also be piped directly from the boiler for direct heat purposes.

Carriage Hill Farm's Engines

Carriage Hill Farm owns the "Empire" a portable steam engine producing 6 horsepower. The engine is wood powered and operates at 80 pounds (per square inch) of steam pressure. The Empire was built in 1896 by the Hagerstown Steam Engine and Machine Co., of Hagerstown, Maryland, and is the only surviving operable portable steam engine from this company. It is very similar to the portable steam engine built in Dayton by the Brownell C. which operated at Carriage Hill Farm from 1867 to 1908 when it was sold at public sale. This Brownell engine was reported to have been the first one owned by a Wayne Township farmer.

Carriage Hill Farm also owns the "Peerless" a steam traction engine producing 50 horsepower. The engine is wood or coal-powered and operates at 100 pounds (per square inch) of steam pressure. The Peerless was built in 1917 in Waynesboro, Pennsylvania. The Peerless is a fine example of the larger farm steam engine that was powerful enough to handle every farm job that required power. Engines and their crews often moved from farm to farm as the harvest progressed, and at each farm, the neighbors would help to gather and thresh the grain.

Based on an original brochure by John Stibravy and Wheels of Farm Progress by Marvin McKinley.

FARMHAND INTERPRETIVE INFORMATION

The farm operation at Carriage Hill seeks to re-create 1880s agriculture as accurately as possible. Fieldwork is done using 19th-century implements and techniques. On scheduled weekends, special programs highlight certain tasks or processes. The volunteer farm hands participate in special programs by providing labor and by interpreting or explaining the historical significance of activities to the visitors. Agricultural special programs include corn shelling, grinding, hog butchering, corn planting, haymaking, threshing, ice cutting, and many more.

The work goes on daily throughout the year, however, and farm hands help perform and interpret many other tasks. They clean pens, spread manure, load hay, shock grain, milk cows, repair equipment, husk corn, and provide interpretive hayrides. These are just some of the chores.

The volunteer farm hands are a vital link between our visitors and the past. All the agricultural activities are geared toward educating our visitors and increasing their awareness of 19th-century rural life by bringing it alive.

FARM CROPS

The most important item to any farmer would be their crops. Crops were grown for sustaining the farm and your animals, as well as for bringing in extra income. There were a wide variety of crops growing during the time period. The following is a listing of crops grown by the Arnold Family.

Corn: Both field and sweet varieties: There are many sources for heirloom corn out there today. As far as documentation goes, we do not know exactly what varieties were grown at Carriage Hill. However, we do know what types of field corn were common in 1880s Ohio. Thus, we can grow what was common at the time. Several of these varieties are still available.

Reids Yellow Dent: Probably the most prolific variety grown throughout Ohio and the Midwest in the mid to late 1880s. Very popular medium yellow dent corn. Currently being grown and saved. This variety was used for both feed and meal.

Bloody Butcher: Popular mixed dent corn of the 1880s. Dates to at least the 1860s. Originated in Virginia but was found in Ohio in the 1880s. Good for flour, cereal, or roasting ears. Currently being grown and saved.

Oats: Banner and Welcome varieties: Oats are a species of cereal grain grown for its seed, which is known by the same name (usually in the plural, unlike other grains). While oats are suitable for human consumption as oatmeal and rolled oats, one of the most common uses is as livestock feed. Oats make up a large part of the diet of horses and are regularly fed to cattle as well. Oats are also used in some brands of dog and chicken feed.

Wheat: Michigan Amber: Wheat is grass, originally from the Fertile Crescent region of the Near East, but now cultivated worldwide. In 2007 world production of wheat was 607 million tons, making it the third most-produced cereal after maize (784 million tons) and rice (651 million tons). Globally, wheat is the leading source of vegetable protein in human food, having higher protein content than either maize (corn) or rice, the other major cereals. Wheat grain is a staple food used to make flour for leavened, flat, and steamed bread, biscuits, cookies, cakes, breakfast cereal, pasta, noodles, couscous, and for fermentation to make beer, other alcoholic beverages, or biofuel.
Wheat is planted to a limited extent as a forage crop for livestock, and its straw can be used as a construction material for roofing thatch. The husk of the grain, separated when milling white flour, is bran Wheat germ is the embryo portion of the wheat kernel. It is a concentrated

source of vitamins, minerals, and protein, and is sustained by the larger, starch storage region of the kernel—the endosperm.

Barley: Barley is a cereal grain derived from the annual grass Hordeum vulgare. Barley has many uses. It serves as a major animal fodder, as a base malt for beer and certain distilled beverages, and as a component of various health foods. It is used in soups and stews, and in barley bread of various cultures, from Scotland to Africa. In a 2007 ranking of cereal crops in the world, barley was fourth both in terms of quantity produced (136 million tons) and in area of cultivation.

Rye: Rye is grass grown extensively as a grain and as a forage crop. It is a member of the wheat tribe and is closely related to barley and wheat. Rye grain is used for flour, rye bread, rye beer, some whiskies, some vodkas, and animal fodder. It can also be eaten whole, either as boiled rye berries or by being rolled, like rolled oats. Rye is a cereal grain and should not be confused with ryegrass, which is used for lawns, pasture, and hay for livestock.

Sorghum: Sorghum is a genus of plants in the grass family. Most species are native to Australia, with some extending to Africa, Asia, Mesoamerica, and certain islands in the Indian and Pacific Oceans. One species is grown for grain, while many others are used as fodder plants, either intentionally cultivated or allowed to grow naturally, in pasture lands. The plants are cultivated in warm climates worldwide and naturalized in many places. Sorghum is in the subfamily Panicoideae and the tribe Andropogoneae (the tribe of big bluestem and sugarcane). Traditionally sorghum was grown on the farm as a sweetener. The juice would be pressed from the stalks and boiled down into molasses.

Tobacco: Tobacco is a product prepared from the leaves of the tobacco plant by curing them. The plant is part of the genus *Nicotiana* and the Solanaceae (nightshade) family. While more than 70 species of tobacco are known, the chief commercial crop is *N. tabacum*. The more potent variant *Rustica* is also used around the world. Tobacco contains the alkaloid nicotine, which is a stimulant. Dried tobacco leaves are mainly used for smoking in cigarettes, cigars, pipe tobacco, and flavored shisha tobacco. They can be also consumed as snuff, chewing tobacco, and dipping tobacco. Tobacco was viewed as a cash crop in the 1880s and could produce quite a bit of money. Cash crops were those that tended to bring in a higher

profit than others. Tobacco adapts well to poor soil types and could be produced in small plots.

Pumpkins: Pumpkins, like other squash, are thought to have originated in North America. The oldest evidence, pumpkin-related seeds dating between 7000 and 5500 BC, was found in Mexico. Since some squash shares the same botanical classifications as pumpkins, the names are frequently used interchangeably. One often-used botanical classification relies on the characteristics of the stems: pumpkin stems are more rigid, prickly, and angular (with an approximate five-degree angle) than squash stems, which are generally softer, more rounded, and more flared were joined to the fruit.

Hay: Hay is grass, legumes, or other herbaceous plants that have been cut, dried, and stored for use as animal fodder, particularly for grazing animals such as cattle, horses, goats, and sheep. Hay is also fed to smaller animals such as rabbits and guinea pigs. Pigs may be fed hay, but they do not digest it as efficiently as more fully herbivorous animals. Hay can be used as animal fodder when or where there is not enough pasture or rangeland on which to graze an animal, when grazing is unavailable due to weather (such as during the winter), or when lush pasture by itself is too rich for the health of the animal. It is also fed during times when an animal is unable to access pasture, such as when animals are kept in a stable or barn.

Other small crops: Potatoes, sweet potatoes, peanuts: In addition to the typical field crops, small crops of vegetables such as potatoes and sweet potatoes were grown. They could be sold at the market or used for feed for the animals. In the case of the Arnolds, it was common to feed the hogs steamed potatoes. Lastly, one peculiar item that was grown was peanuts. Peanuts would have been a carry-over from their living in Virginia. They are not common in Ohio and are not the easiest crop to grow.

FARM ANIMALS

For many, the most exciting part of the farm is seeing the animals. Livestock provided power, food, fiber, and fertilizer. The type and number of animals on the farm today are consistent with the Arnold family's report to the 1880 Agricultural Census. The breeds are those that were common to the area at that time. Some breeds were chosen based on interviews with family members.

Cattle

Cattle are raised on farms for two basic reasons: milk and meat. Some breeds are better suited for milk production (Holsteins, Jerseys, and Guernseys) and others for meat production (Herefords and Charlais). While most people know that cows give milk, few think about the fact that milk is primarily produced to feed their calves and that man takes advantage of that milk production for his consumption. A cow can give from three to eight gallons of milk each day. Cattle used for meat production are butchered at about 1000 pounds, which takes about 18 to 20 months of growth. A cow's normal life span is approximately fifteen years.

Jersey cows were kept at Carriage Hill Farm a century ago and are raised on the farm today. Jerseys give milk that has a high butterfat content which was used to make the butter that was sold in Dayton each week.

Swine

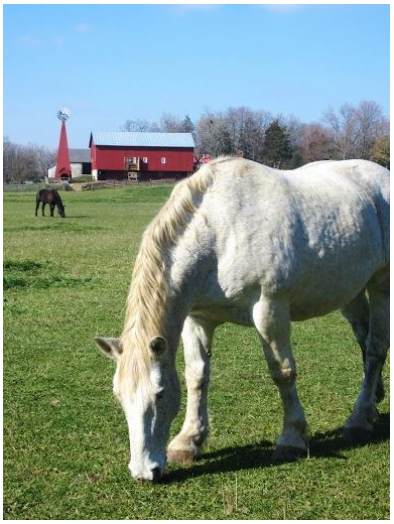
The breed of swine at Carriage Hill Farm is from Poland China. This breed was developed in southwestern Ohio during the 1870s. The swine were raised to be very fat because the lard was a usable and marketable commodity. Pigs weigh two pounds at birth and gain about 1.25 pounds a day. They are ready for market in about seven months. Their life span is 7 years.

Sheep

Sheep are raised on farms for two basic reasons - fleece (wool) and meat. Sheep are sheared in the spring and the fleece weighs eight to twelve pounds. Sheep used for meat production are butchered at about 100 pounds. A sheep's normal life span is approximately seven years.

Some sheep, like the Merino breed at Carriage Hill Farm, are polyestrous which means they can birth twice each year. This gives an obvious advantage of raising more lambs each year. Merino sheep were the most common breed in this region during the 1880s and were

primarily bred for wool production with meat as a byproduct. Their wrinkly skin also means that they produce a higher amount of wool each year.



Horses

At Carriage Hill the draft horses are used to pull the bobsled, hay wagons, binder, and other farm equipment. Draft horses weigh approximately 1600 pounds. The most often seen draft horse breed in the 1880s was the Percheron, which is also the breed used at Carriage Hill. This breed ranges in color from solid black to white, and dappled gray. As the Percheron ages, the gray becomes more predominant and changes to almost white.

Chickens

There were many different types of chickens in the 1880s. However, the most common, and one of the oldest breeds, was the Barred Plymouth Rock. At Carriage Hill we usually maintain around a dozen barred Plymouth rocks at any given time. They were noted as being good laying birds as well as good meat birds. They were extremely popular due to their overall diversity. However, this breed isn't as popular today for these same reasons. In modern poultry production, one or the other trait is what is looked for. For this reason, barred Plymouth rocks went out of favor in the 1940s and were replaced by the white Plymouth rock.

SEASONAL FARM WORK AND CHORES

The following selection of chores and farm work was taken from the 1853 diary of Henry H. Arnold, a Miami Valley Farmer. It should provide you with a basic understanding of some of the typical farm chores done during each season. It is also broken-down month to month to further illustrate seasonal work.

Winter:

January: butchering hogs + beef, hauled crops to town, hauled cordwood, worked at sawmill, cut shingle wood, went to market.

February: repaired smokehouse, cleaned up harness and harness room, went to the mill, split firewood, visited with neighbors and church members, tapped my sugar trees went to market.

March: cut fodder, boiled down sugar water for syrup, plowed for corn and oats, made fence and mended fence sowed oats and went to market.

Spring:

April: harrowed and plowed for flax, hauled lumber, sowed flax, started sweet potatoes in a hotbed, hauled crops to market, and worked at a sawmill.

May: planted corn, sowed oats, planted potatoes, made workbench, visited with neighbors and church members, went to market, planted sweet potatoes, sheared the sheep.

June: painted carriage, mowed clover, went to market, raked hay, cut wheat.

Summer:

July: cut timothy, cleaned sweet potatoes, hauled in wheat, mowed hay, put up hay, plowed corn, cut flax, cut oats, threshed flax and went to market.

August: worked on drilling wheat, worked in the garden, plowed for rye, plowed for wheat, pulled stumps, threshed wheat, and went to market.

September: drilled wheat, dug sweet potatoes, helped do wash, threshed wheat, and oats, cleaned clover seed picked apples and went to market.

Fall:

October: made cider, boiled apple butter, cleaned oats, and wheat seed threshed wheat, dug potatoes, husked corn, picked apples for winter and went to market.

November: visited with neighbors and church members, went to market, killed a calf and butchered it, husked corn, hauled corn in, and worked on the barn.

December: husked corn, cut and hauled wood, took clover seed to market, threshed wheat killed and butchered beef.

WHAT WAS IT LIKE LIVING ON A FARM?

As stated earlier, farm life was never easy. Days were tedious, monotonous, and filled with different chores and tasks. To best explain period farm life, we will look at some original diary accounts from a period farmer and a farm wife:
The following diary is from Henry H. Arnold of Carriage Hill in 1853:

Thursday, April 14, 1853; Henry H. Arnold
I sawed plastering lath & loaded a load of hay. & It was a pleasant day

Friday, April 15, 1853; Henry H. Arnold
I hauled a load of hay to Dayton 2990 lbs. & sold it for $19.95. & It was a pleasant day.

Saturday, April 16, 1853; Henry H. Arnold
I hauled a load of hay to Dayton 3352 lbs. & sold it for $1670. & It was a rainy day.

Sunday, April 17, 1853; Henry H. Arnold
I was at Henry Rubsa meeting. I& went with sister Elizabeth to Fairfield to the doctor. & It was a fine day.

Monday, April 18, 1853; Henry H. Arnold
I hauled a load of hay to Dayton 2206 pounds & sold it for $11.28 & it was very warm.

Tuesday, April 19, 1853; Henry H. Arnold
I & Magdalena went to Dayton to market & it was a very rainy day.

Wednesday, April 20, 1853; Henry H. Arnold
I sawed on the sawmill & it was a windy day.

Thursday, April 21, 1853; Henry H. Arnold

I hauled cooper stuff from brant. & It was a warm day.

Friday, April 22, 1853; Henry H. Arnold
I harrowed corn ground & it was a very windy day.

Saturday, April 23, 1853; Henry H. Arnold
I harrowed corn ground in the F. & in the A. I went to Jonathan Brubakers on a visit. & Magdalena was at church meeting at the meeting house. & It was rainy in the afternoon.

As you can see by the diary accounts, farmers did a wide variety of chores throughout the day, on top of their typical everyday chores like milking, feeding, and farming. Many farmers were quite skilled, and some even did do other work on the side, such as blacksmithing, woodworking, etc. Another note to make about these accounts is the common reference to the weather. A farmer was always checking on the weather and making note of it for next year.

When reading through the diaries, you will see that life was simpler but not easier than today. It was simpler because you didn't have all various distractions wanting our attention that we have today. Life was not easier because it was filled with hard, sometimes very repetitive, work. The livestock needed tending to every day regardless of weather or other circumstances such as illness, holidays, etc. In addition, travel was not easy. A farm team and wagon would average about 3 mph and roads were usually terrible especially in wet weather. Health care was almost primitive by today's standards. Infant mortality was quite high, and some diseases were rampant. Farm families tended to go to bed early, as lack of lighting and the need to arise at an early hour was necessary. We tend to romanticize "the good old days" without remembering the hardships. However, at Carriage Hill we can provide more insight into the daily lives of these farm families that helped forge our nation.

The Arnold Family ca.1886