A VIEW OF FOLK POTTERY'S MUDDY PAST AS SEEN THROUGH CLAY: AN ANALYSIS ON A SAMPLE OF CERAMICS FOUND AT THE HISTORIC CALDWELL POTTERY FACTORY SITE IN ARROW ROCK, MISSOURI

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A View of Folk Pottery's Muddy Past as Seen through Clay:

An Analysis on a Sample of Ceramics found at the Historic Caldwell Pottery Factory Site in Arrow Rock, Missouri.

By

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Abstract

During excavations in 1996, Dr. Tim Baumann, a professor at the University of Missouri – St. Louis, uncovered a historic nineteenth-century pottery factory under the Brown Masonic Lodge in Arrow Rock, Missouri. Following summertime excavations of the site between 1996 and 2001, a sub-floor of a bottleneck kiln was exposed, along with fire boxes, waster dumps, the foundation of a workshop, storage shed, and features used for the storage of glaze, and thousands of ceramic artefacts. The artefacts, features and structures found were used primarily between the mid 1800s and the late 1870s. Historical documents including industrial censuses suggest that the Arrow Rock Pottery was a substantial industry with employed people producing primarily functional utilitarian pottery. The assemblage of artefacts collected from the site was dominated by ceramic sherds that can be divided into two categories: functional vessels used domestically for preparation or food storage and the kiln furniture or utensils used in the bottleneck kiln to support the vessels during the firing procedure.

This thesis explores a sample of ceramic artefacts found at the Caldwell Pottery factory. The purpose of this study is to understand what is "folk pottery" in the southern states of the United States of America? Who made such ceramic wares? What does it look like, judging by archaeological, historic and ethnographic information? The analysis of the artefacts not only quantified the frequency of forms but allowed them to be classified into two categories, vessels and kiln implements. Reconstructions of these goods are presented as an example of the type of ceramics produced at the Caldwell pottery factory. This research explores history in an attempt to understand how folk

pottery, which was once a fixture in American pantries, was replaced by glassware as both the consumer and business changed in America as it progressed into the nineteenth century. Through the combination of a literature, ethnoarchaeological research as an apprentice folk potter, and the analysis of 700 ceramic artefacts the objectives of the research was achieved. This typological analysis is the first of its kind in the State of Missouri.

Acknowledgements

Time is presented to all of us, but insists on patience and balance. My enthusiasm for archaeology resonates in all aspects of my life and this thesis is the result of nurturing and respecting that I am not alone, that time passes quickly and my actions affect others. In saying that, I must take a moment to thank all the people who supported or contributed to the development and completion of this thesis.

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Chapter I

The Introduction

The ceramics found at the Caldwell Pottery Factory were produced in the nineteenth century in Arrow Rock, Missouri. The pots signify a time in American history before industrialization swept through the country, bringing with it new technologies, materials, ideas and a cultural reorganization of communities that previously existed as traditional societies with an emphasis on people and their roles within their communities. It was the process of modernization that created a shift in folk pottery production, transforming it from an essential product that was used by all people regardless of status to its current place within the world of art. This movement helped to wipe out not only the folk potter, but also other traditional skilled craftsman that worked collaboratively with the potter.

The changes seen in the folk pottery found at the Caldwell site in both shape and form is consistent with a swing in consumer demands due to modernization. Caldwell's ceramic products symbolize a period of time in America's history that communities were shifting from traditional to modern values. The predictability of the ceramics found at the Caldwell pottery site is reflected in the ceramic forms themselves and their roles in America's new and developing contemporary society. Although Caldwell's pottery factory could not survive the impact of industrialization and the ceramics produced at the site are no longer being made, some of its earliest traditions are still alive in contemporary folk pottery towns. According to modernization and world-system theory

the ceramics and the traditions surrounding folk pottery production should have disappeared. This makes folk pottery an anomaly. The immediate environmental changes experienced within the town of Arrow Rock by way of a population decrease, a physical swing in the Missouri River, and the bypass of the railroad were additional factors that affected the permanence of the Caldwell Pottery Factory and the ceramics produced there.

The ceramics and traditions associated with the ceramic assemblage from the Caldwell Pottery Factory archaeological site are not uncommon. Arrow Rock's historic pottery factory shares a lineage with many historic pottery towns in southern mid-western America. The following chapters will consider the archaeological evidence of salt glazed stoneware folk pottery as it pertains to the transition from a product with mass appeal that was found in every part of society to one that is found in specialty stores, art galleries and artistic communities. Folk made ceramics are an indicator of a national cultural change in America.

Chapter two discusses the cultural and environmental setting of Arrow Rock, during a time when it was experiencing great change. This chapter provides an historical context for the Caldwell Pottery Factory, the ceramics produced there and the people who used the pots. It is the lifestyle of the residents of Arrow Rock that can be seen in the forms that were recovered at the site. Research on folk pottery prior to this has focused on different states or towns within America and so there is no current research available for Missouri at this time. Many researchers have found similar vessels and kiln sites but to date none have been excavated anywhere else in the State of Missouri.

Caldwell's Pottery Factory occurred as a result of the lessons gathered through the generations of potters that the Caldwell family produced. Newton Caldwell left his family and fathers cottage industry in Callaway County, Missouri where he owned, manufactured and sold utilitarian folk forms in Arrow Rock. Chapter three pertains directly to the research and methods used to answer the questions proposed in this thesis that were developed from and influenced by the initial work conducted by Dr. Baumann. The multi-disciplinary approach of combining historic analysis, using both primary and secondary sources, with ethnoarchaeological experiences with generational folk potters Sid and Matthew Luck, and the analysis of Caldwell ceramics provided a clear and complete understanding of what folk pottery was and how it was made and used in the nineteenth century.

The purpose of the literature review presented in Chapter four aims to prove that the defining characteristics, tools, methods and surrounding environment that are required for an artefact to be defined as American folk pottery were present in the tactile remnants of the ceramic artefacts produced at the Caldwell Pottery Factory. It is only through confirmation of this historic analysis that a determination of the artefacts produced by Caldwell was similar to other generational folk potters during the nineteenth century. These specific definitions helped to place Caldwell's pots upon the same historic shelf that has become a symbol of America's beginnings. It is the distinctions and definitions of folk pottery that contributed to its success nationally dictated by market demand that led to is specialized forms. These are the same characteristics that also contributed to the

shift in the use of ceramics and the demise of many small scale folk pottery enterprises throughout America as modernization progressed and replaced hand built forms.

Chapter five provides the results of the analysis of a sample of ceramics found at the Caldwell archaeological site, as well as the first functional typology that includes statistical evidence in an archaeological and interpretive context. This typology exhibits an example of each form identified in the sample of pots and kiln implements. The pots were all thrown on a wheel and identified by form. The kiln implements have been broken up into two categories: furniture and utensils. Each type of kiln furniture has also been divided according to how it was constructed. This typology serves to identify the ceramics produced, their function, the tools or methods used to produce them, and the division in the roles of pottery makers.

Chapter six looks at some of the reasons why folk pots were no longer produced at the Caldwell pottery factory when it shut down sometime after 1863 and before 1870 in Arrow Rock. By understanding the impact that progress has on people who employ hand skills we can begin to identify some of the factors that led to the demise of Arrow Rock's pottery and folk pottery in general. This chapter explores the difficulties the folk potter faced when the speed of America's progress quickly outmatched that of the potters wheel. Ceramics were meant to fill a need in culture and when they were created they were not meant to tell the story of American folk pottery. Nevertheless, history and archaeology reveals that this story is present in each sherd. Historic archaeology embraces the human story as it pertains to material culture.

The conclusion of this research found in Chapter seven is a summary of all the data presented in this thesis from an ethno-historical perspective. This thesis focuses on the product that was produced at the Arrow Rock Pottery, and does not include the analysis of the processes involved with the excavation, the soils or clays found within the proximity or geography of the site. However, this research exposes potential areas of exploration in the design and use of kiln implements. The identification of form and function within the typology will contribute to Dr. Baumann's study of Missouri's role and America's contribution to its own unique pottery heritage.

The ceramics found in Arrow Rock are significant for they embody a time in America's history that was in the midst of a transition in values and peoples roles were changing within their community. In the early nineteenth century, everyone played a role, and as the century progressed, so did modernization. Centers, big or small, all over America, embraced industrialization and people shifted their pace by placing more emphasis on their own desires generating a belief that America was "a land of opportunity." Ceramics alone did not make this change, but through archaeological investigation, historic research and ethnoarchaeological study it can be confirmed that folk pottery can be used as a chronological marker of this shift in cultural values in America's history.

Chapter II

Environmental and Cultural Background

2.1 Introduction

Arrow Rock in the last 180 years has changed from a once flourishing town to a village, though one that has received national attention as a site with significant historic importance. Visitors to Arrow Rock today are encouraged to explore the town's carefully protected nineteenth century history. It is difficult to imagine how such a prosperous place could so quickly become a shadow of what it was. Arrow Rock's history has been recorded, its environment researched and blocks of it have undergone archaeological analysis (Baumann 2001; Bray 1961; Dickey 2004; van Ravenswaay 1959, 1977). The town was also used as the location for the 1973 Hollywood film *Tom Sawyer* (Apjac International 1973). Research projects over the years have looked at Arrow Rock as a solitary unit (Prouse 1981), while some have included it as part of their regional history (van Ravenswaay 1959; Dickey 2004), and others have initiated new research on African American identity (Baumann 1998; 2001). The historic population of Arrow Rock ranged from the ordinary working class who provided day to day for their families, enslaved peoples bound as property usually of affluent white people, to politicians seeking to manifest grand ideas for a better municipality within America. There were those extraordinary few, namely George Caleb Bingham and Dr. John Sappington who unintentionally placed Arrow Rock on the roster of historically important places, through

their works of art depicting American life in oil on canvas or through the widespread distribution of a popular the miracle drug quinine for the treatment of malaria.

It is how Arrow Rock functioned within the margins of America's historic time period that defines the way that Caldwell's pottery was used to meet the daily needs of people who lived in and around the region of Arrow Rock. The style, form and use of Caldwell's pottery are directly linked to both the cultural and physical environment it was a part of. The kinds of ceramics used were determined by the materials and technology available in a town that was too far away from any major city and relied on water transportation amidst an agriculturally based culture. This chapter explores the cultural and physical environment around the Caldwell pottery factory and the ceramics it produced, in order to understand better its form and function in the nineteenth century.

2.2 Missouri's Physical Environment

The town of Arrow Rock is located in Saline County in the heart of Missouri on the chert filled western cliffs of the Missouri River (Figure 1). The state of Missouri is itself located practically in the centre of the United States and conveniently situated within the nations' great Central River System. This system of rivers is extensive, running through approximately 8,000,000 acres of fertile lowland (McCandles 2000: 32). Missouri has plentiful raw mineral resources such as lead, coal, silex (flint), gypsum, iron ore, kaolin (clay), marble, saltpeter and zinc (McCandles 2000 : 32). The Ohio River flows westward and directly connects into the Mississippi River that flows easterly. These two water routes were ideally suited for the trade of goods, travel and commerce.

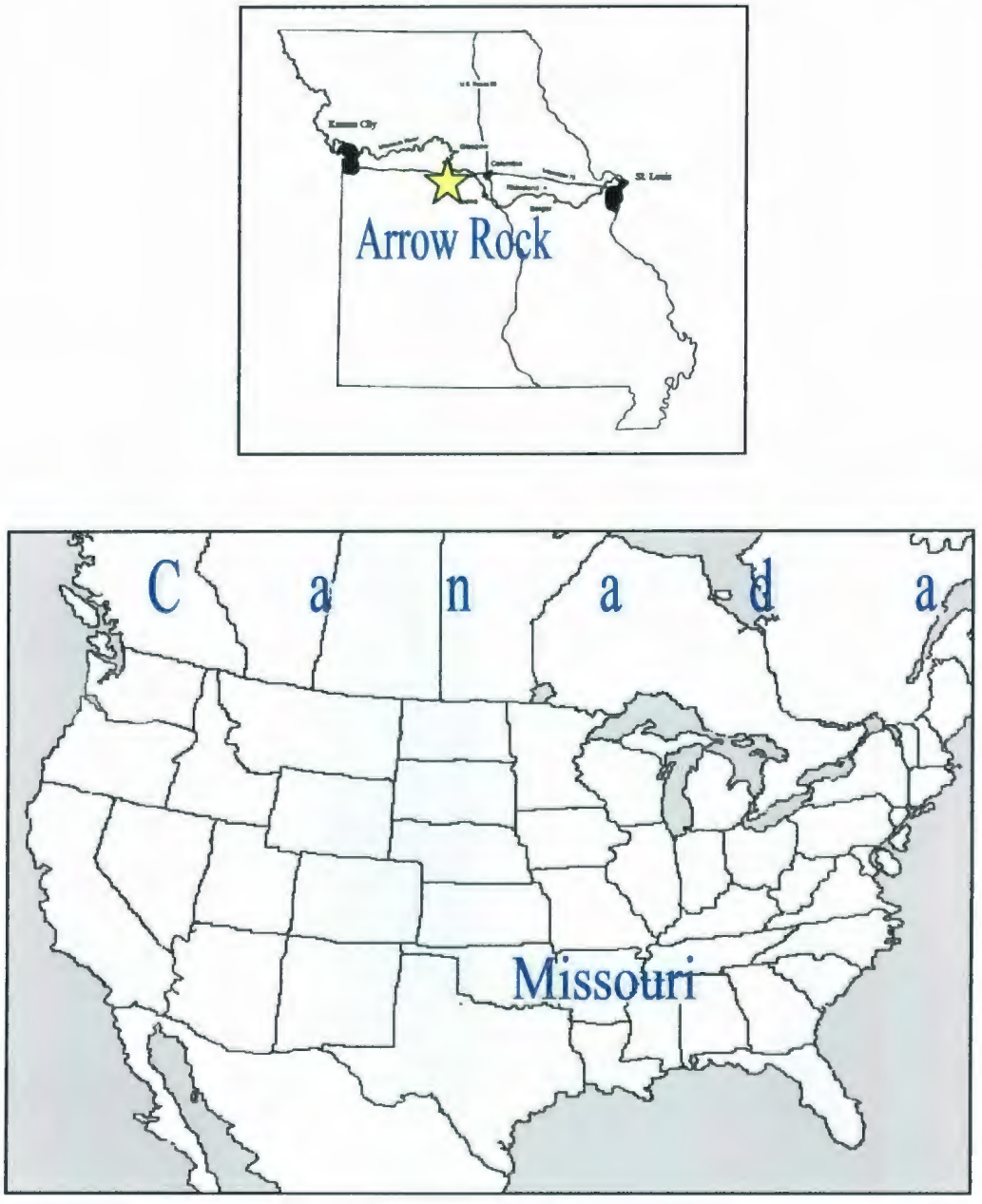


Figure 1: Location of Arrow Rock, Missouri.

Maps modified from Prouse (1981) and The Americas produced by National Geographic Society (2000).

The Missouri River, otherwise known as "The Big Muddy," flows straight through the centre of the state and was used primarily for far western trade (Dickey 2004; McCandles 2000; van Ravenswaay 1959). Smaller tributaries such as the Chariton, Osage, Gasconade and Grand Rivers served as secondary routes used to access inaccessible parts of the State.

Missouri has been described as one of the richest states in natural clay deposits and "...various types...[can be found] on the hills and upland prairies bordering the Missouri River... [encouraging] the development of potteries during the nineteenth century" (van Ravenswaay 1977; Pultz 2001). With this important resource available to folk potters combined with a climactic environment of moderate temperatures, lengthy growing seasons, plenty of rain, and an abundance of timber early potteries started to develop in the eighteenth century on or near the Mississippi River. By the early nineteenth century, kilns and pottery factories developed all along the Missouri River. Flat boats or barges transported the ceramic ware from these pottery factories into developing western territories (Ketchum 1991).

In 1820, approximately 85 per cent of Missourians reported agriculture as their major economic activity (McCandles 2000: 33). Farms came in all sizes, but it was the small, general, self-sufficient farm that was most common in Missouri during the nineteenth century. Non-agricultural activities included fur trading, lead mining, frontier merchandising, common skilled and semi-skilled craft work such as pottery, and the processing of lead, tobacco, grain, and other extractive products (McCandles 2000: 33).

The region known as the Northwest Prairies covers the land area north of the Missouri River and is home to Saline County and Arrow Rock (Baumann 2001; Chapman 1975; McCandles 2000). The physical landscape around Arrow Rock has been described as ecologically rich, home to forests crowded with giant trees, rolling prairie filled with meadows of mixed grasses and various cereals (van Ravenswaay 1959; McCandles 2000). The diversity of the natural environment inherent to Arrow Rock provided options and people could make their own way in a new environment based upon their skills, needs, and experiences. Missouri during the early and mid nineteenth century was a desirable environment for settlers and entrepreneurs.

2.3 Historic Origins of Arrow Rock

It was the large bluff filled with chert overhanging the edge of the Missouri River that became the landmark associated with the town of Arrow Rock. It was frequently noted by people who bypassed it on their journeys by boat, on foot, or on horseback. This bluff was identified by the French cartographer d'Anville and recorded on his 1732 *Carte de la Louisiane* as "*Pierre à Fleche*" meaning "Rock of Arrows" and phonetically identified in frontier jargon as "Airy Rock" (Dickey 2004; van Ravenswaay 1959: 204; Phillips 2005). The most notable observations were made by Lt. William Clark, in 1808, while on expedition to launch Fort Osage. While camping on the banks of the Missouri at the bluff, he noted in his journal, that it provided an ideal location for a fort "...and a handsome spot for a Town" (van Ravenswaay 1959: 204). Clark was

previously at this bluff in 1804, as part of the famous Lewis and Clark expedition, commissioned by President Thomas Jefferson, to map and explore the newly acquired lands of the Louisiana Purchase.

In 1811, prior to a formal town or granting of township, a landing located at "the little Arrow Rock" was a popular ferry used to transport immigrants across the river to the departure point heading west on the trail in wagons or overland trains (Baumann 2001; van Ravenswaay 1959). The ferry "...consisted of two dugout canoes, on which rests a platform, with a slight railing to prevent cattle from falling off" (van Ravenswaay 1959: 206).

Based on Clarks observations "Sibley's Fort" was built near the bluff as a government initiative to create "...an Indian factory or blockhouse and trading post in the location of Arrow Rock to replace Fort Osage in the fall of 1813" (Baumann 2001: 24). George Champlin Sibley was chosen to manage trade between Aboriginal groups and Europeans. It was shut down shortly after its construction in 1814 (Baumann 2001; van Ravenswaay 1959). Saline County was organized, in 1820, before the town itself.

2.4 Arrow Rock, a nineteenth century "Boom Town"

The iconic steamboat of the Missouri River greatly impacted the little landing at Arrow Rock transforming it into a noteworthy river port (Dickey 2004; van Ravenswaay 1959). In the 1820s, the steamboat transported agricultural goods such as hemp, grain, or livestock to market on the Missouri River (van Ravenswaay 1959: 207). Steamboats were fast and able to carry mixed loads easier and at less per pound than a flatboat or keelboat.

Over the next 50 years, the proliferation of the steamboat and system of transportation it provided greatly impacted the growth and development of Arrow Rock. The seasonality of this type of transportation system was in tune to the agricultural industry that took advantage of the vast natural resources that were inherent to the region around Arrow Rock. As the merchant system developed due to the westward expansion of the United States along the Santa Fe Trail a need for support industries such as blacksmithing, taverns, potteries and medicine shops developed (Dickey 2004).

By 1829, Arrow Rock was thriving and a plan was developed to exploit its success. On June 10, 1829 fifty acres of land was donated by Burton Lawless and his wife, Nancy, and John Bingham and his wife, Mary for the town to be built upon. Lawless also gave the town access to the water springs on his farm that bordered the new town site (van Ravenswaay 1959). M. M. Marmaduke, a county surveyor who made a small fortune on the Santa Fe Trail, laid out the town in "...a traditional grid pattern of regular blocks and parallel streets" (van Ravenswaay 1959: 208) (Figure 2). Lots started to sell on July 29, 1829. Although the township created here was originally called New Philadelphia the residents fought for its true identity and on February 8, 1833 the General Assembly of Missouri acknowledged the town's history and declared that "the town...called...Philadelphia, in the county of Saline, on the Missouri river, shall...be called Arrow Rock" (Dickey 2004: 73; van Ravenswaay 1959).

Arrow Rock's peak population was 1000 people in the mid nineteenth century and included characters such as riverboat men, wagon teamsters, wharf and warehouse

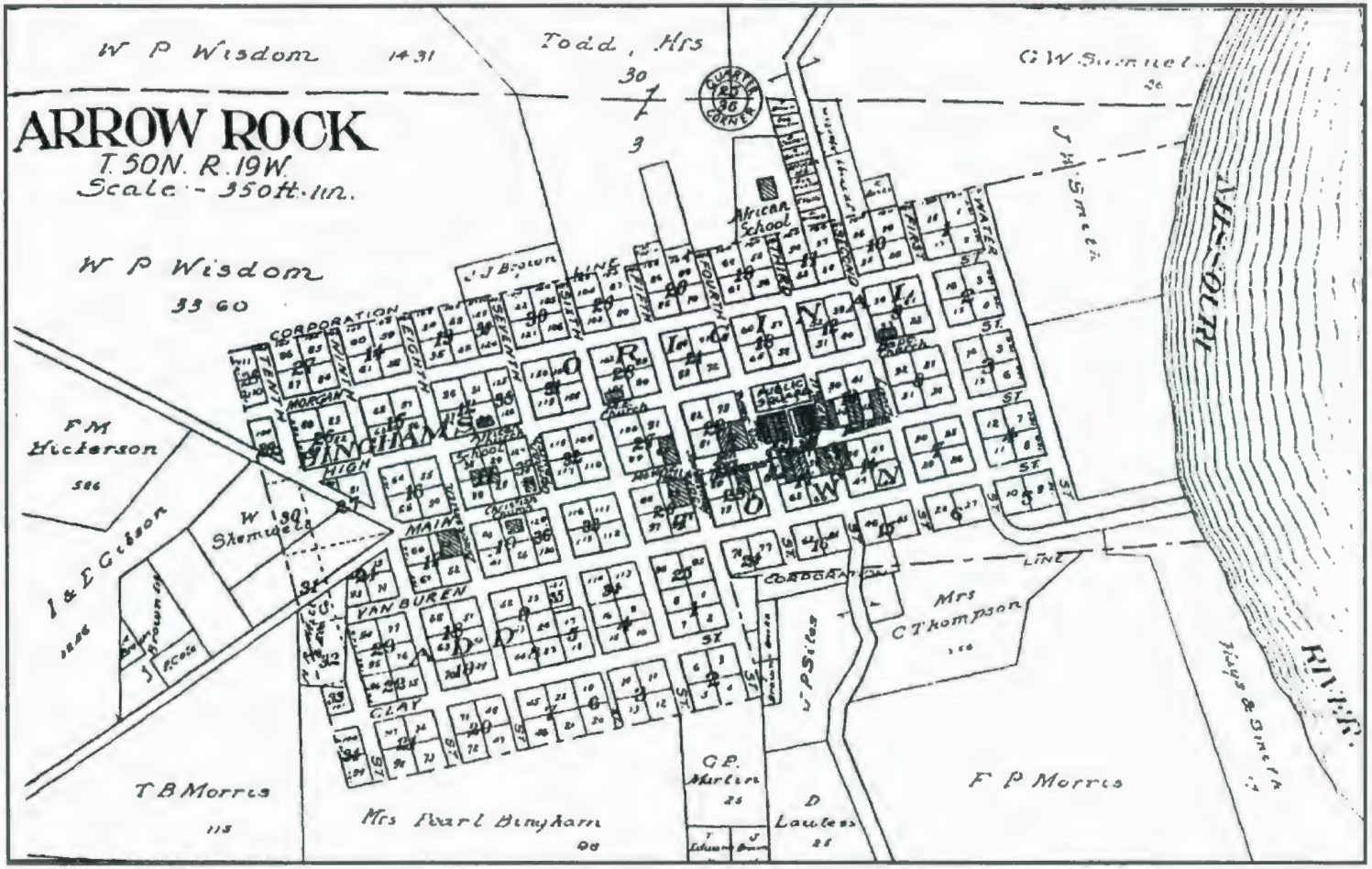


Figure 2: 1916 Map of Arrow Rock, Missouri (Baumann 2001: 29).

labourers, artists (both literary and visual), politicians, doctors and inventors (Baumann 2001; Dickey 2004).

We can speculate about others based on the town's physical connection to the Santa Fe Trail and the transient population that it would had to have generated. The Santa Fe Trail started in Franklin, Missouri in Howard County and ran through Arrow Rock where it led to Santa Fe, New Mexico (Figure 3). It is difficult to know the exact impact that a transient population had on business in Arrow Rock and their success. However, it is safe to assume that the business owners would be making some of their decisions based on this segment of the population as well as the permanent residents of the town. Business owners provided goods and supplies such as hardware, food, firearms, and alcohol to aid travelers that could be used to trade or sustain themselves over the long and arduous trek across the trail. Others were in the business of providing a place for exhausted travelers to rest or relax and the Huston Tavern provided enticing ways to spend their newly acquired Spanish silver. Merchants prospered, men rewarded by the trail drank and gambled their silver away, and the local government taxed all the services it provided (Dickey 2004; Peattie 1946; Phillips 2005). The underlying sense of prosperity, excitement combined with the promise of a new adventure or beginning embodies the spirit of the people who forged towards the west when it was new.

2.5 The Echo Effect of Arrow Rock's Boom

Arrow Rock was a thriving and successful town by the 1860s, with an established economic core, a solid business sector and infrastructure that connected

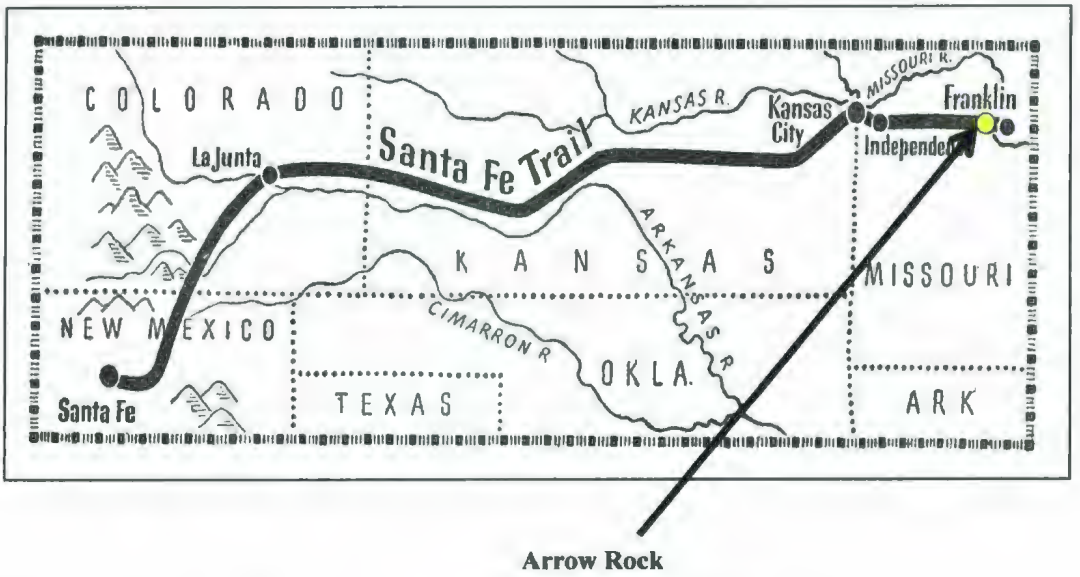


Figure 3: A Map of the Santa Fe Trail

Map modified from Peattie's (1946) article found in Reader's Digest.

Figure 4: Arrow Rock, Missouri's Business District, 1876 (Baumann 2001: 40).

Source of the map is from the Missouri Publishing Co., 1876, Atlas Map of Saline County, Missouri.

people to the goods and services they required (Figure 4). The *Arrow Rock News Commerce &Comments* section of Marshall's *Weekly Democrat* dated May 13, 1859 mentioned that "in the spring of 1858, Arrow Rock had the air of a boom town" (Dickey 2004: 107 – 108). Arrow Rock had an established rhythm. But as predicable as life may have been to the residents of Arrow Rock they could not foresee a series of specific events, as well as a global cultural shift that would begin to slowly change the very nature of those relationships or the foundation that they were built upon.

Arrow Rock, like any southern town, was affected by the American Civil War (1861 – 1865). The Civil War was a conflict over slavery that divided the country into territories, North and South. The South was America's plantation district and Arrow Rock was a "pro-Southern" town (Baumann 2001: 37). The town escaped the devastation that the American Civil War left in many townships and was virtually untouched by the physical conflict but "…residents were deeply divided on the issue of slavery, and soldiers from both sides were unwelcome intruders to some" (Phillips 2005: 1-2). Baumann explains that Arrow Rock existed as a plantation economy prior to the Civil War and when it ended it "…shift[ed] from slavery to non-slave labour resulting in a shift from cash crops to more grain crops and livestock production. The Civil War severely affected Arrow Rock's economy and stopped the town's growth" (Baumann 2001: 38).

The post-war emergence of the Pacific Line railroad greatly diminished the role or significance of the steamboat and the Missouri River as a transportation system. This new and modern way to transport goods and people across Western America replaced steamboats changing the landscape of Arrow Rock. Arrow Rock's dependency on the Missouri River on its sole means of transportation was costly to the town. Recognizing

their reliance on the Big Muddy they tried to influence the railway to come through their district. They offered the community subscriptions of railroad bonds to help fund the rail line. "For the next year and a half, there were innumerable committee meetings, meetings with railroad officials, and even court hearings in an attempt to resolve the Arrow Rock railroad proposal" (Dickey 2004: 245). The railway did not accept Arrow Rock's bid to attract the railroad and because the town was not able to make the changes necessary to their infrastructure they remained dependant upon the Missouri River.

By 1873, the population of Arrow Rock had decreased to 600 people (Baumann 2001; Dickey 2004; van Ravenswaay 1959). One of the most devastating fires in Central Missouri's history destroyed a half a block of businesses on Main Street, an entire row of buildings on 4th Street, and a number of residences (van Ravenswaay 1959; Baumann 2001; Dickey 2004). Meanwhile, as the town was working to adapt to all of these forced changes the previously reliable Big Muddy began to naturally and slowly meander away from the town. The start of the twentieth century saw the Missouri River redirect its waters approximately one mile away (Dickey 2004).

2.6 Today's Arrow Rock: It's Current Identity

Arrow Rock's past and significance in American culture could have been lost. Despite the pace of progress Arrow Rock was able to capture and preserve its story. Its story is told through the artefacts, structures and features that remain as evidence of its vibrant and influential past. The physical evidence coupled with historical data provides context to the relevance of Arrow Rock to America's ceramic industry.

Arrow Rock's degree of commitment to conserving the historic past that includes both architecture and infrastructure has made the town a model of preservation, with a reputation of being "a pioneer in the preservation of Missouri's heritage" (Baumann 2001). The population is small, but Arrow Rock's desire to be recognized as having historic value has earned the town the title of State Historic Site. Baumann (2001) has explained that the first group of concerned people was the *Daughters of the American Revolution* in association with the *National Old Trails Road Association* who worked to preserve the Huston Tavern in 1912. Direction of the project shifted to the State of Missouri, after it purchased the tavern in 1923. During the same year the Huston Tavern became the first state-owned historic building to be re-established. The building was originally constructed in 1834 and provided a general store, tavern and hotel to residents and travelers to and from Arrow Rock. In the 1930s, the Work Projects Administration helped to create the Arrow Rock State Historic Site (Prouse 1981). This state park encompasses 100 acres and includes the Huston Tavern, the home of the nineteenth-century painter George Caleb Bingham, and other historic buildings. In 1959, a non-profit group called the Friends of Arrow Rock was established to work with the Arrow Rock State Historic Site to preserve and interpret the structures and history of the town. This group functioned as a "local historic preservation society" (Baumann 2001: 43). They purchased property in decay and in turn restored them from the inside out. The buildings that have been saved by this group thus far are the Christian Church, Courthouse, the IOOF Lodge Hall, the Sites gunsmith shop and home, two business buildings on Main Street, the Brown Chapel and the Brown Lodge (Baumann 2001: 43). Today the park contains all of these early sites, as well as, a

campsite, hiking trails and an interpretive centre dedicated to the study of central Missouri's cultural history (Baumann 2001). The town has been challenged by modernity but has been able to coexist with it by achieving recognition as a cultural treasure, with a legacy in need of protection.

2.7 The Friends of Arrow Rock

Archaeologists have worked with the *Friends of Arrow Rock* on a variety of projects to identify, research, excavate, and analyze artefacts, features or structures found on many sites throughout the town. Timothy E. Baumann carried out his doctoral research on Arrow Rock, focusing on the town's African American heritage. He in turn has become an advocate for the town and has worked side by side with the Friends of Arrow Rock to excavate, preserve and publish active research on the town. In 1984, the Friends group won a State Humanities Grant to fund museums, programs with live tours, projects aimed at educating the public with docents or craft persons wearing period clothing. Finally, the Missouri Department of Parks and Recreation spent a million dollars to provide Arrow Rock with a visitor centre and museum that opened to the public in 1991.

2.8 The History of Block #30, Arrow Rock

Baumann (2001) has identified three major historical periods for Block #30 (Figure 5). The first period begins in 1836, with the McGuffin family, who emigrated from Virginia and settled in Arrow Rock (Baumann 2001). Charles McGuffin acquired Block #30 where he built a home for his wife, Amanda and their four children. After the death of McGuffin in 1854, the family failed to pay on a loan and therefore lost Block

death of McGuffin in 1854, the family failed to pay on a loan and therefore lost Block #30 at auction, to the family's creditors. Newton G. Caldwell purchased Block #30 on March 10, 1855 and within the year he opened the Arrow Rock Pottery (Baumann 2001).

Caldwell was born into a pottery family and was trained in production by his father, Thomas (Baumann 2001). Caldwell owned and operated the Arrow Rock Pottery for eight years where he became one of many small-scale potteries producing salt-glazed stoneware utilitarian pottery in Missouri (Appendix 3). During the mid 1850s most contemporary stoneware potteries were small and non-mechanized factories located near a viable clay source and producing wares for "...local markets...owned and operated by a single master craftsman" (Mansberger 1997: 87). The physical location of these potteries was strategic, located on the outskirts of townships to best utilize distribution routes, disperse the toxic omissions produced by the kiln, and still be able to supply stoneware pottery to the local community (Walthall et. al. 1991). Stoneware crocks, churns and pitchers were either hauled out by wagons pulled by draft animals (mule, oxen, horse) along dirt roads or via flat boats or steamboats along rivers such as the Missouri or Mississippi (Burrison 1995; Guillard 1971; Mansberger 1997; van Ravenswaay 1977; Walthall et. al. 1991).

Newton G. Caldwell's skills, knowledge and abilities inherited by his family allowed him to establish the Arrow Rock Pottery that was successful for approximately 15 years (Figure 6). Raw materials such as wood, water, clay and salt available around Arrow Rock sustained the factory which produced bowls, drain pipe, jars, jugs, churns and crocks for domestic or commercial use. An industrial census for Saline County in 1860 indicates that Caldwell had $4000 invested in the business, with a stock of 200

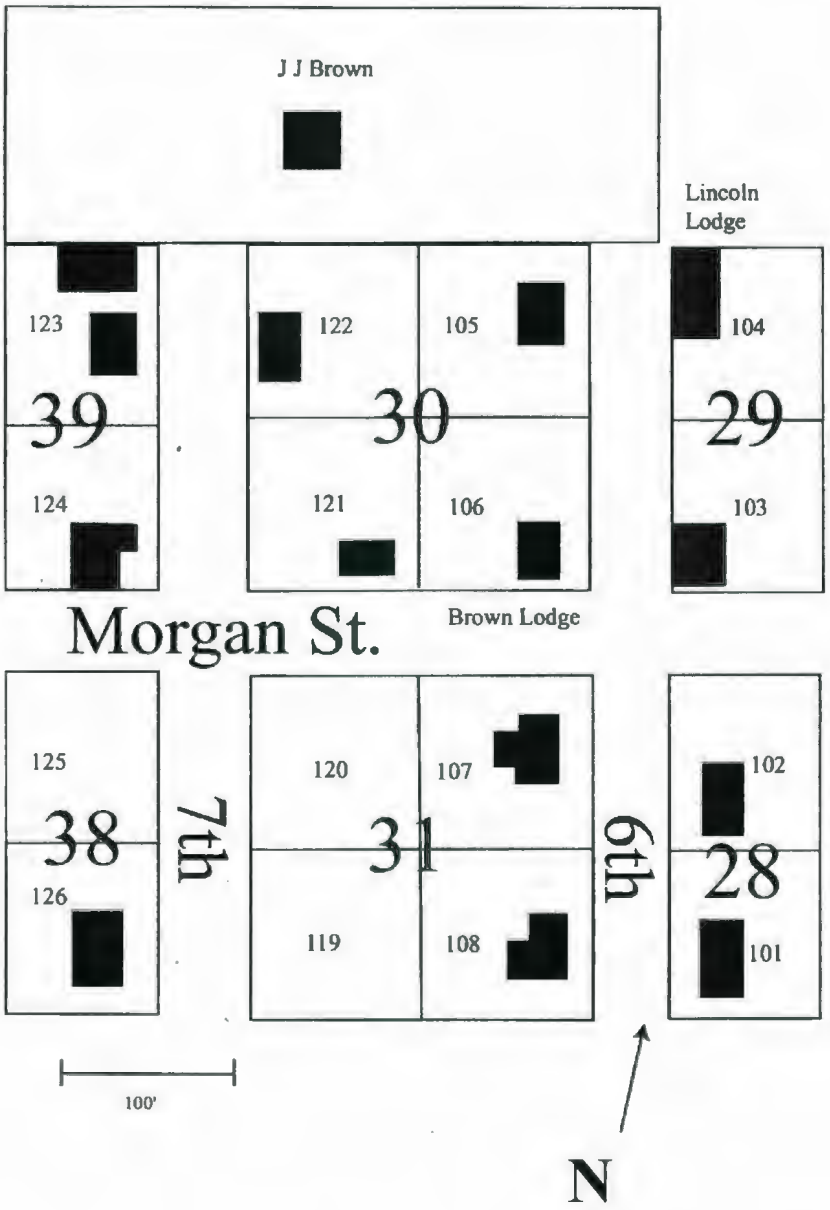


Figure 5: Block #30 in Arrow Rock, Missouri.

Adapted from an 1896 map of the Town of Arrow Rock, Northwest Publishing Co., Plat Book of Saline County, Missouri (Baumann 2001: 83).

cords of wood worth $500, employing four people who produced 35,000 gallons of stoneware valued at $2,800 in a horse powered factory (Baumann 2001; USCB 1860). Baumann (2001) has also pointed out that the 1859 and 1861 Tax Book of Saline County lists a slave worth $500 among the assets of the Arrow Rock Pottery.

Caldwell sold the pottery to Dr. William Price in 1863. Price kept the Arrow Rock Pottery factory open for business until his death in 1865. Upon his death, the pottery was willed to Price's brother-in-law John Sappington who owned the business until it closed its doors in the late 1860s. In 1881, Sappington decided to sub-divide Block #30 into four lots. The lots were sold to African-Americans creating the last historical phase (Baumann 2001). Block #30 was developed into a Masonic hall, called the Brown Lodge, with three separate residences. The Brown lodge was used as a commercial space, housing both a restaurant and bar on the ground level, until the 1950s. A house on lot 121 was used for a brief time by the African American Odd Fellows. After the depression of the 1930s, the African-American community began to dwindle in Arrow Rock, as people fled to find employment in larger cities. As older African-Americans died, the residences and Brown Lodge was abandoned and left unattended on Block #30. Finally, the Friends of Arrow Rock created a new historical period of preservation, by protecting the built heritage there and revitalizing the Brown Lodge, from the inside out and by reconstructing the history of the site, through the excavations and historical research by Dr. Baumann and his team.

2.9 The Archaeology of Block 30, Caldwell's Pottery

When the Arrow Rock Pottery was built in the nineteenth century, Newton had erected a bottle kiln and began producing stoneware pottery in his turning shop within a

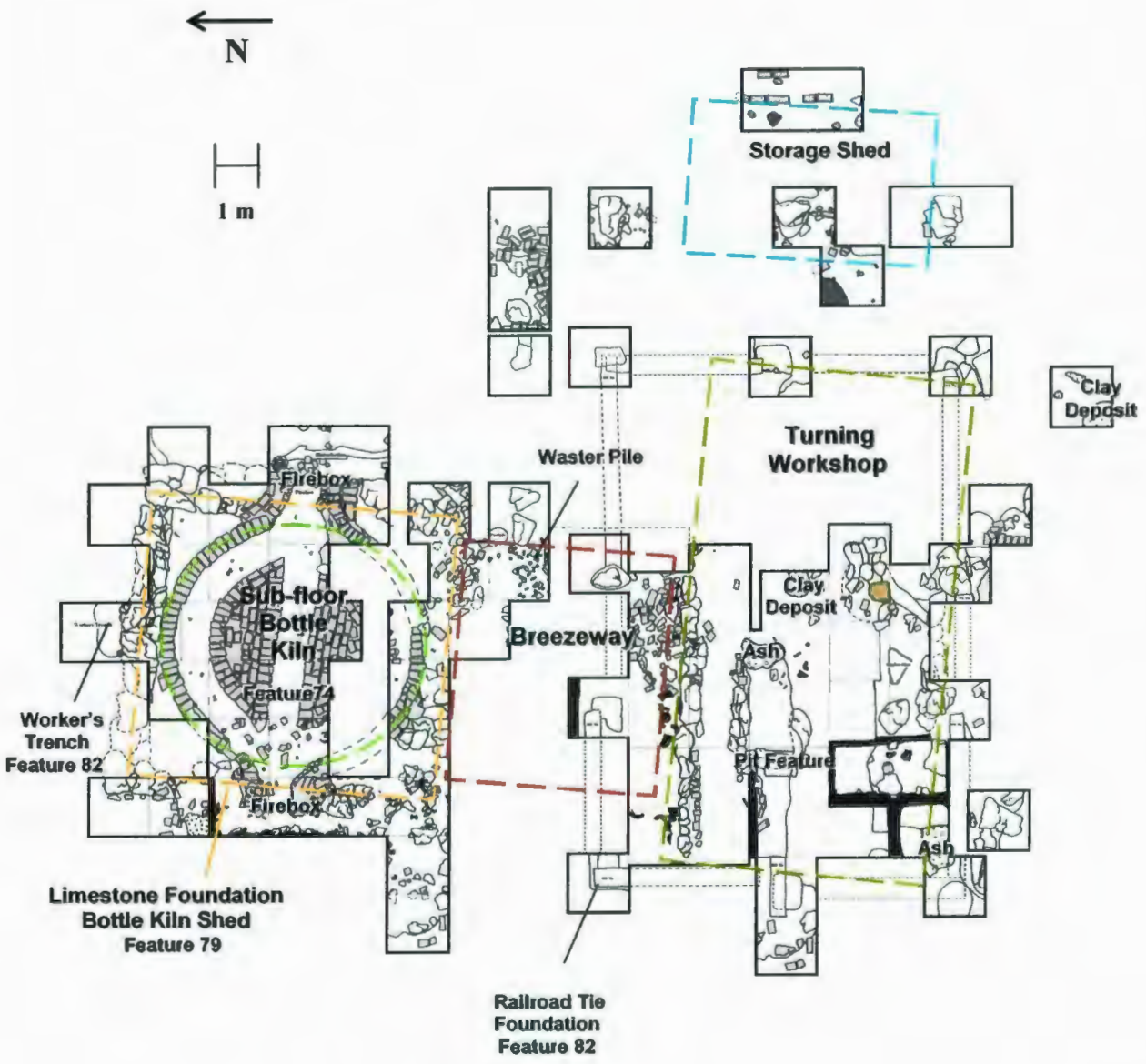


Figure 6: Caldwell Pottery Factory Site Plan of Block #30, Arrow Rock, Missouri.

Based upon plan views recorded during archaeological research between 1996 and 2002 by Dr. Baumann's team. (Map drawn by Dick-Jacobson and digitized by Harris in 2007).

year of its acquisition (Figure 6). It is unknown whether or not Newton chose to use any of the existing structures remaining after the sale of the McGuffin homestead, but as history will show, folk potters are good at knowing what they have and how to utilize their resources. Once the factory was established it would not have taken long for it to become a solid presence within its landscape. As the cyclical rhythm of the pottery factory began to establish itself it is hard to imagine that it would not go unnoticed by people living in Arrow Rock.

Pottery production became such an intrinsic part of Arrow Rock, 180 years ago, that today pot sherds can be found, not only at the site of the pottery factory, but also throughout the entire town and the surrounding area (Dick-Jacobson 2001, 2002). Ceramic remains were produced at the Arrow Rock Pottery, between 1855 and the late 1860s, and were found throughout all the occupations classified and attributed to the history of Block 30. Excavations at the Caldwell Pottery Factory / Brown Lodge archaeological site between 1996 and 2001 by Dr. Baumann's team helped recover structures, artefacts and features that would create questions directly related to this occupation and time period in Arrow Rock's history.

The remains of the Caldwell Pottery Factory Site can be found on the North West quadrant of Block 30, located alongside Morgan St. Dr. Baumann excavated his first unit in 1996 and recovered a portion of the *insitu* structural remains of the sub-floor of a bottle kiln. The discovery of these kiln remains confirmed that there was more than one occupation in this Block and over the next 6 years Dr. Baumann investigated its history and connected the physical remnants found in the site and assigned them to their appropriate historical occupation.

A total of 101 excavated units, 1 x 1 m, were attributed to the Caldwell Pottery Factory site. Screening the material recovered from these units yielded thousands of artefacts such as, ceramic potsherds, kiln furniture, nails, wire and beads, marbles (ceramic and glass), ammunition casings, small pieces of a slate with markings on it, a wooden dice, coins, a pencil and broken pieces of jewelry were collected. Features such as, clay pits, waster dumps, postholes, concentrations of ash, chert and compressed soil lens were also identified and recorded. The structural remains of the bottle kiln, limestone foundation, fireboxes and brick scatters were uncovered around the workshop, kiln and underneath the North and East side of the Brown Lodge. The recovery and capture of all of these remains found at the Caldwell Pottery Factory site were supervised and directed by Dr. Baumann while he explores Arrow Rock's community history.

The difficultly in creating a plan view for an excavation as thorough as the one conducted for the Caldwell Pottery Factory archaeological site was the number of units that were uncovered, the extent of the structures revealed, the number of features identified and the amount of the artefacts associated with them. This plan view is designed to focus the viewer upon the single most important decision that Caldwell made when he designed his pottery factory – the kiln. The location of the bottle kiln was probably the deciding factor to how the rest of the buildings functioned as a producing pottery factory on Block 30 in the nineteenth century. Most likely, the kiln was an addition to an already existing structure, the McGuffin homestead. However, because the kiln would have become extremely hot, upon firing, the kiln could not have been safely attached to any building. If so, the materials would have to be something other than wood so that they would not be damaged by the intensity of the flame and heat from inside the

kiln. This single decision would be enough to justify the limestone footings found radiating South from the suggested doorway of the kiln, and the differences between the foundation (feature 79) used around the sub-floor of the bottle kiln (feature 74) and the foundation (feature 22) found under the Brown Lodge. Not only does the limestone footing suggest a breezeway between the kiln and workshop, but it also has the additional evidence of the type of soil, compressed silt, found in this location (Baumann 2009). Since there is only evidence of one kiln, and the analysis has shown that some of the ceramic remains were only bisqued, where is the second chamber? With no additional kiln uncovered at Caldwell site, it can be speculated that the bottle kiln recovered north of the Brown Lodge had a bisquing chamber (Baumann 2002). It was not uncommon, in American kilns, for the bottle neck to be built with a bisquing chamber above a ground level salt glazing chamber (Sweezy 1994; Zug 1986). If this is the case at the Arrow Rock Pottery, the potters would have needed to stack green ware into this space in a relatively safe manner in order to keep breakage of vessels to a minimum. So, they would have either had to use a ladder or walk between the workshop and the kiln on a second level. A ladder would have sufficed, but it would have been a precarious situation with the type of ware the pottery produced. A set of thick wooden planks resting on a second storey platform would have been ideal to close off the void between the kiln and breezeway.

The aspects of the site that is relevant to this thesis is the identification of the kiln, foundation, fireboxes, footings for breezeway, workshop, shed and appropriate clay or ash features and has been identified in Figure 6. In this research, it is not as relevant to understand what the kiln was built upon or the kind of materials it was built from. What matters most in this research is what was created at the site and in the kiln in the

nineteenth century – the ceramics. The purpose of the map in Figure 6 is to confirm the size and type of kiln used to produce the ceramic remains found at the Caldwell archaeological site. It is the size and type of the kiln that is the most influential outside force on both the type of ware identified and the kind of kiln furniture used to support these vessels stacked vertically in the kiln. Therefore, the plan view in this thesis illustrates the basic layout and style of kiln and its association to the rest of the structures and features identified at the site. The echoing influence of the kiln recovered from the Arrow Rock Pottery has remained as it reverberates, not only its impact on Arrow Rock's historic skyline, but its place within the town's evolving community, and ultimately, the ceramics it left behind.

2.10 Summary

The village of Arrow Rock differs from most rural towns in the United States of America today. The residents of the town and the state have chosen to preserve the legacy of the town, offering it to those who would like to learn about America's frontier history. Arrow Rock recognized that once the railway line and interstate bypassed the town that their options were few. Once again, the town was confronted with the same transportation issues that have plagued them in the past. In order to capitalize on what Arrow Rock did have, it had to become a destination, rather than an early stop along the Santa Fe Trail into the developing west. Arrow Rock is filled with real life artefacts and personal histories of lives lived with characters as interesting as any fictional ones. It is these lives that have been used to generate an interest in Arrow Rock creating both a historically significant archaeological site and a tourist attraction. The State of Missouri, the Friends

of Arrow Rock and the residents of the town decided that Arrow Rock's history was worth saving and the town was declared a National Historic Landmark in 1965. Arrow Rock has reinvented itself through conservation, preservation, tourism and education.

Chapter III

Research Design

3.1 Introduction

The goal of my research was to complete both a historic and contemporary survey of folk pottery production, to analyze 853 potsherds found at the Caldwell Pottery factory archaeological site, and to generate a classification of the popular goods produced there. Each research approach produced a different result, but all have contributed to my view of American folk pottery production and its historic transition from a commodity with mass appeal to a rarity purchased as a collector piece. Historical records, oral histories, and comparative research supply a context compatible with the artefacts, by providing historic details, social uses and cultural similarities to solidify the designation of the forms described in this thesis. The questions exposed by this research design revealed the attributes associated with folk pottery and their relationship to the Caldwell pottery factory. This chapter poses the questions, and explains the methods used to gather the information necessary to identify the pots from the artefacts created at the Arrow Rock Pottery in the nineteenth century.

3.2 Research Questions and Objectives

The specific techniques and tools used to make folk pottery have not changed dramatically since the nineteenth century. The process of recreating folk pottery is currently still available. Still, it is the ceramic sherds that were created between 1855 and 1863 to 1870 that have captured the story of Caldwell's pottery factory. The subsequent

relevance of the pottery created in Arrow Rock exists in its importance to the culture of its historical time period and in the physical evidence that was created during that time. To construct a more comprehensive understanding of the product that was made during the lifetime of Caldwell's pottery a series of research strategies were required to highlight specific attributes about folk pottery production 180 years ago:

(i) Observe, learn and participate in a folk pottery shop in Seagrove, NC to better identify the tools, use of forms, production methods, and lives folk pottery created in America through the generational dedication to a craft.

(ii) Determine various sizes, forms and functions of stoneware objects, as well as the kinds of kiln furniture made and used at the site through ceramic analysis.

(iii) Initiate an understanding of how the ceramics produced at the Caldwell Pottery factory served the community of Arrow Rock as indicated by the forms identified through the analysis of 853 artefacts.

In addition to the above research strategies a few questions were devised to learn about folk potters, their wares and the way in which America's pottery was produced in the past:

(1) What is the range of ceramic forms found in the sample procured from the Caldwell site by Dr. Baumann?

(2) What tools, glazes and methods were used to produce these ceramics in the Nineteenth century and are they consistent with history?

(3) What did the Caldwell pottery factory look like after excavation by merging and illustrating unit plan views recorded during Dr. Baumann's study?

(4) How does the ceramics produced at the Caldwell pottery factory relate to other forms of ceramics produced in the nineteenth century in America?

(5) What were the factors that contributed to the diminishing use of utilitarian folk pottery in America?

These questions combined with three different streams of research strategies allowed me to complete an accurate portrayal of Caldwell's pots when they were unbroken. Only the unbroken pot can complete the story of the Caldwell Pottery Factory because that is where the story is first crafted — through the hands of the potter. Historic research, ethnoarchaeological study, contemporary site reports and ceramic analysis reveal the stories captured in folk pottery's muddy past.

3.3 Methodologies

My research is aimed at understanding folk pottery, popular folk forms, the tools used in production, how common it became, and the differences between folk pots and their industrial counterparts through breaking down their history, evolution and legacy. The methodologies I used were multi-disciplinary allowing me to integrate my own past experiences in contemporary pottery production. The archaeological methodology of my research was broken down into three phases; historical research, the ethnoarchaeological experience, and the analysis of ceramic remains found at the Caldwell Pottery site. These different approaches equipped me with an understanding of folk pottery's uses in the nineteenth century, which in turn allowed me to conduct a more thoughtful analysis of the ceramic assemblage from the Caldwell pottery site.

3.3.1 Historical Records

The use of primary and secondary sources has provided both a comparison and a record of folk pottery's history, agents, oral histories, social connections, locations of pottery shops and the branches of distribution. These sources are used to answer my questions about what the common ceramic forms looked like, the tools used to produce folk pottery, what a folk pottery factory looked like in America in the nineteenth century, and how they compared to Caldwell's pottery and production site, ultimately providing an solid designation, as well as, context for the use and subsequent disuse of the ceramics produced at the Arrow Rock Pottery.

Primary historical sources such as oral histories, journals, photographs, cultural and ethnographic studies facilitated the identification of those unique traits that distinguish folk potters and their wares from those whose motives that come from art and self- expression rather than practicality and mass consumer appeal. Such sources provide first-hand accounts that tell the story of traveling with a wagon train to trade goods along the Santa Fe Trail or rare conversations spoken by the folk potter about life in the shop, turning pots, kiln firing, and seasonal expectations (Baldwin 1993; Burrison 1995; Mack 2006; Napton 1991; Sweezy 1994; Wigginton et. al. 1984; Zug 1986). Folk potters, their wares and shops were also recorded in contemporary industrial censuses, probate inventories, shop inventory lists or advertisements (USCB 1860; Burrison 1995; Webster 1971)(Appendix 4). Historic documents are significant on several levels. Most importantly they demonstrate the relationship between the producer and the consumer. What the producer wants to sell is based on the consumer's needs; therefore each type of document directly demonstrates a relationship between the ceramics and those who

produced them to those who purchased them. My ethnoarchaeological research was compiled in a pictorial journal recording daily activities, personal communication and unique historic details.

Site reports from contemporary archaeological sites in America highlight the ceramic artefacts found and how they are used as comparative evidence in the identification of the forms found at the Caldwell site. For example in Faulkner's *The Weaver Pottery Site* (1981) he identifies rare artefacts called *draw trial pieces,* providing a visual example of what is more commonly referred to as a "glaze tester". This form was hard to identify within a sample derived randomly from thousands of artefacts, but with Faulkner's site report the designation was secure. These site reports are credible resources that help identify the similarities between the artefacts found at the Caldwell Pottery Factory with others at contemporary archaeological and production sites in nearby states.

Books on clay or glazes, studio potter guides and advanced ceramic manuals provided an additional education in pottery production, as used by active potters. Clays, glazes, kilns, wheels and the tools needed in pottery production are discussed in chapter four and five. Documents created by potters are valuable sources to answer the questions other potters want to ask. Suggestions regarding the construction of kilns, trouble-shooting problems in kiln firing, definitions to forms and kiln furniture, glaze or clay recipes that used to be top-secret to rival potters are readily available, and any bit of practical information one would never think to ask about pottery production can be found in these books. Such books, combined with my own experience in pottery production, have been instrumental in understanding why certain things may occur in the archaeological record. An example of their benefit is best described using a detail in

Olsen's *The Kiln Book* (2001), where he explains that a bottleneck kiln is inherently unstable due to its shape, size and the temperatures it reaches. Such a kiln requires a substantial foundation or it will collapse.

Finally, the video documentary is a medium that allows one to view modern men and women of mud, their pots, the location of their potteries and their familial ties, linking them to a lengthy American tradition. Sharkley's documentary *Crawdad Slip* (1999) showcases Sid Luck, summarizing his work, family, pottery, history and the contribution he is making to America's living history. Documentaries can reach people of all ages or levels of education who want to learn about the past. Archaeology is a multidisciplinary field and many approaches are needed to understand history in all its complexity. Documentaries are flexible with the ability to record excavations, illustrate methodologies, moments that would essentially be lost, or present the results of an investigation. Its value is recognized here and is seen as a credible method of collection, protection and identification of archaeological sites, experiences and artefacts.

3.3.2 Ethnoarchaeological Research

While the people practicing folk pottery and their standing in society have changed over the years, for the most part the methods, tools and principles have not. Mastery of techniques and tools such as ribs, chucks, wheels, pin tools, loop or cutting tools and knives are still requirements, and have been so for at least the last 180 years. Whether you are wheel throwing pottery or hand building pots, it is the quality of the craftsmanship by skilled hand of the potter that determines legacy.

One of the largest transitions in the history of the craft of folk pottery is the shift in the motive behind the decisions made by the potter. These decisions changed the value of the pot by eroding their distinctive characteristics. Up to and during the nineteenth century, potters were born into this life creating vessels with visible characteristics that could define a family's lineage. It was the progression of the business of ceramics that facilitated the folk pots evolution into the utilitarian vessels found today as artefacts at archaeological sites such as the Caldwell Pottery Factory. There is enough within history to identify the forms; however it is the ethnoarchaeological experience that provides the opportunities to observe the decisions made by the folk potter in real time. The existence of practicing folk potters offered me a genuine opportunity to observe, learn and practice some of the techniques still used to create traditional folk pottery and immerse myself into their culture.

Ethnoarchaeology provides the framework for the researcher to better describe and explain ceramic production, or aspects thereof, by providing the opportunity to generate relevant data to the interpretation of archaeological materials and has been essential to my sensory perspective of folk pottery (Costin 2001). This practice is not new, in fact, it has been used by researchers by way of understanding raw materials, technology, principals of spatial or social organization, finished goods, principles and mechanisms of distribution and consumers (Costin 2001: 377-378). Cultural studies have also contributed to ethnoarchaeological perspectives such as Zug's (1986) *Turners and Burners* and Sweezy's (1994) *Raised in Clay: The Southern Folk Pottery Tradition* that identify modern stoneware production with traditional nineteenth century methods.

Charles Zug, an expert of folk pottery production, has studied and contributed to

the national interest in Seagrove, North Carolina. He was instrumental in my experiences by introducing me to Sid Luck, a 5th generation folk potter, who provided me with an environment to work and learn about folk pottery production first hand. As a practicing potter I was taught how to produce forms such as harvest jugs, face jugs, and ring jugs. I was invited to contribute to the construction of a traditional kiln. I was treated like a member of a multi-generational pottery family and it was this emersion that dramatically demonstrated the differences between my life in contemporary pottery production and that of Sid's life in the shop.

Making folk pots is not an easy or high profile job. It is not romantic, glamorous or elegant. Like the majority of trades in its time, it was dirty, dangerous and difficult work that required the dedication of a lifetime. The business of pottery relies upon choices made by experienced potters such as the type of clay used to turn ware. It was this experience, born from the business of pottery that influenced the practicality of the ceramics. It was a way to earn a living by providing a product that fulfilled a need in the domestic environment. One of the tactics used to increase the appeal of a potter's particular product was the addition of artistic finishes. The addition of artistic expression was only to serve the process of marketing. The prettier the pot the more likely it was to sell. This was always secondary to the functionality of the particular item. However, folk potters do and did make artistic driven pottery. This is demonstrated by the "whimsies" a subcategory of sculptural forms and jugs produced by the folk potter that showcased their artistic, playful, political or cultural perspective or expression of their world. While this subcategory of folk pottery contained a wide variety of images and motifs, most of the forms were still functional products. It was why they were created that becomes

important. These forms speak more about the potter and his personal experience rather than what the market directed.

Folk potters typically do not spend much time contemplating the aesthetics of a pot and its place in the world of art. If it is pleasing to the eye, the walls are not too thick, not too wonky, but symmetrical, that is good enough. It is this lack of scrutiny of every detail and the absence of ego that is encoded and captured in the pots. Folk potters were business people creating a product to sell, barter or trade for money or goods. For them, pottery making, whether on the farm, in a shop or for a master potter, is a life centered on time. Time was strictly allocated for turning, glazing, or firing pots. Each step of the process requires the completion of the preceding step in order for the next phase to begin. An artist, on the other hand, uses the medium of clay to express an idea, value or experience in a way that is suitable to them with a reliance on the unstructured speed of inspiration. This is what the ethnoarchaeological experience taught me. Art is art and craft is craft. It taught me why people do what they do in "real time" by participating in daily activities in the pottery, feeling the intensity of the heat from a firing ground hog kiln and recalling the moment that I watched beads of sweat rolling down the cheek of a potter stoking a 2000°C kiln, recalling the scent of singed hair. That was how I learned what was encoded into each tiny potsherd excavated at the Caldwell pottery factory. In its simplest form — it is time.

3.3.3 Ceramic Artefact Classification Analyses

The nature of clay is both stable and unstable. Ceramics can be damaged easily and breakage is common. Yet, ceramics are durable and artefacts found made from clay

do not deteriorate easily. The information that can be gleaned from ceramic artefacts can be used to answer questions regarding value, individuality, need, pot manufacture, tools and trade networks associated to the artefacts (Jacobson et. al. 2004; Rice 2005). Regardless of the value that artefacts provide there are limitations. The limitation inherent in ceramic artefacts lays actually in the sherds themselves and what kinds of pieces are found, rather than the state of the artefact itself. Diagnostic artefacts such as spouts, rims, or handles become distinguishing factors. Diagnostic sherds provide information about form, use, need and functionality. The sherds that originally came from the body, shoulder or base of a vessel hold little descriptive value and say more about the clay itself.

My research is based on a total of 853 ceramic artefacts. Of these, 730 sherds were chosen randomly from the ceramic artefacts unearthed from the Caldwell Pottery factory archaeological site, Block 30. These artefacts were analyzed during the summer of 2003 and two categories of ceramics were identified within the sample — vessel forms and kiln implements. A further 123 artefacts were combined with my sample to strengthen the statistics on form identification and come from unpublished research conducted earlier in 2003 (Burney-Miller 2003).

Vessel forms, kiln furniture, rim forms, decoration or lack thereof, stamps, and scratches have been found on the Caldwell pottery and a classification of style, form and function has emerged. The analysis of the complete sample exposed 561 salt-glazed stoneware artefacts and the remaining 306 artefacts belong to a type kiln furniture and utensils (Jacobson et. al. 2004; Burney-Miller 2003). Visual and descriptive attributes were assigned to the Caldwell potsherds as outlined in Walthall et. al. *The Traditional*

Potter in Nineteenth-Century Illinois, Archaeological Investigations at Two Kiln Sites in Upper Alton (1991). My analysis for this thesis also depended upon contributions made by Beaudry et. al. (1988), Rice (2005), and Sinopoli (1991). Because there is less research done strictly on kiln implements, its identification relies on classifications found in collector guides, archaeological site reports and the potters themselves (Faulkner 1981; Walthall et. al. 1991; Guappone 1977; Luck 2003b).

The analysis of the Caldwell pottery has identified the range of goods produced at the site, the tools needed to create the wares, and the techniques involved will be expanded upon in Chapter 5. The results of the analysis have been presented alongside visual descriptions, historic interpretations and archaeological context.

The following method was used in the analysis of the Caldwell pottery. Attributes associated with the pottery was recorded on an analysis sheet compiled by Burney-Miller (2003) as outlined in Walthall et al's. (1991) format:

1) The sherds were first identified by form and recorded as bottle, bowl, jar, brazier, drainpipe, jug, lid, pie pan, indeterminate, other or kiln furniture. The sherds where then further divided into its sub-type and part. Specific forms such as the jar or bowl were broken down as follows: jars — necked, straight-walled, incurved, shelved, or cylindrical; bowls — round or straight-sided, incurved, shallow walled, or slip cast. The parts associated with a vessel were described as base, handle, body, and rim or indeterminate. The kiln furniture fragments were divided into form type as follows: wedge, square pad, rectangular bar, short chuck, jug sagger, flattened wad, dog bone or coil.

2) The sherds were examined for any marks or stamps. If a mark or stamp was

identified, it was recorded on the analysis sheet under placement of the mark or stamp. Any sherds displaying unique characteristics were always sketched on the back of the analysis sheet, highlighting the location of the mark on the vessel, with a suggestion about what type of tool may have been used to make the mark on the pot. This element of the research is subtle but it identified the choices potters made revealing a chronological time and consumer demands through the tools used to mark the vessels (e.g. wooden knife or nail).

3) The orifice diameter of the rim sherds, bases and vessel platforms were determined using a metric ceramic diameter template with a 10 percent periphery (Rice 2005: 223). The diameter was determined using the outside rim of each sherd in centimeters. The outer edge of this rim was also used to determine size and remaining percentage of vessel. The vessel platform has been added to this analysis and it is the physical record of a vessel that was placed on or under a piece of kiln furniture. The weight of this vessel left an associating compression ring in the medium and in some cases wall thickness. This ring is identified on the vessels or kiln furniture in the illustrations and is presented as a diagonally stripped area (see page 135). The outer edge of this ring could be used to determine base diameter or vessel diameter of the vessels resting upon it and matching it to the ceramics found in the sample to correlate the exact type of kiln furniture used to support a specific form in the kiln.

4) Digital calipers were used to determine measurements for rim width, rim height, wall thickness, base thickness, handle width and thickness, length, height, and width of kiln furniture. These measurements were recorded on the analysis sheet in centimeters. To determine the length of the lug or strap handles found in the sample a

flexible ruler was employed along the length of the artefact, marked and measured with digital calipers.

5) The rim forms were determined visually through the Upper Alton guidelines and illustrations provided in the report. The Upper Alton guidelines describe each type of rim alongside a visual example of each specific rim profile (Figure 18). The visual representations of these forms are found in Walthall et al (1991) and are summarized in Chapter 5. The rims are important because they allude to the products that potters chose to make. Appendix 2 has a diagram demonstrating how the measurements were taken on the rims.

6) Exterior treatment (grooves, ridged cordon, shelved cordon, etc.), decoration (hand painted blue stain, brown slip, salt glaze, etc), and interior treatment (brown slip, salt glaze, etc.) were all recorded on the analysis sheets. The colour of the paste, surface (exterior) and interior were described using the Munsel soil colour chart when there were two or more colours evident in the paste each colour was identified, recorded, and illustrated.

7) Sketches of the artefacts were produced, either in profile or plan view on the same analysis sheet that the measurements are recorded on. A graphite pencil (2B) was used to sketch the artefacts and drawings have been labeled with a scale, title (plan view [PV] and/or profile) and common measurements for ease of future orientation of sherd (rim height and width). When broken or deteriorated areas were included in the illustration, a legend is also located on the sketch.

8) After the information was assembled from the ceramic stoneware sherds and kiln furniture they were entered into a database (Access). Field Specimen (FS) reference

number, unit, sherd number, and location at the Caldwell pottery site were used to organize and record each sherd or piece of kiln furniture. Percentages were calculated through Access queries revealing the frequency of forms. These statistics were used to create the typology based on the popularity of forms.

3.3.4 Typology

The descriptive elements of style can be broken down into attributes that can be quantified based on similarities or differences. Attributes such as form, colour, shape, size, clay, technology and function can be identified in ceramic artefacts and then sorted into a classification system. Creating a type of ceramics from empirical data creates a visual language that is distinct with the ability of binding it to a particular group of people or culture that is different from region to region (Rice 2005). A typology is an effective visual way to manage a collection of attributes.

Archaeologists have used typologies for decades and have found that there is no true classificatory scheme that fits all types of ceramics available (Beaudry 1988: 19). Typologies must reflect actual methods or patterns in data and if vigilance is paid to the warning the results of the typology is seen as an accurate reflection of the conscious decisions made by the producers of ceramic ware and those who use the ceramics in their lives (Sinopoli 1991). Technological and stylistic attributes are some of most flexible characteristics to address in a typology and the type-variety is the method best suited to these variables (Rice 2005; Sinopoli 1991). Functional variation will exist among forms found at historic sites due to the nature of pottery making, but the typology is useful in

determining the differences in shape, design or utility. Caldwell's pottery has been classified using the type-variety system.

3.4 Summary

Historic research, the ethnoarchaeological experience, and ceramic analysis have functioned collectively to generate both the archaeological interpretations about form, style and function for the ceramics found at the Caldwell pottery. When these are used together they provide greater strength to the interpretations of the artefacts. The history of folk pottery provides authenticity to each form identified in the sample and is presented alongside its historical link. The ethnoarchaeological experience gained from this research impacted my senses and clarified the role of the potter and his job in a way that a book or a picture can not do. Reinforcing the lesson that if you can do than you should do. Folk potters today and in the past spent their lives working hard making a product that was taken for granted during its heyday. However, living as one of many folk potters in a community better conveyed to me the choices that Newton G. Caldwell may have had to make. The science behind ceramic analysis reconstructed the broken pots into forms specific to the Caldwell site. These pots become an indicator of the choices made by potters over the 15 years the pottery factory was active. The typology generated from these pots become the final phase of this research and could be used to compare different historic ceramic artefacts from new nineteenth century pottery sites in America.

Chapter IV

What separates folk pottery from other modes of ceramics is that the forms are simple and [hand made] ... production methods, and surface treatments (glaze and decoration) [are] ...handed down from one generation of potters to the next, maintaining a continuity of tradition relatively unresponsive to change (Burrison 1995: 57).

Historical Setting of America's Folk Pottery

4.1 Introduction

The elusive nature of folk pottery's oral history was a great obstacle facing researchers' ability to expose the stories captured in the pots. The last 40 years have seen dramatic changes in the appreciation of the value of American folk pottery. Early researchers established the history of folk pottery by identifying its specific traits, materials, forms and development chronologically (Guillard 1971; Mack 2006; Webster 1971). During the last two decades, folk pottery has become a focus of greater interest, as the forms that were once just a hangover from the last century have come to symbolize a vital and dynamic period in American history, before new materials and technology transformed the domestic household. As American culture continues to speed further away from its early struggles it does not make folk pottery's history less valid. This makes folk pottery's history more significant because the information found in earlier sources used to define form are actually chronologically more valuable because of their proximity to folk pottery's actual use. Therefore, it is viewed as a symbol of this past and,

in the end, an acceptable academic pursuit. The last decade has seen a revival in the interest of American folk pottery as historic pottery factories are beginning to re-emerge through archaeological analysis, while folk pots are becoming rare and harder to locate.

There are two major streams of ceramics in America. One category "…assumed the status of fine arts" and "…were in fact produced as artistic works and as examples of the ultimate potential of the potter's craft, with aesthetics foremost in mind" (Webster 1971: 19). These art ceramics often receive the greatest consideration and affection by collectors, scholars, critics, and historians (Webster 1971). However, a second category of ceramic wares made for the masses, to be used day to day, before the invention of tin cans, plastics, refrigeration and glass, was far more plentiful. Such pottery has been identified as "cottage", "naïve", "peasant", "inferior", "vernacular" and "folk". Folk pottery was made in a variety of forms (Mack 2006; Pultz 2001; Webster 1971). "It was made efficiently, inexpensively and with utility foremost in mind in larger 'factories', by hundreds or thousands of small local potteries…" and farmers who made pottery as a way to extend the resources gathered from their land (Guillard 1971; Webster 1971). Aesthetics were less important and relevant only to the utilitarian product as a way to make it more desirable to the consumer. This pottery reflected the needs and desires of the people who used it as much as the skills of the potters who produced it (Webster 1971). Any obvious changes noticed in ceramic ware are caused not by new techniques but rather the social and economic forces surrounding pottery production (Pultz 2001).

Anthropology, ethnography, art history and fine art studies have contributed to folk pottery's history through archaeological remains, oral histories, historic documents and surviving pottery. Valuable archival information such as probate inventories,

apprentice contracts, industrial censuses, and historic price lists have been significant to the research conducted on folk pottery. These documents create specific detailed glimpses of the culture of folk pottery establishing it regionally, as well as, how it exists differently from fine art ceramics (Baldwin 1993; Burrison 1995; Guillard 1971; Sweezy 1994; Webster 1971; van Ravenswaay 1997; Zug 1986). The designs, styles, forms, and function of American folk pottery, and the tools or techniques involved with the production of these goods are distinct. Researchers have filled diaries with observations and illustrations or created galleries or historic centres filled with rare photographs, lost pots and artefacts hidden for decades (Sweezy 1994, The North Carolina Pottery Centre 2003; Zug 1986). All this data has been used in an attempt to protect the stories that the folk potters are no longer able to tell (Mack 2006; Sharkley 1999; Wiggington et. al. 1984; Zug 1986).

In this chapter, I will examine the distinguishable traits, traditions and the lives that folk pottery created that sets it apart from industrially made pottery in the south central states during the mid-nineteenth century. Three main categories of literature are relevant to this study: first, historical texts, such as *Early American Folk Pottery* (Guillard 1971), and *Decorated Stoneware Pottery of North America* (Webster 1971); second, historical archaeology projects that focus on the analysis of artefacts recovered such as *The Mountain Potters of Buncombe County, North Carolina* (Carnes-McNaughton 1995), *Made of Alabama Clay: Historic Potteries of Mobile Bay* (Gums et. al. 2001) and *The Weaver Pottery Site: Industrial Archaeology in Knoxville Tennessee* (Faulkner 1981); third, ethnographic data focusing on folk life, such as *Talking with the Turners: Conversations with Southern Folk Potters* (Mack 2006), *Foxfire 8* (Wigginton et. al.

1984), *Raised in Clay: The Southern Pottery Tradition* (1994) and *Turners and Burners* (Zug 1986) provided descriptions of potters, tools and the production of their ceramic goods. The following history of American folk pottery will be presented in narrative format supported by tangible evidence, historical documents, and quotes, illustrations and photographs. Potters, the tools they used, their product, lifestyle, and the size of factories that existed in this industry will be highlighted with the intention to present the choices Newton G. Caldwell, a 3rd or 4th generational folk potter, made about the kind of pottery he produced and the business that was sustained for 15 years because of those decisions (Baumann 2009). The expression "folk pottery" is used here to identify any ceramic wares produced by European immigrant potters and their descendants that were utilitarian in nature. The word "traditional" is used here to describe the techniques, forms and tools used by many generations of American folk potters that established the rhythm and pattern of their historic lives.

4.2 Folk Pottery Distinctions and Definitions

The scarcity of written records makes it nearly impossible to determine the date European pottery-making began in America, but it is believed by scholars that the folk pottery industry began in the colonies sometime between 1630 – 1650, as immigrant European potters relocated to the New World from Europe and the British Isles, in search of economic, social and political freedom (Guillard 1971; Gums 2001; Sweezy 1994; Webster 1971; Zug 1986). Each arriving nationality brought their customs, language, and knowledge with them to the New World. Guillard (1971) explains that skilled potters who landed on American soil were immediately faced with the challenge of locating usable

clay, isolating familiar glazing materials, coping with a shortage of skilled or unskilled labour, in the face of a high demand for storage containers and cooking pots. Early potters became jacks of all trades, combining pottery making with other subsistence practices, like agriculture.

Daily life was a struggle. People were faced with obstacles or misfortune, starvation, disease and death (Guillard 1971; VanDerBeets 1973). The needs of early American society demanded diligence and hard work in order to survive day to day. The role of the folk potter was one of support by providing inexpensive ware to the mass population regardless of socio-economic status (Cabak et. al. 1999; Carnes-MacNaughton 1995; Faulkner 1981; Guillard 1971; Gums 2001; Mansberger 1997; Webster 1971). Folk pottery was sturdy, durable, functional, and designed to work in a domestic environment. These characteristics made it "...a mainstay and a staple of every rural household, store, tavern, and shop" (Webster 1971: 23). The shapes of the vessels were dictated by their use, however individual potters would apply various surface techniques to sell or distinguish their ware. Folk pottery was often decorated or incised with spontaneous, "simple stylized designs of flowers, birds, and fish, animals [or] loops that were carved and rendered with great [control]" (Guillard 1971; Webster 1971). However, surface decorations are not considered a defining characteristic of folk pottery. These attributes were added for the sole purpose to increase its desirability in the marketplace.

Due to the isolation that people endured in the rural environment they depended upon their ability to be self-reliant (Sweezy 1994). Food had to be sown, grown, harvested and preserved. Folk pottery came in all shapes and sizes and the food that was harvested was stored in these pots for when fresh food was unavailable or in short supply

due to colder seasons. It was the long-term storage of food that challenged people and folk pottery provided a vital service by protecting foods from spoilage, infestation or disease. Folk pottery was also used during various stages of preparation, as well as short-term storage (Baldwin 1993; Guillard 1971; Sweezy 1994). America relied on the potter to supply a variety of pots that would enable them to fill their cupboards with all of the ingredients they would need to sustain their families over the periods of time when fresh food was not readily available (Baldwin 1993; Guillard 1971; Gums 2001) (Figure 7).

> In the summer quantities of fruit was dried; for in the winter ahead there would be pies, turnovers and tarts to make, and stewed fruit everyday. Sheets of white cloth would be stretched in the sun...[and] [p]eaches, apples, pears, and figs would be prepared and carefully laid out on the...sheets. When they were well dried they were put away in stone jars and sealed...[F]ive gallon jars of...beet...peach... ground artichoke...gherkin...cumber...green tomato....ax jar hot pickle, and chow chow...[were]...all sealed in pottery jars (Burrison 1995: 19-20).

Folk pottery also captures the stories of people's lives. The first story centres on the maker of the pots and the underlying decisions that were made in order to create a product that filled a need and was appealing to the consumer. It also tells the story of the person who required the pot and the needs it met in facilitating their continued existence. Without the wares created by the potter the time and efforts involved as well as the goods themselves could be lost (Guillard 1971). Unlike the traditional farmer the potter needed to find a location that was rich in the resources required for pottery making. Folk potters tried to settle on heavily wooded land that could be harvested as fuel for the kiln,

Figure 7: A series of marked utilitarian folk pots created by a variety of journeyman potters from "Pot Town" Strasburg, Virginia (Smith 1972: 23).

Figure 8: Cottage industry, Teague Pottery ca. 1990.

From left to right, sales cabin, kiln, shop and mule-powered clay mill (Zug 1986: 58).

materials to build a kiln and the clay needed to produce pots. After a kiln was built — the most expensive aspect of a pottery in energy, time and money — a well located piece of property could provide enough materials that a potter could erect an entire workshop, pug mill, turning wheels, and associated tools (Sweezy 1994; Guillard 1971). "You needed …water, a vein of clay, and the wood…you just made and fired your brick, built a kiln, and started a pottery business" (Sweezy 1994: 22). Those with reasonable skills opened a "cottage industry".

A cottage industry is a small scale pottery, built on the farmstead, where the farmer-potter could produce ceramic wares when farming activities slowed down (Burrison 1995; Sweezy 1994) (Figure 8). After the harvest in the fall, many potters manned their wheels and produced hundreds of ceramic vessels over the winter and stockpiled pots in sheds ready to be sold or traded during the ensuing year. When the weather became too cold in the winter months, traditional folk potters would stop potting and start again when the climate began to warm in the spring just before seeding.

> The best time of the year for making pottery was from when we got through with the crops until it got too cold. In early spring it'd get warm enough to work before we ever start farming. An, between time, there was a streak in there before harvest where we had right much time to work. We didn't figure we ever had time to rest at all – no matter what the situation (Sweezy 1994: 20).

This behaviour was typical for those potters who housed a cottage industry, but there were those rare potters who would make pottery throughout the entire year.

> My daddy made pottery all year 'round, and kept the farm going too…When the weather got so bad that you couldn't burn it off, he'd just keep turning. Our shop had a loft in it, and we'd get up there with them churns and stack them three of four deep, it not burnt. Then when the weather got right, dried out to where you could go to burning it, why we didn't have to wait 'til he turned a kiln [full] and dried it; we'd just go to it (Burrison 1995: 18).

The most successful potters had difficulties meeting the ever increasing demand for their wares (Guillard 1971). It was this demand that allowed some potters to turn their backs on farming in order to focus on the rapidly increasing industry of household wares.

Salt-glazed stoneware in the first half of the nineteenth century filled a need that no other existing material could. Before canning and refrigeration, stoneware was ideal for storage, salting, and pickling because it is inert to acids and alkalis, and impervious to liquids (Webster 1971). In fact, the only competition was wood or pewter. However, wood tends to leave a "woodsy" or "oaky" taste to whatever is stored inside. Also, wood is porous. Whatever food or liquid that is placed inside a wooden vessel will penetrate and impart its characteristics onto the next item stored in that particular container subsequently relegating wood as a single use vessel (Guillard 1971). Pewter was simply more expensive to get. Every household had crocks of salt beef or pork, pickled vegetables, or salted butter. Jugs and bottles kept vinegar, beer, whiskey, and even water, cool, sweet, and drinkable – stoneware never tainted its contents (Webster 1971: 23).

Folk potters were traditionally trained craftsmen who used time-honoured production techniques handed down from earlier generations. Folk pottery's "traditions are conservative and thus resistant to change, providing the potters with a body of tried

and true designs and handcrafting production methods that fit comfortably into their agrarian way of life" (Wigginton et. al. 1984: 71). Folk potters tried to make everything themselves, including bricks for their kilns, jigs, drying racks, hand tools, and turning wheels (Dick-Jacobson 2003a, b; Sweezy 1994). Folk pottery was mainly produced in sheds, distributed to local communities or markets in wagons, as it had been from its start in America (Baldwin 1993; Burrison 1995; Guillard 1971; Zug 1986). However, it is size of the pottery enterprise, the quality of equipment, and labour needed to produce ceramic ware that is also useful in distinguishing the difference between folk and industrial pottery factories as some cottage industries began to evolve into pottery factories during the mid nineteenth century.

The term "factory" is commonly thought of as a large scale operation, but a folk pottery factory in a physical sense was actually quite small. These folk potteries were no longer a side business of farming, but rather, an independent sustainable pottery enterprise with a small staff that consisted of a few full-time turners who would multi-task chores around the pottery from glazing the ware to tending the firings. As these factories grew the production methods changed and specialized jobs became more common (Walthall et. al. 1991). Potteries employed potters who specifically turned vessel forms, pressed hollow ware, turned coarse ware, mixed slips, turned kiln furniture and tended kilns (Walthall et. al. 1991). Folk pottery factories typically employed one kiln (Figure 9). These factories provided goods both for local markets and specialized ones like the military (Guillard 1971; Pultz 2001).

Full-scale industrial potteries had state of the art equipment that helped the potters create and decorate massive lots of utilitarian ceramic ware. These large-sale industrial

Figure 9: Boonville folk pottery factory with bottle kiln.

Located 50 kilometres from Arrow Rock (van Ravenswaay 1977: 460).

sites could actively employ more than one kiln, had several full time turners, glaziers, kiln tenders and apprentices. To illustrate, during the mid-nineteenth century, the Peoria Pottery Company in Illinois employed 50 workers, and fired 4 bottleneck kilns (Figure 10) (Mansberger 1990). The Peoria pottery mass-produced dinnerware, tea sets, and toiletries. Most large industrial pottery during the mid nineteenth century existed near or in urban centres. Their size meant they needed a large population as both a market and a source of labour. Rural potteries were located far from urban centres, in the boundaries between rural or urban landscapes or existed as one of many in a community of potters, called a jug town (Burrison 1995).

Jug towns were not typical in the nineteenth century. Folk pottery factories most commonly existed as single enterprises and in order to compete in the same distribution market alongside large scale potteries, they had to adapt to new ideas, adjust to new production techniques, and adopt new designs (Zug 1986). As an example, the cylindrical vessel embodies all of these concepts. Walthall et. al. (1991) describes the cylindrical jar form as vertical – walled and could be produced by a jig rather than the potter's own hands. The design of the pot was one of versatility by being large enough to hold a winter's worth of beans, salted beef, pork or pickled corn and when no longer in use for the season the crock could be used to churn cream into butter by changing the lids (Zug 1986). The decisions made by the potter to make the changes necessary in the design of their wares resulted in a product that had a multi-use. Due to the impervious nature of stoneware they were able to make a product that could hold vinegar one day and churn butter the next becoming an invaluable tool with unlimited possibilities. The cylinder was a generic form that was easy to duplicate, handy in its use and storage, and created in the

industrial sector of pottery production. The cylinder is an example of a folk pottery innovation born from the industrial mindset and directed by the demands of the consumer. Although this response to consumer demand was driven by industrialized potteries the folk potter was able to compete alongside the vessels that were slowly filling the merchant shelves during the late nineteenth century (Zug 1986).

4.3 A Lifetime Defined by Clay

During the nineteenth century it was assumed, even expected, that a potter's son would follow his fathers muddy path into folk pottery production and many of them did. "'Pottery ran in families', explained Lanier Meaders. 'It was just a family operation. And the time they wasn't working around the shop, they was working in the field' " (Burrison 1995: 43). However, not all folk potters found working in pottery factories were born from pottery families. There were specialized craftsmen, "gypsy" or itinerant potters who travelled wherever the work was, wage labourers, those who married the daughters of folk potters, and enslaved African American potters (Baldwin 1993; Burrison 1995; Guillard 1971; Mack 2006; Sweezy 1994; Webster 1971; Zug 1986).

Folk pottery factories needed labour to operate the wheels, pug mills and tend kilns, in order to generate enough products to compete with industrial potteries. Oftentimes, labour was generated by men and their sons but, as the size of these industries changed, folk potters became a mix of new and old potters working along side each other. The addition of the apprentice potter was a break in the traditional lineage of folk pottery. The apprentice was given an opportunity to learn skills of pottery independent of family membership. The life of the apprentice potter starts with a desire to

work as a potter and then, this desire must be reciprocated by the master potter's willingness to teach the tricks and skills of the craft. Once the apprentice was able to prove his or her skill through a specific level of craftsmanship, only then, would he or she be allowed to take a turn on the wheel. There was no standard formula dictating how long a new potter would spend in transition, this varied from shop to shop and potter to potter. All folk potters were not male but folk pottery production required strength and was thus, traditionally dominated by males. Women potters were rare but did exist. Sweezy (1994) a potter herself, has shown that women, once lost to history, not only marketed the goods, but helped turn, stack and decorate folk pottery (Sweezy 1994; Webster 1971; Zug 1986).

An additional strategy employed by folk potters to handle the surge in production in the nineteenth century was through the creation of micro-dynasties also known as "clay clans" (Burrison 1995; Wigginton et. al. 1984). These clay clans were perpetuated through marriage, establishing a concentration of potters that could then become not only a centre for pottery production but also a continuation of a lifestyle. Members of these clans were related to one another and were allies in business within the market around them (Burrison 1995; Wigginton et. al. 1984; Zug 1986). "Each…[pottery] …developed its own distinctive ceramic traits — vessel types and shape variations, glazes, approaches to marking, handle and rim detailing" that would be produced by all members of these clans (Wigginton et. al. 1984: 73). These miniature pottery empires would have the ability to absorb outside competition from rival potteries and accumulate capital resources such as additional kilns and tools that could sustain all members of these clans over many generations (Burrison 1995).

Although clay clans were connected together through familial ties not all concentrations of pottery factories were linked through these bonds. In fact, these pottery dynasties may have been the step preceding the development of the modern jug town, which slowly emerged at the turn of the century. "...There were twelve or maybe fo'teen of those shops in a circle right around ... that's why [they're] named jugtowns" (Burrison 1995: 164). Historically, industrial potteries may have forced out the small independent pottery factory, pushing small producers to seek out others who were still pursuing their craft by crossing over into the specialty, collector or art markets. The jug town may have been the direct result of these decisions. Seagrove, North Carolina is today's version of just such a place, with over 100 folk potteries within the boundaries of the town. Most artisans living in a jug town either owned or were employed in a pottery.

The most popular forms made by nineteenth century artisans were directly related to the function of the pot and have been identified through forms such as crocks, jugs, jars, bowls, and pitchers. Even though experts agree that these forms were the norm, they have also identified a sub-category filled with quirky and unusual pieces of pottery called "whimsies" (Burrison 1995; Sweezy 1994; Zug 1986). This sub-category of remarkable folk pottery is the most expressive and artistic of the folk form and includes the more commonly found caricature vessels or sculpted roosters to rarer forms such as harvest, wedding, drunkard, or ring jugs (Figure 10). Caricature vessels remain true to their functionality being a pot first and a statement of the playful nature of the artisan second. Animal or human faces are added to the side of the vessels and commonly named "grotesques" face mugs, snake jugs or voodoo jugs (Ivey 1992) (Figure 10b). Caricature vessels were produced by both Euro American folk potters and enslaved African

a:

b:

c:

Figure 10: Traditional folk forms.

a: A reproduction of a harvest jug thrown by Dick-Jacobson under the direction of Sid Luck (Dick-Jacobson 2003) (Photo by Tim Baumann). **b: A collection of "whimsical" grotesque face jugs** (Ivey 1992). **c: A reproduction of a ring jug with corn cob stopper thrown by Dick-Jacobson in 2003** (Photo by Tim Baumann).

American potters. Harvest jugs, ring jugs and drunkard jugs are also functional vessels but they were more a product of the culture they were apart of as opposed to an expression or artistic statement (Dick-Jacobson 2003). These unusual pots are part of a tradition that is still practiced today. This type of pottery is some of the most regionally distinctive and has a long history (Burrison 1995; Luck 2003b; Zug 1986).

Money was scarce, but the potter's skilled hand secured him a standard of living that was desired by others of his time (Zug 1986). Farmers could only rely on the profits gained from their lands to sustain themselves, but the folk potter had an additional product that appealed to the consumer and could be sold or used to exchange for other goods. Folk potters filled their own pots by trading for cash or goods such as iron joinery, steel disks for the wheel head, food, or anything else that had value to them (Burrison 1995; Guillard 1971; Pultz 2001; Walthall et. al. 1991; Zug 1986). This system of exchange and the nature of the business of pottery makes documentation of the lives of folk potters extremely rare (Burrison 1995). "Paperwork was almost nonexistent…[and] the potter used anything handy to reckon his accounts, even the freshly turned jug on the wheel…jott[ing] all his accounts on chips of wood and then burn[ing] them for fuel in his kiln" (Zug 1986: 264 – 265). There were many benefits from a life of clay, not the least of which was the financial gains that could be made. Elijah Long, a folk potter from Crawford County, Georgia, died at the age of 21 years and left a rather substantial estate. An inventory of Elijah Long's "perishable property" (i.e., possessions excluding real estate) lists all the items sold upon his death in 1841 and suggests that being a potter could provide a family a reasonable lifestyle even in the mid nineteenth century (Burrison 1995) (Table 1).

Table 1: Probate Inventory upon the Sale of the Goods for Elijah Long, 1841

{item}	{purchaser}	{price paid}
1 Bed and furniture	Eliza Long (Elijah's wife)	8.00
1 do do	Henry Everett	26.12½
1 B{ed} Quilt	William Dickson	2.00
1 do do	Jesse B. Long	2.75
1 do do	William Long	2.43¾
1 Sp{inning}Wheel	Eliza Long	1.56¼
1 Trunk	William Long	1.12½
1 Sadelle	Jesse B. Long	12.75
1 do	Josiah Dickson	1.50
1 Large Tub	Eliza Long	.87½
2 Setting chairs	do	.50
5 do do	Henry Everett	3.12½
1 Loom	Eliza Long	4.81¼
1 Small Table	do	.25
1 Large Table	William Long	1.06¼
1 Chest	Jasper Whittington	.93¾
3 Cups & Saucers	Eliza Long	.06¼
1 Coffy pott	do	.12½
1 Set cups & saucers	Jasper Whittington	.50
1 set plates	do	.37½
1 dish & cream pot	do	.62½
1 Small Dish	Jesse B. Long	.43¾
3 Tumblers	do	.62½
2 Small Bowls	William Dickson	.31¼
1 Decanter & Bottle	William Long	.37½
1 Set Knives & forks	Eliza Long	.31¼
1 Looking Glass	do	.43¾
1 Book	D. Wadsworth	.31¼
1 D{inner?} Pott	A. Striplin	1.06¼
1 Oven	B. H. Prichard	.68¾
1 Small pott	J. B. Long	.25
1 Frying pan	A{lford?} Long	.43½
1 Axe	William Dunn	1.62½
2 do	William Dickson	.37½
1 Pot Rack	William Long	1.50
1 pr. Tongs	Jasper Whittington	.43¾
1 fire Shovel	Joseph Long	.31¼
1 Grubbing hoe	do	.50
1 do	A. Bryant	.25
1 Weeding hoe	Joseph Long	.06¼

1 pr. Geer {plow gear?}	do	1.00
1 Plow Stock &c	do	1.12½
1 Shovel plow hoe	do	1.00
1 Iron Wedge	A. Bryant	.75
1 Pair Smoothen Irons	William Dickson	1.12½
1 Coffee Mill	John Garret	.31¼
1 Pad Lock	Giles W. Chapman	.31¼
1 Draw Knife	Joseph Long	.81¼
1 Lot Sundries	do	.25
1 Piece of Leather	B. F. Prichard	(not taken)
1 Sythe & cradle	Joseph Long	2.25
1 Pail & Sifter	Eliza Long	.25
1 Bread Tray	William Long	.37 ½
1 Piggin	Josiah Amison	.25
1 Barrel & Basket	Joseph Long	.50
1 Hamper Basket	William Long	.18 ¼
3 first choice chairs	James L. Merit	9.18 ¾
3 second do do	Josiah Amerson	6.75
1 Lot Jugware	Joseph Long	.7½ pr. Gallon
1 Lot Raw {unfired} Ware	James Long	.1½ pr. Gallon
1 Red Heifer	A. Bryant	7.75

The following items were absent from the sale bill, but included in the inventory of Elijah Long's estate:

{item}	**{appraised value}**
5 head of cattle	31.00
1 feather bed & 2 quilts & 1 counterpin & 1 sheet	25.00
1 side board	8.00
1 lot of Jugware Burnt, 391½ Galls.	25.44½
1 lot of raw ware, 352½ Galls.	5.28¾
6 head hoggs	12.00
1 pair of Temples {used in weaving}	2.50
1 lot of notes to the amount of	77.71½

Source: Burrison 1995: 32 – 33.

4.4 Fire, Methods and Tools

The potter's tools and materials are simple, few in number and easily crafted. What the potter relied upon was the strength of his knowledge, a good eye, and a diligent hand. The potter needed a sturdy wheel, adequate clay, precise judgment and an ability to use his fingers to pull a piece of clay into a pot using water and a wooden chip (Webster 1971). These were the decisions and skills needed before the ware had to be surrendered to the unpredictable nature of fire. Kilns not only allow the potter to control fire but established a trusted rhythm or predictability. The strength of oral history taught the lessons the potter would use to balance this rhythm and was directly reflected in the quality of the pots. Scholars have studied the traditions involved in pottery making during this time period, by examining the production techniques and tools used by the descendants of traditional folk potters in Alabama, the Carolinas, Illinois, Missouri, and Georgia (Baldwin 1993; Burrison 1995; Gums 2001; Sweezy 1994; Zug 1986).

4.4.1 The Strength of Clay

Clay is abundant, found in over 60 percent of the earth's surface "in low-lying spots…creek beds, or earth banks" and is mixed with decayed organic matter creating a plasticity that is among, "the principle virtues of ... the material" (Bourry 1926; Sweezy 1994; Rhodes 1971, 1973). Several types of clay can be used straight from the earth and in the nineteenth century, potters would gather either stoneware or earthenware clay by the wagonload (Burrison 1995; Carnes-McNaughton 1995; Faulkner 1981; Gums 2001; Pultz 2001; Webster 1971; Zug 1986). The overland transportation of clay was expensive and restricted the amount that could be collected; therefore wagons were used primarily

for short distances (Guillard 1991; Webster 1971). This single factor defined the areas where stoneware potters could work; making them reliant upon water highways to transport both clay and their products (van Ravenswaay 1977).

The acquisition of clay involved the use of picks, shovels and buckets. It was then taken to the shop to determine shrinkage, its fired density and colour (Rhodes 1971; Sweezy 1994). When the clay was deemed suitable, it was deposited into outdoor storage pits in the yard and left to weather until it could be further prepared:

> Clay was moistened for...days in a...pit and, when it had softened...[it was] ground [inside] a beam mill drawn by a mule walking in circles around a barrel full of churning clay. After...this slow grinding, when the clay was of an even consistency, the batch was removed, blocked in large squares, and stored in the shop – usually in a pit covered with wet sacks to prevent drying (Sweezy 1994: 35) (Figure 11, 12).

Earthenware clay is the most accessible clay found in its natural state. It produces a low-fired clay body that contains a high level of iron and a variety of mineral impurities such as sand, very small pebbles, and other rocky fragments (Rhodes 1973; Burrison 1995). It is the inclusions that give this type of clay its composition similar to concrete. Like concrete, earthenware is brittle and prone to breakage. That did not hinder its usage before the 1700s because it had little competition. Only with the emergence of stoneware in America during the early eighteenth century did its limitations become widely known. After stoneware became the popular choice earthenware began to be used in forms suitable to its inherent properties such as plant pots, sculptural forms, bricks and construction materials (Dick-Jacobson 2003a, b).

Figure 11: Grinding clay with a horse powered pug mill (Webster 1971: 44).

a:

b:

Figure 12: a: Clay mill (Zug 1986: 126). **b: Interior shaft with pegs for clay mill** (Zug 1986: 126).

Stoneware clay became the popular choice in domestic ceramic goods because it is strong and able to stand up to the rigors of everyday use, with less breakage. Stoneware clay is a high-fired whiter-bodied clay with a molecular matrix that is tighter than that of earthenware because it becomes dense or rock-like after firing (Rhodes 1973; Burrison 1995). This clay is fired at kiln temperatures ranging from 1200°C to 1800°C (cone Δ10 – cone Δ12). Firing times range anywhere from 10 – 16+ hours, depending on the dimensions, type of firing and style of kiln. The colour of this clay ranges between light gray or buff to a darker gray or brown (Rhodes 1973; Burrison 1995). This clay is the best choice for storage vessels, flat or hollow dinnerware, pitchers and toiletries. Stoneware production hit its height in the mid nineteenth century, but potters did not abandon earthenware completely and continued to produce it alongside stoneware pots, until the new medium was mastered. By the end of the 1800s stoneware was used almost exclusively (Guillard 1971; Mack 2005; Rhodes 1973; van Ravenswaay 1951).

4.4.2 Tools of the Trade: Historic Pottery Wheels and Wooden Chips

Pottery can either be built by hand or thrown on a wheel. Folk pots were generally hand turned on either a treadle wheel or a kick wheel and the nineteenth century potter's toolbox was filled with "predominately wooden [tools]…few in number and simple in character" (Mansberger 1997: 91) (Figure 13). Ethnographic and literary sources have revealed the standard toolbox used by folk potters include wooden chips, knives, rim sticks, calipers or measuring sticks, leather shammies, and nails for inscribing passages or numbers (Guappone 1977;

Luck 2003b; Webster 1971). Most tools were made from local materials and shaped by the hand of the turner creating a unique variety of shapes or styles that fit nicely into their own hands (Luck 2003b; Sweezy 1994).

The two most common designs of pottery wheels utilized in the nineteenth century were either the treadle or the kick wheel (Guillard 1971; Sweezy 1994; Zug 1986). The basic construction of the pottery wheel allows the potter to control the speed and movement of a steel disk that is attached with a crankshaft mounted under this wheel head to a secondary flywheel near the floor. The difference between the treadle and the kick wheel is the way the potter powers the wheel. The treadle wheel has a paddle attached to this crankshaft and it is pumped by the potter's leg causing the wheel head to spin (Rice 2005; Sweezy 1994). The kick wheel works the same way as a treadle wheel only the pedal is missing and the potter kicks the solitary fly wheel directly with his foot.

Throwing or "turning" pots is the process of changing a piece of clay into a pot using the centrifugal force caused by the spinning wheel and water (Luck 2003b). The skilled turner could produce a large number of forms in one day with a graceful fluidly that contradicts its difficult nature leading the casual observer to inaccurately believe it is an easily accomplished task or skill. Wooden ribs and chips were the tools most used while throwing the pot to soften the shape of pots, smooth out the rills or compressions rings or to apply grooves on the exterior of the pots (Rice 2005: 129). Tools are often made with the materials that are at hand. The personal connection between potters and their tools was demonstrated to me when Sid Luck retold a story of going into the back of his wooded property, finding an appropriate stick, and making a chip from it (Dick-Jacobson 2003a, b). Sometimes only fingers will do the trick and many potters used only

a:

b:

Figure 13: a: Treadle wheel (Zug 1986: 141). **b: Kick wheel** (Zug 1986: 139).

their fingers to smooth out rough edges or ridges on the vessel body, or when applying handles or decorations.

4.4.3 The Relevance of Salt

One of the ceramic traditions that the new immigrants brought with them to America was the use of salt glaze. Developed in the fifteenth century, the technique was utilized because it was uncomplicated, reasonably inexpensive providing consistent predictable results on pottery (Faulkner 1981). The decision to use salt as a glaze was because it provided reliable, even, and uniform coverage making pottery "food safe" or impenetrable to bacteria. Although salt was the most popular glaze chosen by folk potters, alkaline glazes were also used, but did not become as popular as salt glaze until the mid 1800s.

Alkaline glaze is dependant upon the alkalines (sodium, potassium, or lithium) as a flux and was first used in Egypt, Mesopotamia, and China (Conrad 1987: 74). This glaze can be used on either earthenware or stoneware, is created from soda ash or borax, and can be either transparent or opaque (Conrad 1987). An oxide such as copper or magnesium can be mixed with the ash, creating colours in the glaze, ranging from blacks and dark browns to blues and reds. Such glazes are applied before a pot enters a kiln, craze easily and are hard to control with heat (Conrad 1987). These difficulties with alkali glazes contributed to the popularity of salt glaze among folk potters (Rhodes 1973). Salt requires little understanding of chemistry, not much control and produces consistent results (Faulkner 1981).

Salt glaze is formed by adding salt into an opening or spy hole of a kiln using iron tools, shovels or organic bags (Conrad 1987; Rhodes 1971; 1973). When the salt hits the interior atmosphere of the kiln, it instantaneously vaporizes, producing soda, hydrochloric acid, and chlorine gases (Conrad 1987: 86). Soda vapours scatter and fuse with the silica in the clay forming a thin glossy coating (Conrad 1987; Rhodes 1973). The toxic and dangerous chlorine and hydro-chloric acid fumes are exhausted out of the chimney (Conrad 1987; Rossol 2001). Salt kilns are highly toxic and corrosive, requiring maintenance by means of shovelling out the kiln and fireboxes after each firing. They operate best outside or in well-ventilated areas (Conrad 1987, Rhodes 1973, Rossol 2001; Olsen 2001; Williams et. al. 1978).

Care was taken by kiln tenders after each firing to check the kiln for cracks, sweeping out fragments or debris, examining doors, fire boxes and all structural joinery or hardware associated on or around the kiln. Most pots were loaded into the salt kiln after a bisque firing, but pots can be stacked green, separated by wads or coils of clay rolled in aluminium hydrate which keeps them from fusing to the kiln furniture (Conrad 1987: 86). During an active firing, salt fumes cover all the exposed surfaces in the kiln; however these fumes cannot reach the inside of pots, narrow openings or closed forms. The remedy to this problem is to slip or apply a one-fire glaze to those areas not exposed to the salt (Conrad 1987). After many firings the kiln matures, as salt builds up on kiln walls that eventually cause dripping to occur from the roof or walls. Traditionally, a salt drip was considered damage but today its rarity provides an additional value to vessels (Jacobson 2003). The texture of salt glaze on fired pots has a pebbly finish that resembles an orange peel, which can distort intricate designs (Conrad 1987).

4.4.4 Containing the Fire

The significance of the kiln and all that it could influence was not lost on the experienced potter. Because the kiln required a ton of supplies, man power and time to build, it was the single most important investment a pottery owner would make (Burrison 1995; Dick–Jacobson 2003a, b). The size of the kiln determines the pace a pottery business can achieve; because once it is built it can not be amended. Therefore, the location of the kiln within a particular market would essentially determine the success of the business. The following list will give the reader a rough idea of cost and materials involved with the construction of Sid Luck's ground hog salt kiln (Table 2). The reader must use their historic imagination while reviewing the supplies involved in the construction as it compares to the investment needed to build a similar kiln during the mid-nineteenth century. The cost does not include any of the free labour or recycled supplies from a previous Luck family kiln, both of which were common practices within the culture (Dick – Jacobson 2003a, b). This list is by no means precise but it does have enough information to provide answers to many questions regarding the size, commitment, and the skill of folk potters. It also speaks about the investment of time and money required to get a kiln up and running. Obviously, industrial sites would be larger in every way.

Two types of kilns became popular in the eastern and mid-western United States in the nineteenth century: the rectangular "groundhog" kiln and variations of the circular updraft kiln. Two popular styles of the circular updraft kiln were the "beehive" and the

Table 2: Inventory list of Goods and Supplies for the Luck's Ground Hog Kiln, built 2003

Materials:	**Cost (USD)**
5540 bricks @ 1.25 each	6925.00
36 five gallon buckets of mortar @ 22.00 each	792.00
1 re-used wooden shed with tin roof to cover kiln	800.00
1 retaining wall:	
labour	600.00
poured cement for wall	200.00
bricks for retaining wall	200.00
6 saw blades @ 22.00 each	140.00
15 refractory brick grates @ 8.50	127.50
Miscellaneous Supplies:	
steel wedges, tools (trowel, drills, etc.)	300.00
1 sump pump	50.00
1 concrete tile cover to protect sump pump	50.00
1 load of gravel for foundation and walk ways	50.00
wiring and lighting	52.00
APPROXIMATE TOTAL COST OF KILN	**10, 286.50**

Source: Sid Luck's ground hog salt kiln in Seagrove, North Carolina in 2003 (Dick-Jacobson 2003).

"bottleneck" (Mansberger 1997; Walthall et. al. 1991) (Figure 14). The semi-subterranean rectangular shaped groundhog kiln "has been documented all along the eastern seaboard for both earthenware and stoneware production" and was a common type, used by German immigrant potters (Mansberger 1997: 96). Bottle kilns were popular with English immigrants and Caldwell used this style (Rhodes 1971; Mansberger 1997; Walthall et. al. 1991) (Figure 15a, b).

A kiln also required labour to stack it, maintain it, and tend the firing for days at a time. Firing a bottle kiln was an exhausting and time consuming job, requiring more than one man to supervise or stoke its fireboxes with wood until the desired temperature was achieved. The bottle kiln relies on hot gases to pass "directly through the chamber floor, around the ware stacked in the chamber, and directly out of the ceiling of the chamber, which acts as the chimney" (Mansberger 1997: 95). These kilns are notorious for having hot spots which contribute to paste variations. The style of the kiln employed at a pottery factory differed from place to place and potter to potter. It was a decision based upon the ethnicity of the potter or kiln builders and their experience within the industry.

Another way the potter controlled his kiln and protected his investment was through the use of kiln furniture. Kiln furniture enabled the potter to secure, separate and stabilize the ware that was to be fired in the kiln. Stacking a bottleneck kiln would have been a precarious job requiring common sense, experience and patience from the potter. Obviously, with all the types of ware a pottery could produce daily, it all would have to go into the kiln at the same time. Therefore, it was important to stack the pots with the heaviest on the bottom and lightest on the top, all the while trying to use all of the available space inside the kiln.

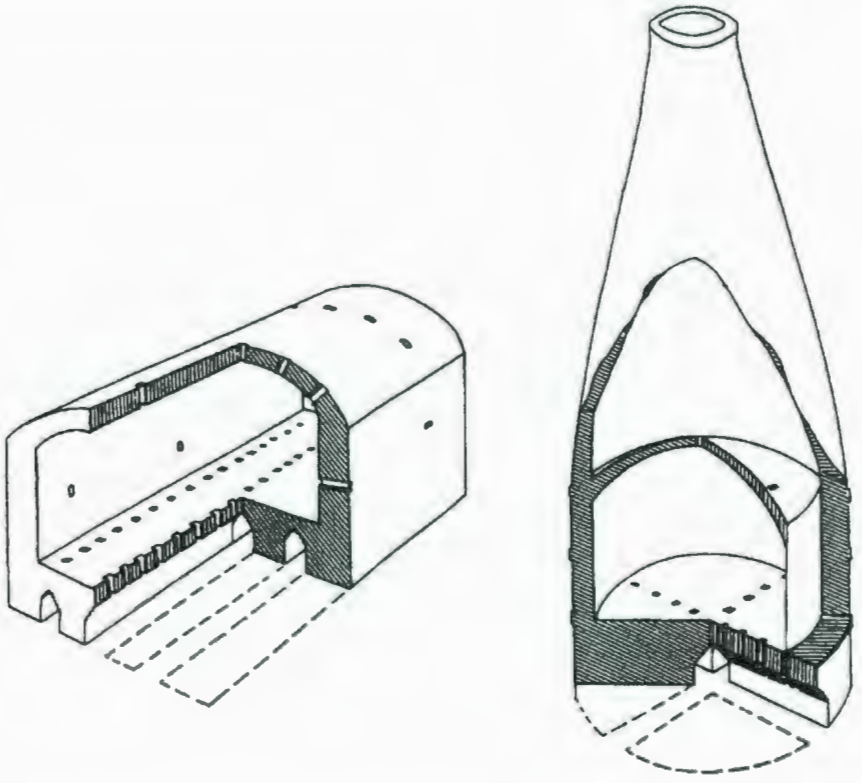
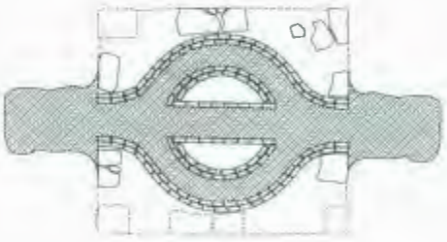


Figure 14: Popular American updraft kilns.

Left: Rectangular Kiln "ground hog" Right: Upright kiln "bottle" (Mansberger 1997: 97).

a:



b:

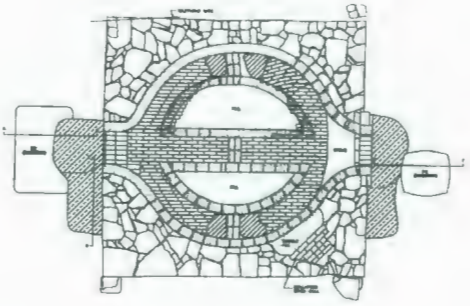


Figure 15: Bottle kiln footprints.

a: Early redware. b: Late redware (Mansberger 1997: 99).

Setting tiles, separators and stilts were used to place all items in balanced and level position. If stacked items were not balanced properly they would tilt and fall as clay contracted. Some items would crack when slightly tilted and others would collapse because of weight. If kilns were not stacked correctly, it was possible to lose a weeks productivity from damage due to improper stacking (Guappone 1977: 7).

4.5 Summary

The lasting legacy of folk pottery can be seen and interpreted from artefacts, felt in the existing culture and echoed in the continuing foundation of American history. Modern folk potters hold this history in their hands when they pick up a vessel that is decades old and have been apart of their family for generations. Researchers have been able to use these vessels to compare their distinct qualities to those found and identify their similarities. Each region in America has its own distinct style of folk pottery but all reflect America's early struggles and challenges, in the forms that were produced. Folk pots filled a need for consumers.

The literature review was designed to provide historical context for understanding who Newton G. Caldwell may have been, his experience in pottery making, the decisions he made in both the kiln he employed and the vessels he built. Science provides the identity of the vessels but it is history that recreates the circumstances that existed at the time the vessels were being produced. This history offers support by verifying a pots use, its placement within the home and the value to the consumer.

The artefacts presented in the next chapter are not just scientific data; they are also a chronological marker of time as a component of pottery's history in America. Like Newton G. Caldwell, each potter researched from historical obscurity brings a new perspective to one of America's earliest industries (Burrison 1995; Wigginton et. al.1984; Baldwin 1993). Men passed down the stories of kiln firings to their children and grandchildren, enslaved African Americans built pottery for their masters and their culture, women and children worked alongside their spouses or fathers; men existing as "gypsy" transient potters turned until the work ran out and those lucky few who married into a pottery family gained access into an elite unique group of craftsmen (Baldwin 1993; Burrison 1995; Mack 2006; van Ravenswaay 1977; Wigginton et. al. 1984; Zug 1986). Such sources, combined with archaeology, real life experience, and the ceramics themselves, provide a compelling addition to the history of the folk pottery industry.

Chapter V

Results

5.1 Introduction

The comparative and predictable relationship between the vessel fragments and kiln implements has the potential to create a regionally distinctive analytical comparison. In order to expose the kinetic relationship between potters and their consumers, the production of their ware, or use of the kiln implements that support pottery in the kiln the data must be identified and generated. The purpose of this research is exploratory in nature designed to generate forms and their frequency, use, style and method of production. The statistics generated through the analysis exposes the decisions made by potters at the Caldwell site. Because these data is the first of their kind in Missouri, they must exist over and above the artefacts excavated from the site. Only then can these data be used to understand how it exists compared to other historic pottery factories in America. Standardization of forms, potters roles or responsibilities, the needs of the consumer, historic placement and the implementation of vessels and kiln furniture are defined in this chapter as they relate to the Arrow Rock Pottery. Regionally specific information on these artefacts could be part of future research outside of the scope of this thesis.

The total sample of 853 stoneware potsherds used in this study consists of 547 consumer vessel fragments and 306 pieces of kiln implements. The analysis of the these artefacts revealed that the Arrow Rock Pottery primarily produced functional vessels, such as jars, crocks, bowls, jugs and bottles of various sizes (Table 3). Caldwell's pottery

is historically, physically and stylistically similar to artefacts found at other current archaeological or historic sites that have presented ceramic remains as representations of American folk pottery from Alabama, the Carolina's, Georgia, Illinois and Tennessee. The ceramic artefacts found at the Caldwell site share many of the qualities identified through the artefacts discovered by similar historic and archaeological studies. The use, shape, function, modification of kiln furniture or decorations become measurable attributes that establishes the identity of ceramics produced at the Arrow Rock Pottery factory in the nineteenth century (Burrison 1995; Carnes-McNaughton 1995; Faulkner 1981; Sweezy 1994; Walthall et. al. 1991; Zug 1986).

A total of 853 sherds have been analyzed and an example of each form will be presented below alongside their descriptions and archaeological relevance. Photographs have been used in conjunction with the archaeological descriptions to facilitate inferences about specific hand tools or methods that may have been used to create or modify the pot. Faulkner (1981) cautions that interpretations drawn from artefacts found in waster dumps may not accurately portray the overall operation and production of vessels at an archaeological site. Artefacts found could be a pile of broken vessels from one bad firing rather than one or two broken vessels from firings over a year's time span. Archaeology must recognize this warning and avoid misinterpretation based on incomplete data. The information that has been prepared to support the following analysis is only the results of the choices made by the mid-nineteenth-century potter through the broken pots left behind. What is absent from this analysis is the story of the complete pot and the makers individual motives for the choices they made during their lifetime.

Table 3: Ceramic Forms Found at the Caldwell Pottery Factory.

Kiln Furniture / Utensils	Jar	Indeterminate	Bowl	Jug	Bottle	Drain Pipe	Lid
306	241	201	65	23	8	5	4

Total n = 853

5.2 Components of the Pot

A vessel has three basic parts: the orifice, body or base. It is the relationship between these three required parts of the pot that determines its construction, functionality, practicality and overall shape category (Rice 2005: 12). The orifice or opening of a vessel is connected to the body and the body is connected to the base or foot. It is the manipulation of each connection between the individual parts that creates additional features such as a neck, throat, shoulder, spout or defined foot. The size of the orifice, neck and body of a pot determine its general function. Because pots come in a variety of shapes the orifice is used to determine the diameter of the opening with a rim diameter template. However, the diameter of the opening is just that. Large or small, the opening, mouth or spout does not determine storage capacity. The rim is another diagnostic element, for they were manipulated according to the function of the pot. The base or foot of a vessel rests directly upon a surface and can exhibit either a foot ring or flat bottom. Forms can be further embellished through the addition of handles, marks, designs or decoration. Figure 16 has been included as an aid to understanding the following illustrations of the ceramic artefacts found at the Caldwell site. This key illustrates the different parts of a ceramic vessel, its profile archaeologically, and wall thickness (Figure 16). A solid black profile is the parts of the ceramic vessels that exist as an artefact. Dashed or dotted lines protruding from these solid representations are the suggested remaining shape or thickness of missing artefact. Any sections on illustrations that are left white are chipped or broken pieces found on the artefact.

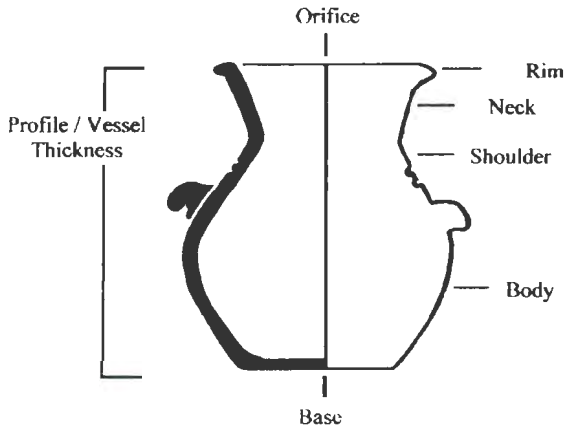


Figure 16: Parts of the Pot (Drawn by Dick – Jacobson).

Modified from Rice's subdivisions of pottery vessels shapes (2005: 213).

The Caldwell sample of pot sherds were a mix of bases, rims, handles, spouts, and body sherds. Some of these artefacts were painted, incised, stamped or marked. The following categories, based on use and function, have been applied to the consumer vessels produced at the Arrow Rock pottery, as documented by their makers, users and historic references (Rice 2005). The visual descriptions of form were adopted from Walthall et. al. (1991).

5.3 Vessel Rims: Diagnostic Forms (n = 320)

The rim of a vessel can be easily taken for granted but is one of the most important parts of a pot. It is the part of a vessel between the lip and the neck (Rice 2005: 481). A rim performs an important function by providing unseen strength to a pot, so that it is able to withstand the rigors of use. Dangers such as bumping a table or wall while lifting it onto a counter, the pressure of a tightening wire or string around it so cheesecloth can be held into place are just a couple of reasons why rims are so important. In terms of ceramic analysis, the rim is a very important diagnostic aspect capable of informing the style, size and overall appearance of ceramic artefacts.

This diagnostic element can be directly attached to the neck of a vessel with no visual differences seen between the rim and shoulder. Rims are made in the final phase of throwing a vessel by compressing the spinning clay at the top or mouth of a pot with the fingers or shaped using wooden rim chips or sticks. Chips or rim sticks would have been a common nineteenth century tool at folk pottery factories acting. They served as templates, creating standard and consistent rim forms, thus speeding up production time (Figure 19).

A total of 320 rim sherds were found in the Caldwell sample (Table 4). Eight different rims and associated profiles have been identified in the Caldwell sample, based on sherds identified at the Warnack site (Walthall et. al. 1991) (Figure 17). The rim variations discussed below have one of these exterior treatments, but vary from pot to pot. However, certain Caldwell vessel forms, specifically jars, consistently exhibit these treatments and are usually necked with either a ridged or shelved cordon (Figure 18). The Ulrich-Wietfeld assemblages also display these features and have been used to identify similar necked sherds found in the Caldwell sample (Walthall et. al. 1991: 13). Descriptions of these forms have been provided by this study. Many variations of a specific type of rim form (e.g. a square bolster) exist. This deviation is expected and acceptable, as these differences occur because of simple actions such as using a shammy or finger a little longer on the edge of a rim, changing it from a square bolster into a round one in a few spins of the pot.

Exterior Treatments on Vessels (n = 102)

An exterior treatment is the result of additional manipulation of the shoulder and the neck of a vessel, produced on a turning wheel and seen as small additional rings of clay, just under the rim of pot (Figure 18). These small shelves, ridges or grooves work to hold various items such as cheesecloth tied with strings, animal skins or linens to the vessel securely by providing a feature for such items to rest in or under. Some treatments are subtle while others vessels have a combination (Walthall et. al. 1991). The rim variations discussed below have these exterior treatments alone or in combination with

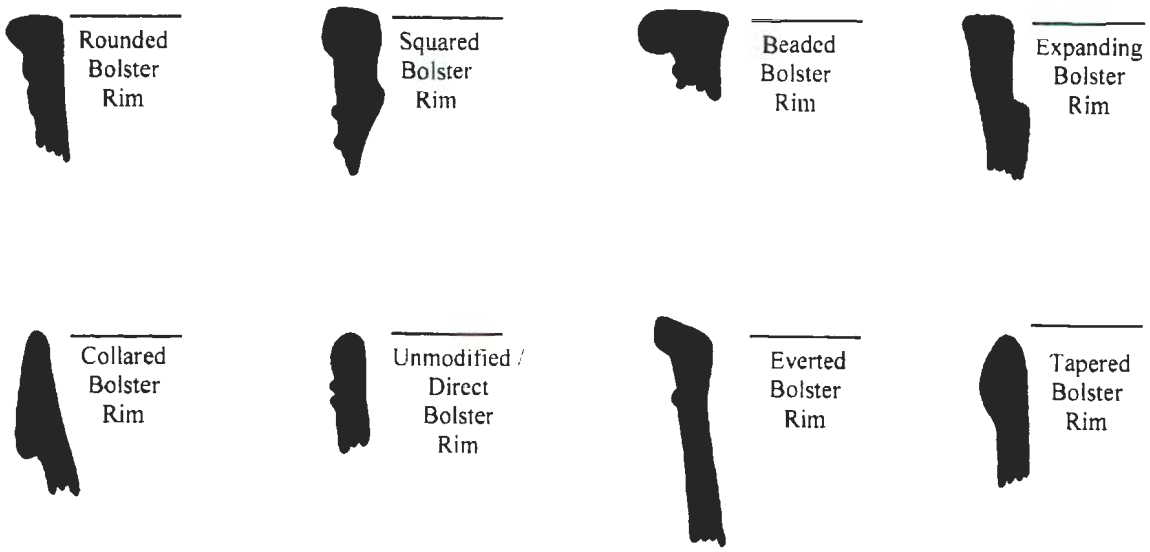


Figure 17: Eight rim forms identified at the Caldwell Pottery Factory site (Drawn by Dick-Jacobson).

These profiles have been formatted after the types identified at the Warnack and Upper Alton sites (Walthall et. al. 1991: 13).

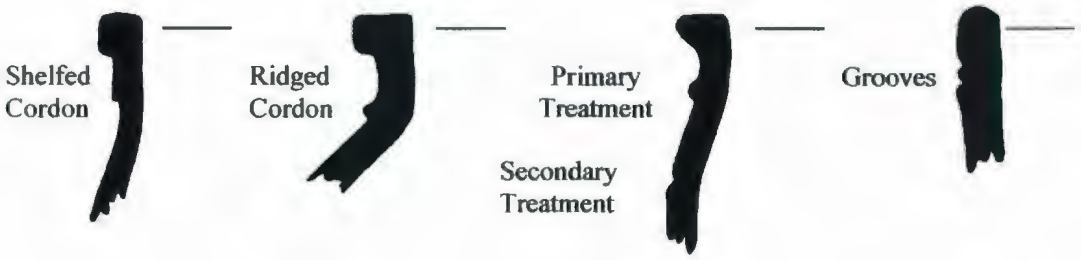


Figure 18: Exterior treatment profiles found at the Caldwell Site

These profiles have been formatted from the types identified at the Warnack and Upper Alton sites (Walthall et. al. 1991: 13).

Figure 19: A collection of notched wooden chips used to shape rim profiles (Webster 1971: 46).

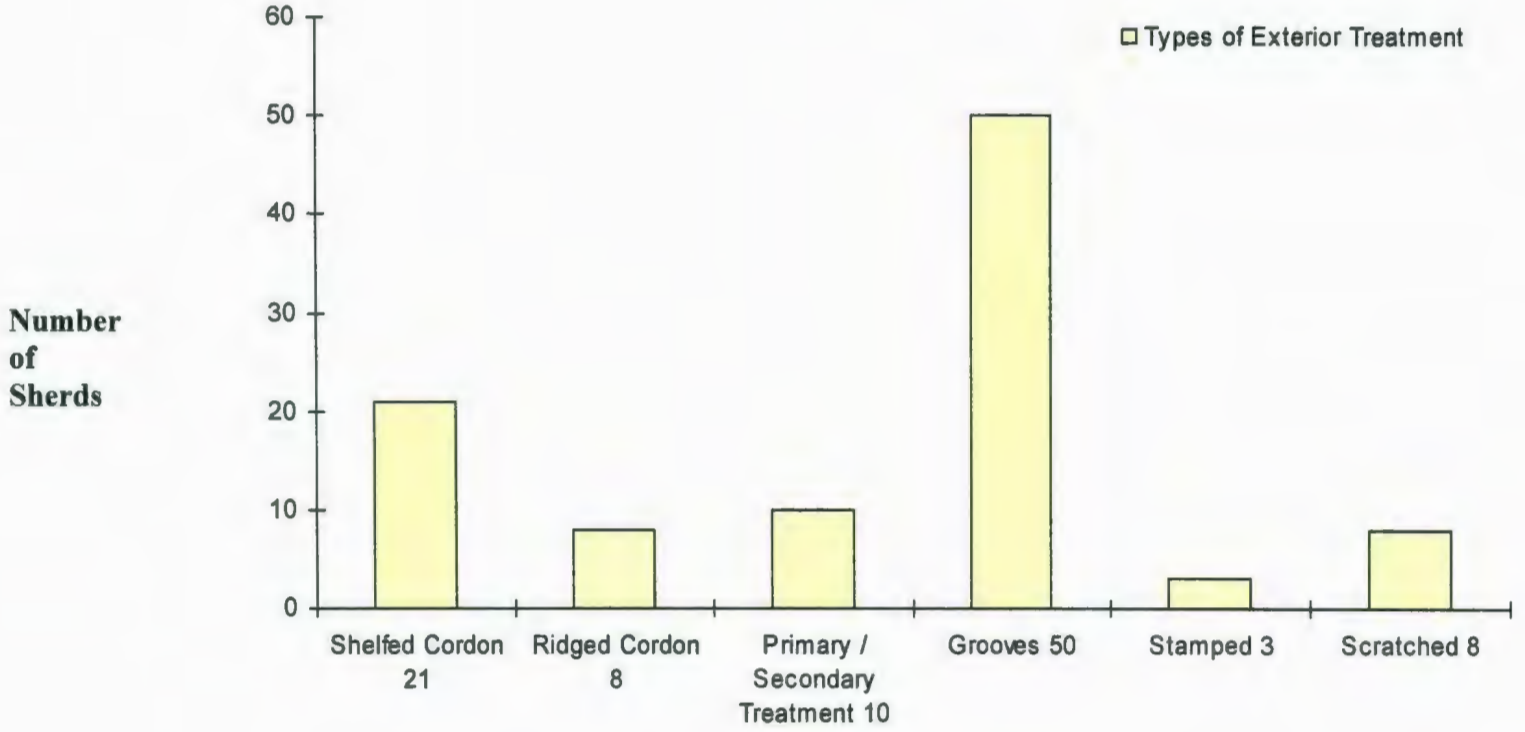


Figure 20: Caldwell sherds with exterior treatments.

each other. These rings vary from pot to pot; however, certain Caldwell vessel forms — jars — consistently exhibit these treatments and are usually necked with either a ridged or shelved cordon.

Methods used to Measure the Caldwell Rims

Walthall et. al. outline how to measure small rim sherds for stylistic variables of size or exterior treatment (1991: 32) (Appendix 2). The following method was used:

1. Orifice diameter in cm was measured from outer lip margins.
2. Rim width in cm was measured form the interior to the exterior.
3. Wall thickness in cm was measured on the body, below the swelling of the rim.
4. Rim height was measured in cm from the lip crest to the base of the swelling of the rim.
5. Maximum diameter in cm was calculated with a diameter rim template.

Square Bolster Rim (n = 90 sherds)

The square bolster rim form has a substantial lip, as compared to the everted rim form and is wider in vertical width (Figure 21). The bolstered rims primarily exhibit a squared facet at the rim exterior bottom and top edge of the lip. The second most commonly found rim sherd found in the Caldwell sample with a count of 90 rim sherds.

Rounded Bolster Rim (n = 136 sherds)

The form is similar to the squared bolster rim in terms of protrusion and width, but its rim is rounded versus square in profile (Figure 22). There are similarities between

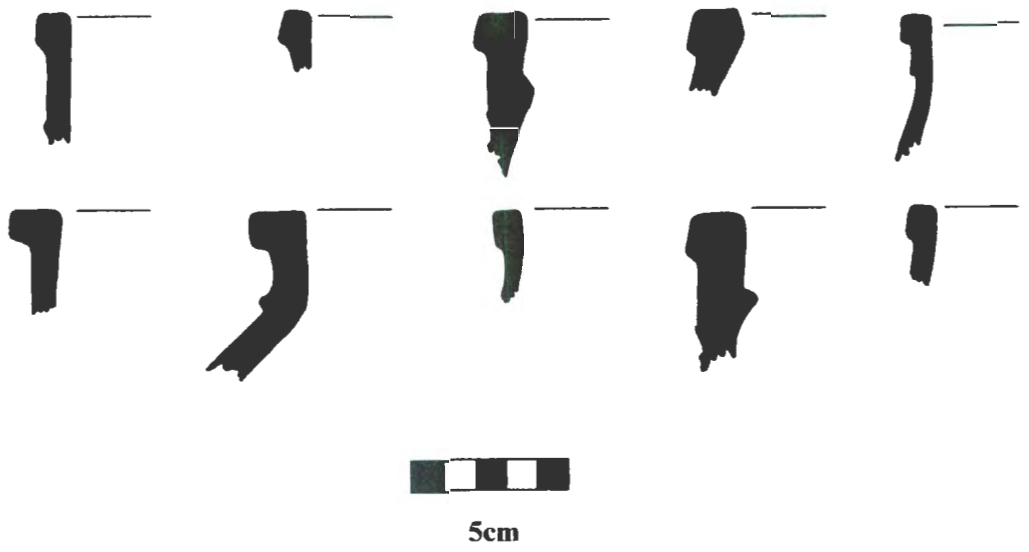


Figure 21: Caldwell square bolster rim form variation (Drawn by Dick-Jacobson).

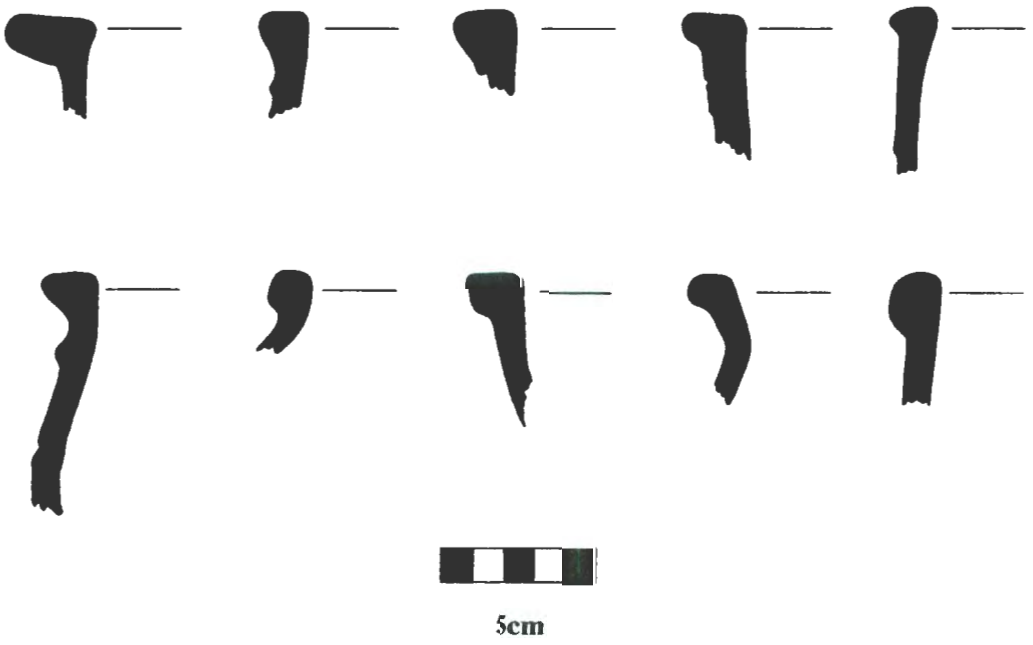


Figure 22: Rounded bolster rim variation (Drawn by Dick-Jacobson).

rounded bolster and everted rims, particularly on the bowl/basin vessel form, the criteria used to determine rounded bolsters was that the rim height is at least one-half the size of the rim width. The Caldwell sample yielded 136 round bolstered rims.

Collared Bowl Rim (n = 28 sherds)

This form is thick, with a considerable width at the bottom of the rim that tapers to the top edge of the lip of the vessel (Figure 23a). These rims appeared on slip cast bowls or shallow walled bowls. The Caldwell sample yielded 28 sherds.

Beaded Bolster Rim (n = 18 sherds)

This rim form is similar to the Rounded Bolstered but it is more round or bead-like, but very obviously pronounced (Figure 23b). 18 sherds were in the Caldwell sample.

Unmodified / Direct Rim (n = 17 sherds)

Direct rims do not exhibit any embellishment or protrusion beyond the vessel wall and are associated with drain pipes, water pipes, small jars, sealers or bowls (Figure 23c). A total of 17 such rims were found in the Caldwell sample.

Everted Rim (n = 15 sherds)

In this form, the rim form protrudes beyond the exterior vessel wall and is slightly tapered or rounded (Figure 23d). These rim forms were consistent with small jars. 15 such sherds were found in the Caldwell sample.

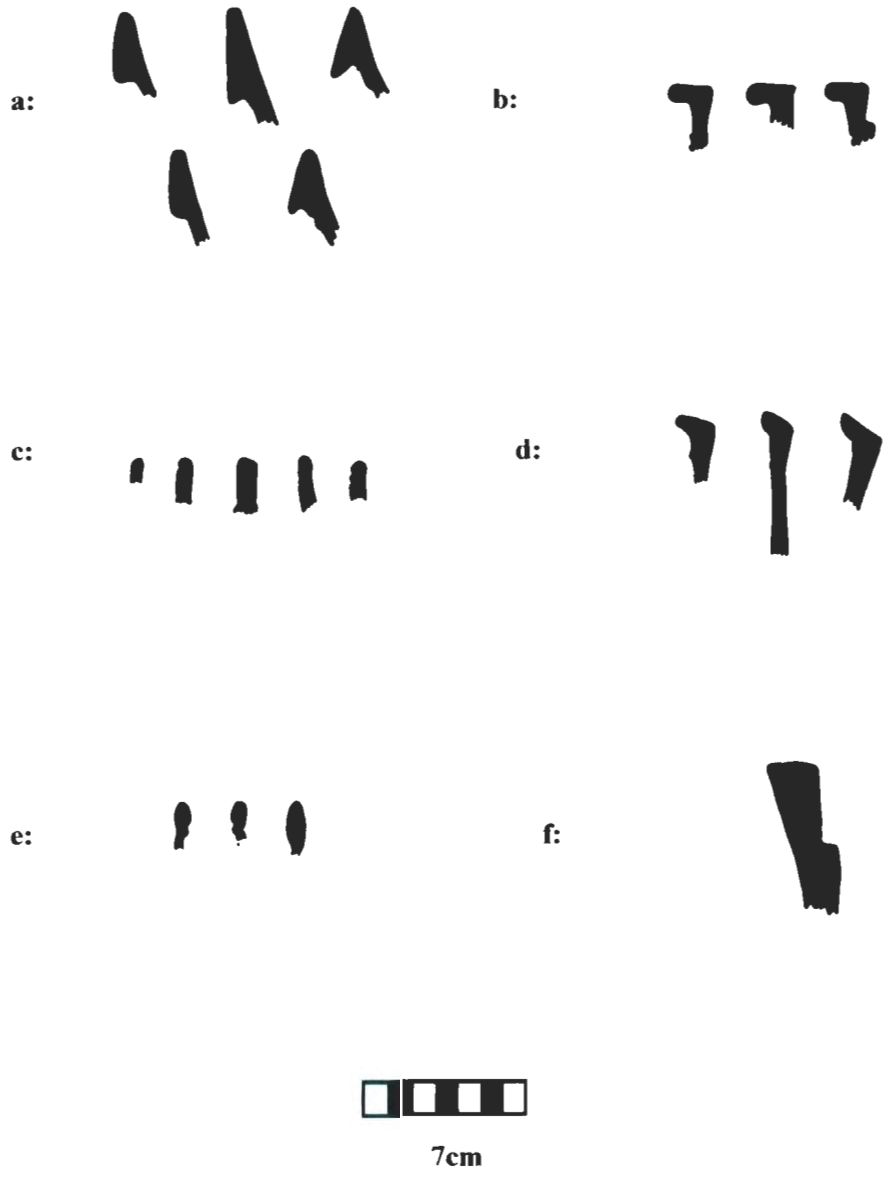


Figure 23: a: Collared rim variation b: Beaded bolster rim variation. c: Unmodified / Direct rim variation. The rim sherd in the middle of this sample may be from a water pipe (Zug 1986: 353). **d: Everted rim variation. e: Tapered bolster rim with variations. f: Expanding rim** (Rims drawn by Dick-Jacobson).

Tapered Bolster Rim (n = 3 sherds)

This bolster form is essentially rounded, but is slightly tapered inward at the top edge of the rim lip (Figure 23e). A total of three sherds were found in the Caldwell sample.

Expanding Rim (n = 2 sherds)

This form exhibits an expanding or swollen margin without a distinct exterior protrusion from the vessel body (Figure 23f). This rim is distinctly the receiving end of a drain pipe.

Indeterminate / Indt. (n = 11 sherds)

This category includes any fragments of rims that did not have enough diagnostic elements to determine an exact profile into one of the above categories for reasons such as breakage.

5.4 Caldwell's Pots: Vessel Types and Forms

Jars (n = 241 sherds)

Caldwell's sample of jar sherds were grouped into one of six categories of jar forms established in Walthall et al (1991): straight-walled, necked, incurved, shelved, cylindrical and indeterminate "Indt". The jar was the most versatile of the forms identified. They came in many sizes to prepare, or store edible or non edible goods. They could be sealed for freshness or left open.

Table 4: Count of Jar and Bowl Rim Forms at the Caldwell Pottery Factory.

Rim Forms	Total Rims
Rounded Bolster	136
Square Bolster	90
Collared	28
Beaded Bolster	18
Unmodified / Direct Rim	17
Everted	15
Indeterminate	11
Tapered	3
Expanding	2

Total n = 320

Straight- Walled Jar (n = 165 sherds)

These vessels range between slightly rounded to cylindrical or straight-walled wide-mouthed jars with the opening nearly as wide as the vessel body. Some have a very shallow neck or shoulder and some have a rather straight vertical wall creating a cylindrical shape, with or without a lug handle (Walthall et al. 1991) (Figure 24a and 24b). The straight-walled jars commonly exhibited a round bolstered rim, but it was not uncommon to see other styles of rims on forms as well. The jars were salt glazed on the outside and slipped brown on the interior of the pot. Exterior treatments ranged from grooves, painting and freehand scratches.

The literature explains that jars were made anywhere between ½ gallon up to 20 gallon (Guillard 1971; Zug 1986). The sample of straight-walled jars from the Caldwell site is large enough that they can be broken down into different sizes, based on orifice diameter, creating a list of extrapolated forms produced at the Arrow Rock Pottery. The orifice diameters of the Caldwell straight-walled jar sherds range between 5 and 35cm (Figure 25). Using information found in historic texts that include price lists, inventory lists and various marked jars, found in antique stores, were used as comparative data to identify orifice diameters of similar vessels and matching them to those identified in the Caldwell sample (Figure 26)(Appendix 4). Historic sources reveal that an average 4 gallon jar has an orifice diameter of approximately 24 cm. Leaving room for deviation in vessel size, due to human error in hand throwing, could mean that any pot with an orifice diameter of 23, 24, or 25 cm is still classified as a 4 gallon jar. The common names attached to this all purpose form is coffee jar, lard crock, cookie or butter pot, wax sealer, fruit or pickle jars.

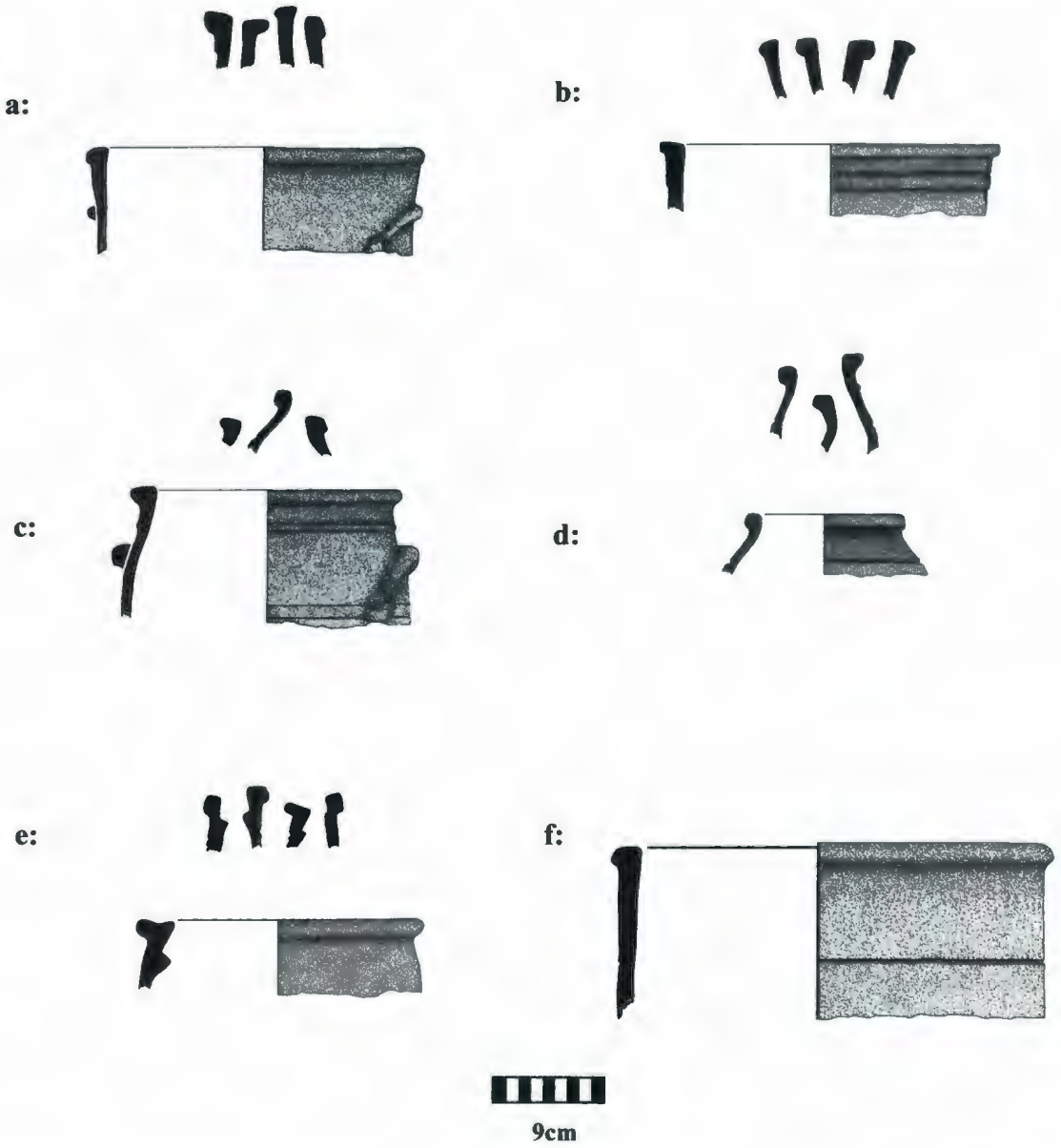
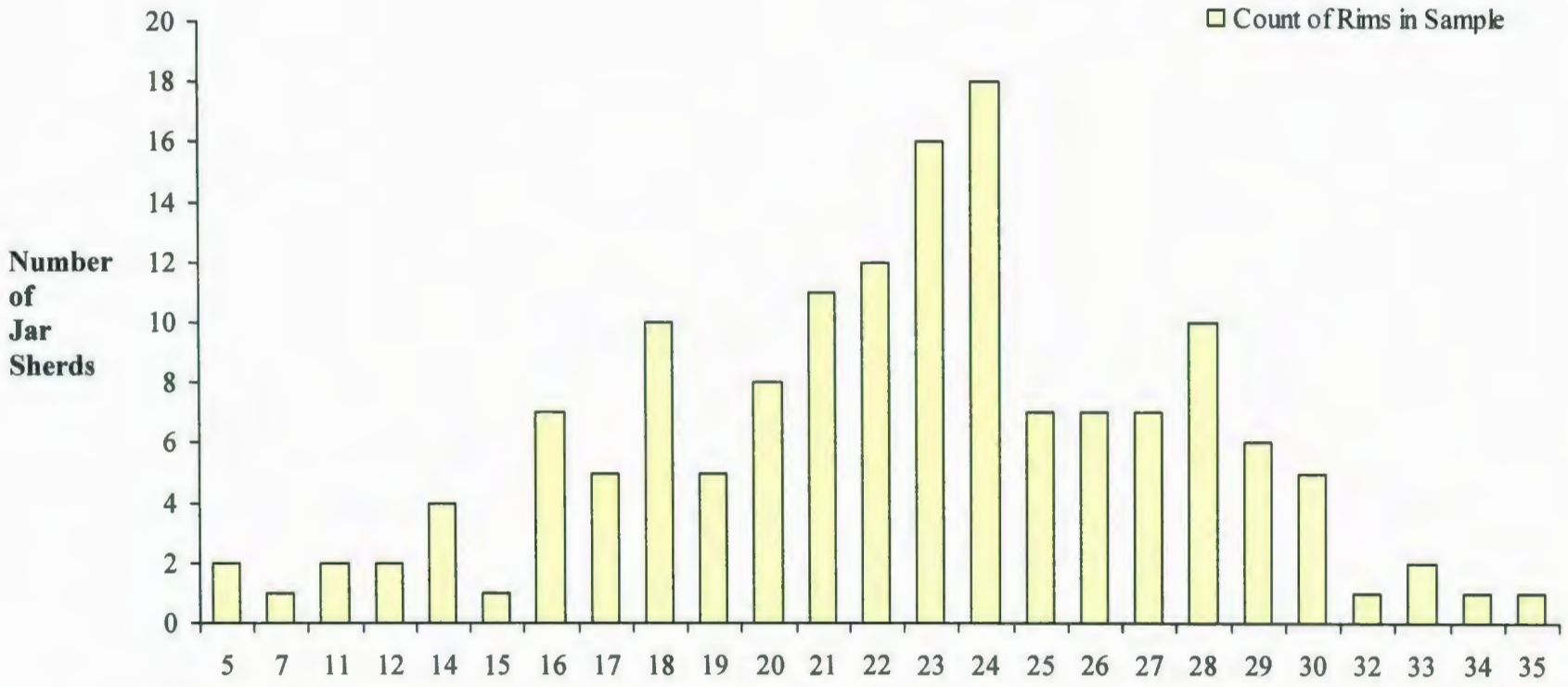
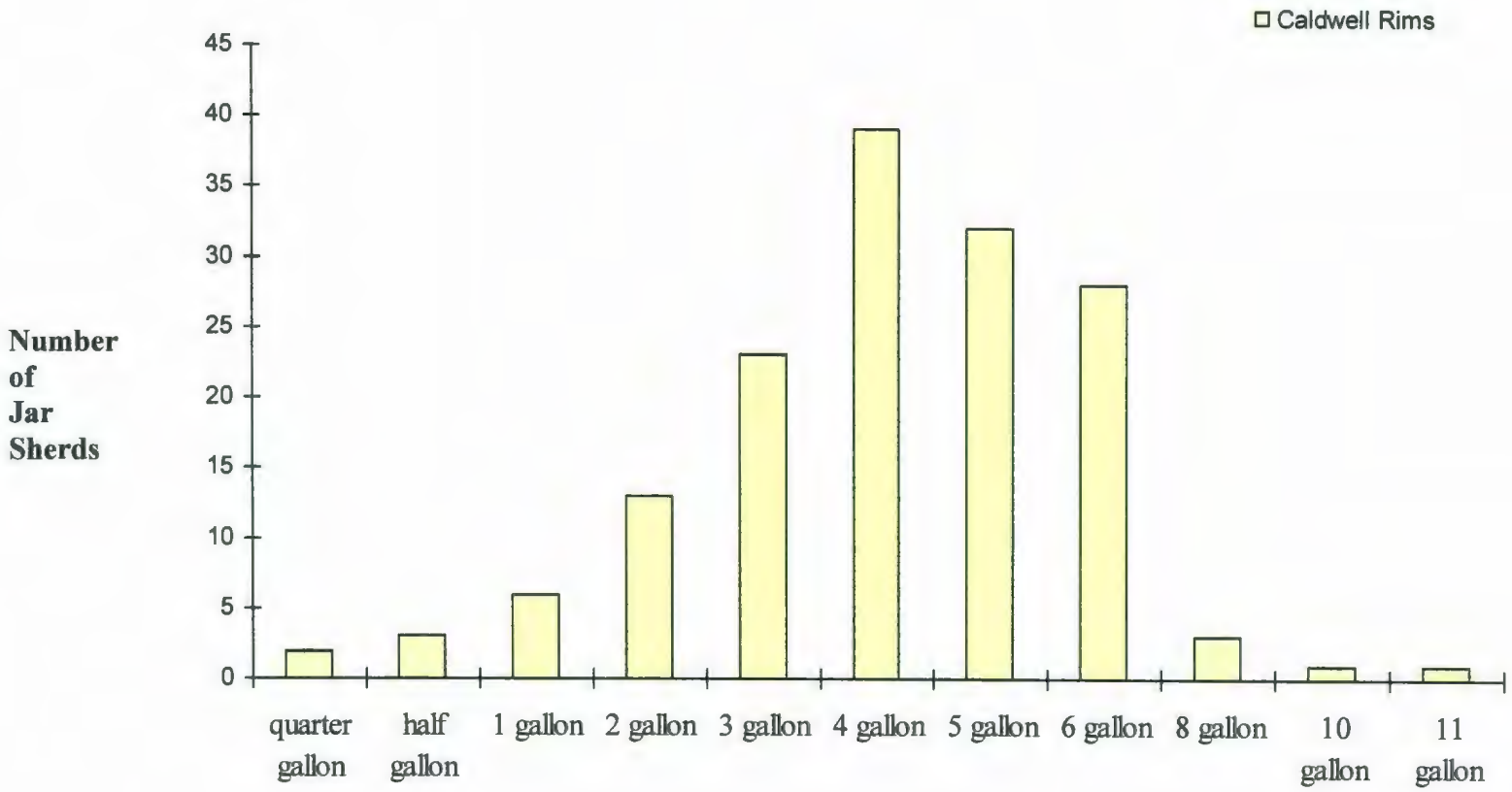


Figure 24: Caldwell Jars with profile, and rim variations. a: Straight-walled jar with no exterior treatment. b: Straight-walled jar with exterior treatment. c: Necked jar with a shelved cordon, lug handle, and exterior grooves. d: Incurved jar with one groove. e: Shelved jar. f: Cylindrical jar with one groove (Drawn by Dick-Jacobson).



Counts of Jar Orifice Diameters, Range 5 to 35cm (n = 165 sherds).

Figure 25: Caldwell straight-walled jar orifice diameters.



Counts of Gallon Sizes, Ranging from ¼ to 11 gallon (n = 165 sherds).

Figure 26: Gallon sizes for Caldwell straight-walled jars.

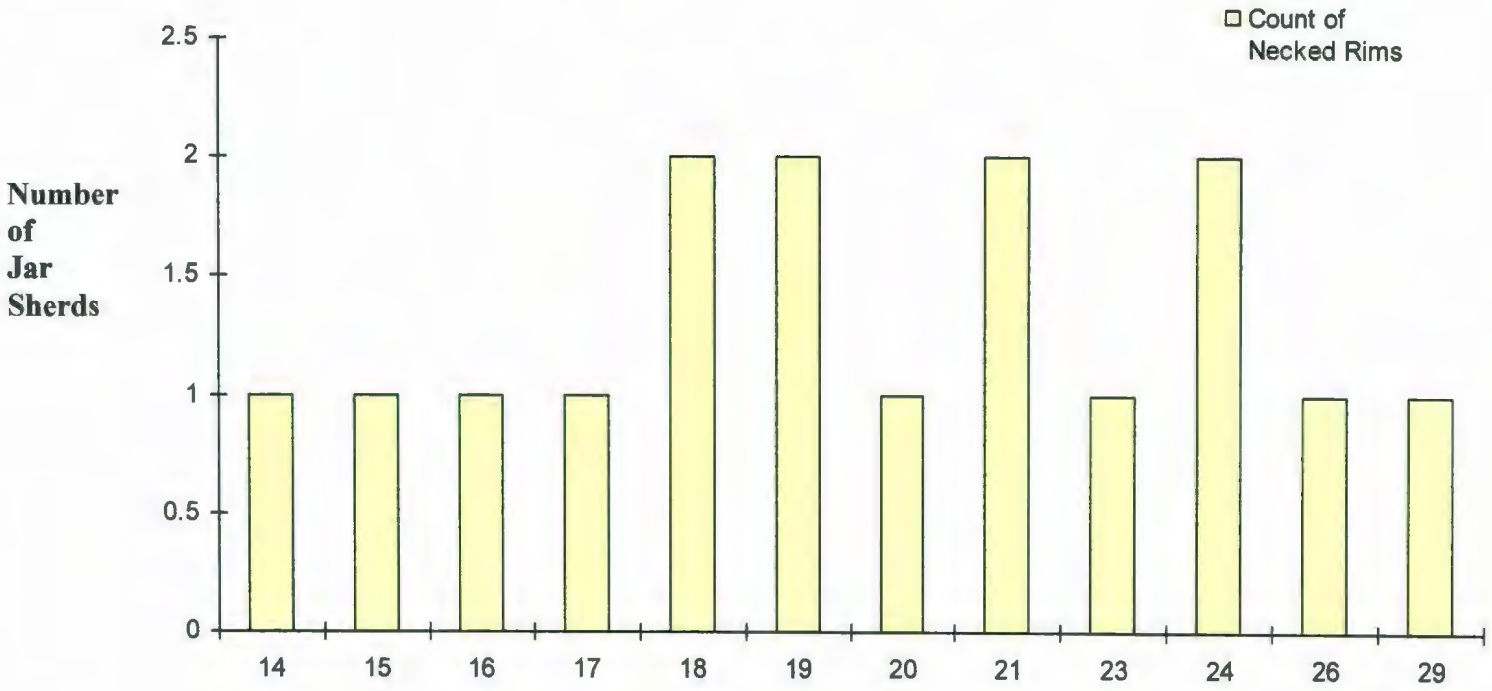
Sources show that butter jars were most commonly handled. The Caldwell sample identified 165 jar sherds.

Necked Jar (n =16 sherds)

The necked jar is distinctive, with a neck exhibiting incised treatments in the form of shelved cordons and grooves between the rim and the shoulder (Figure 24). The shoulder is larger than the diameter of the rim creating a bulbous shape. Necked forms commonly exhibited the square bolstered rim and may or may not have had lug handles. Orifice diameters ranged between 12 and 29cm, with an average of 15cm (Figure 27). These jars were all-purpose, used in storage and preservation. The Caldwell sample yielded 16 examples, making this form the second most common. Using the method of the previous section, we learn that the orifice diameters reveal that Caldwell produced various sizes from preserve jars up to five gallon cream pots.

Incurved Jars (n = 11 sherds)

Incurved jars are similar to necked jars, with a shoulder diameter larger than the rim diameter, creating a bulbous shape. However, the neck is almost never altered with grooves, or exterior treatments such as a ridged cordon. This jar form is identified by a slight incurve of the upper body that is not as pronounced as it is on the necked jars (Figure 24d). The orifice diameters range from 12 to 26 cm (Figure 28). Caldwell sample yielded 11 sherds.



Count of Jar Orifice Diameters, Range 12 to 29cm (n = 16 sherds).

Figure 27: Counts of Caldwell necked jar orifice diameters.

Shelved Jar / Churn (n = 14 sherds)

This jar form has a ledge of clay built onto the interior wall of the mouth, attached to the lip, creating a shelf to support a lid (Figure 24e). Larger vessels of this type are commonly known as churns and smaller ones have been interpreted as small jars, or covered butter pots (Walthall et. al. 1991). Churns were taller and straighter in form, with or without lug handles. Two types of ceramic lids were used with churns, the jug lid and the saucer lid (Zug 1986). Of all the vessels produced in the nineteenth century, this form was very specific to the potteries that made them and differed from shop to shop (Zug 1986). The butter churn had a prominent position in the home for the consumer because of what the churn was capable of doing, as well as, the frequency of its use. These factors allowed the potter to create an object that could use in marketing the pottery shop to whip up some new customers. If a churn was practical, durable and appealing it could be implied that all of the other ware made by the potter was of the same high standard of quality. A total of 12 shelved sherds were identified within the Caldwell sample various diameters (Figure 29).

Cylindrical Jars / Crocks (n = 4 sherds)

This form became popular as industrialization moved into America and commercialized wares began to fill merchant shelves (Zug 1986). "Over the years the shape of the jar gradually evolved from the globular creations…to the perfect cylinder" (Zug 1986: 299). The cylindrical jar form has been described as vertical – walled, versatile and could be produced by hand, a jig or the combination of a mold and jig

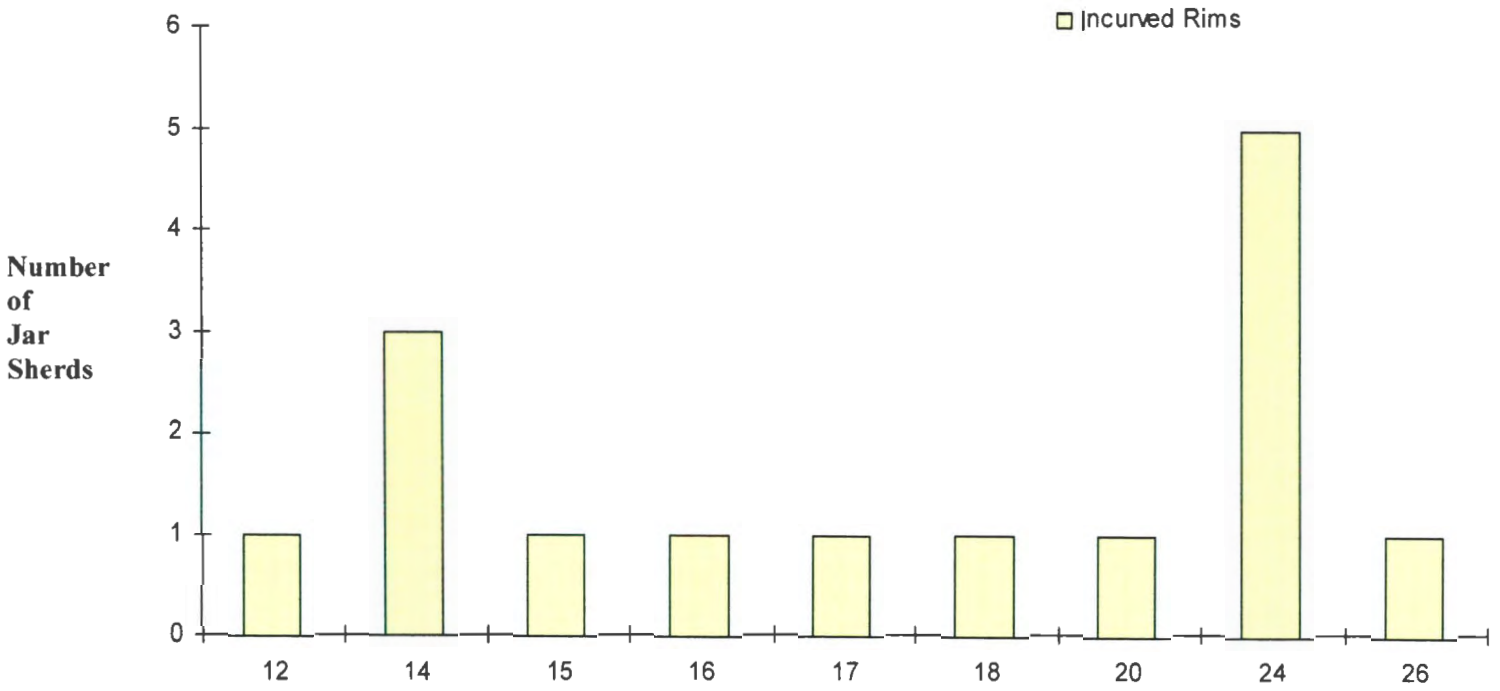


Figure 28: Counts of Caldwell incurved jar orifice diameters.

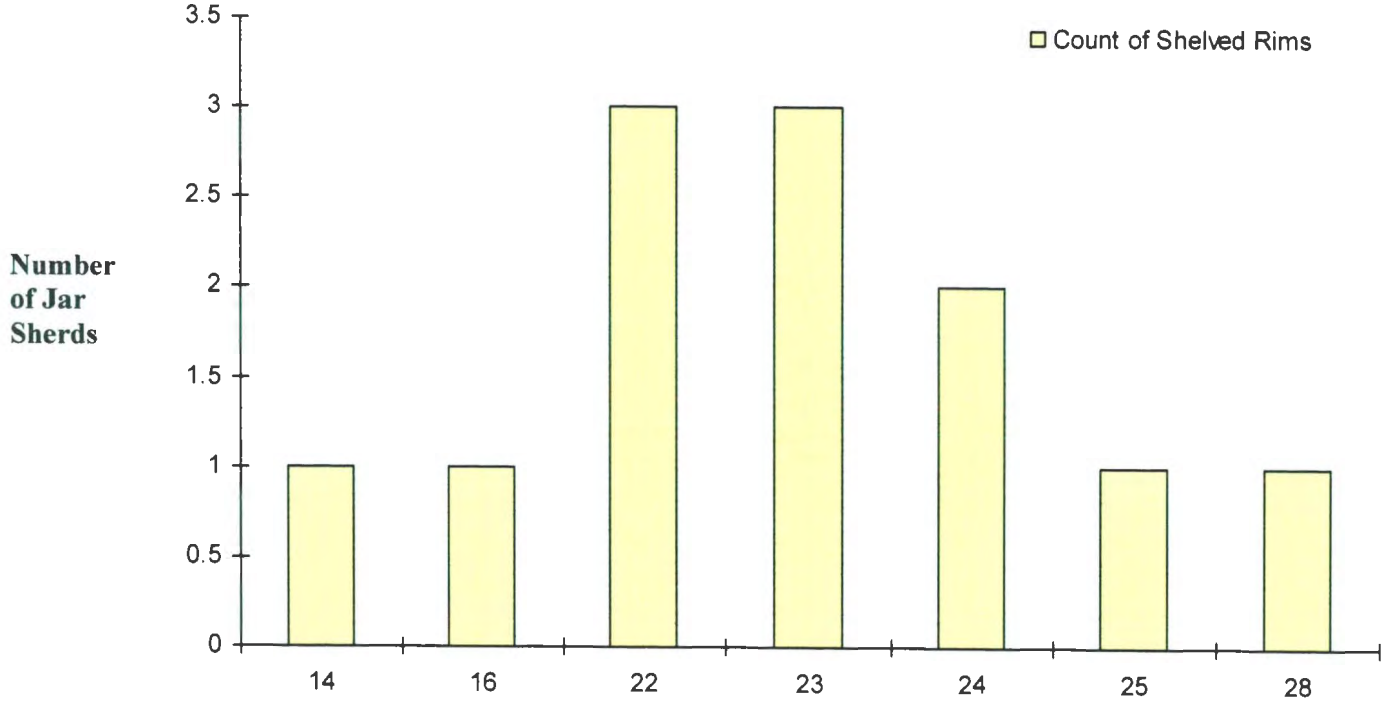


Figure 29: Counts of Caldwell shelved jar orifice diameters.

(Walthall et al. 1991; Zug 1986) (Figure 24f). Due to the simplicity of the form, the cylinder could be pulled off the wheel earlier saving both time and money.

Due to the economic benefits and the generic versatility of the form itself, the cylinder became the most widely produced form at large scale pottery factories, hitting their peak between the late 1870s and 1900s. Smaller local pottery factories had no choice but to make these forms in order to stay competitive. The cylindrical form encapsulates industrialization and is useful in determining time of deposition. The Caldwell sample revealed four sherds of this type from the Arrow Rock Pottery. These forms were different from the rest of the artefacts found in the Caldwell sample, for a number of reasons. First, little attention was paid to the rim of the vessel, whereas the majority of the rims found in the sample were manipulated. Second, the majority of the sherds have brown slip applied to the inside of the pot with salt glaze on the exterior. The Caldwell cylinders do not. They only have salt glaze on both the interior and exterior of the pot. Third, the diameters of the rims from the cylindrical forms produced at the Arrow Rock Pottery are quite large compared to the rest of the sample with crock sizes ranging between eight to eleven gallons. Finally, with the jar being the most popular form produced at the site there are only four artefacts of this kind found and this discrepancy could speak volumes about the environment of the pottery factory during the popularity of the generic cylindrical form.

Indeterminate Jar (n = 14 sherds)

This category is composed of any rim fragments that cannot be assigned to one of the above vessel forms. Fourteen such jar sherds were found at the Caldwell pottery site.

Table 5: Breakdown of Caldwell Jar Forms

Straight-Walled	Indeterminate (Indt.)	Incurved	Necked	Shelved	Cylindrical
165	26	17	16	14	3

Total n = 241

Bowls / Basins (n = 65 sherds)

Like the jar, the bowl was also a popular multi-use form in the nineteenth century. It was used in food preparation, to carry foods around the farm or household, to store eggs or fruit, hold cream or milk, for daily hygiene, domestic dinnertime rituals and commercial businesses. Occasionally, they were used to store non-food items. They were the second most popular vessel form found in the sample from the Caldwell Pottery site. This vessel from was found most often around Arrow Rock, in the town's rain gutters, surface scatters of Block #30 and in streams beds (Baumann 2001; Dick- Jacobson 2001). The Upper Alton report gives the following definitions for the bowl and/or basin forms, as summarized below (Table 6; Figure 30).

Tapered / Collared Slip-Cast Bowls (n= 42 sherds)

This bowl form is round to straight-sided in profile and was thrown in a mold with the use of a jig. These bowls have slight variations in the rim and are commonly termed utility bowls, shallow dishes or milk pans. This is the most popular form found at the Caldwell pottery site, majority of the sherd have been covered in brown slip, with 42 examples (Figure 30c).

Round to Straight Sided Bowl / Basin (n = 21 sherds)

This bowl shape is round to straight-sided in profile and is the second popular form for bowls for both the Warnack site and the Caldwell site (Walthall et. al. 1991). The difference between this type and the tapered collared slip-cast bowls is visible in the rim and building technique. These forms were thrown on a pottery wheel and covered in

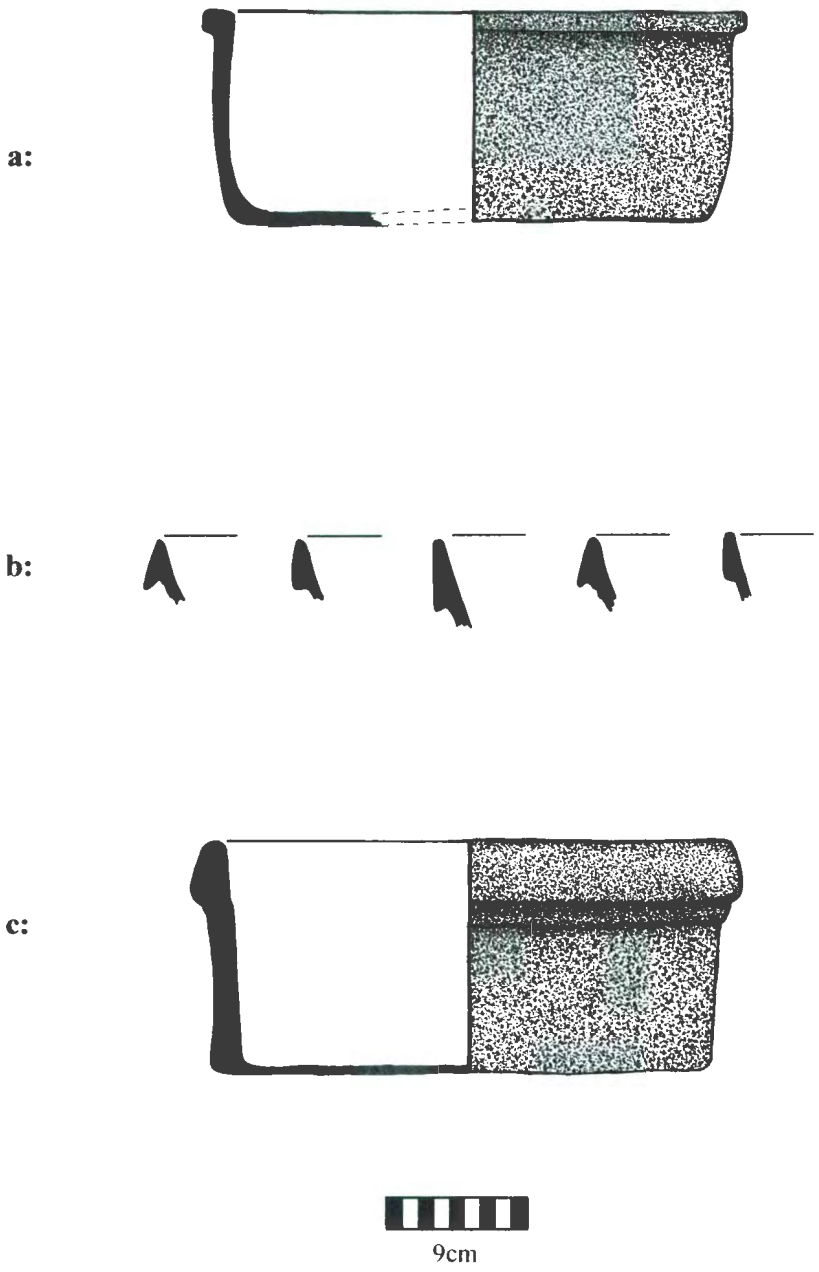


Figure 30: Caldwell Bowls. a: Straight-sided bowl. b: Tapered rim variation for slip–cast bowl. c: Tapered / collared slip-cast bowl (Drawn by Dick-Jacobson).

brown slip. The common names used in the literature to identify these bowls are "milk" or "cream bowls". A total of 21 sherds were identified in the sample (Figure 30a).

Indeterminate Bowl / Basin (n = 2 sherds)

This category includes any sherds that did not fit into one of the above bowl categories. There were two such sherds found in the Caldwell sample.

Incurved Bowl / Basin

This form displays a slight inward curve, usually with a thickened interior facet at the rim. The body of the vessel is occasionally wider than the orifice. There were no sherds of this type identified in the sample.

Bottles (n = 8 sherds)

This form is best described as a container to distribute liquid goods. Stoneware bottles were typically produced as individual quarts, rarely decorated and if markings were present they were usually stamped with a brand name, either on a side or bottom of the vessel (Webster 1971) (Figure 31). Stoneware bottles were more popular in the commercial market than the home. Stoneware bottles kept liquids colder longer than glass, so they were often used to store and serve individual servings of ginger beer or sarsaparilla and refilled as emptied (Webster 1971). Quart bottles were used to store bulk medicinal ingredients then their contents could be transferred to small glass medicinal bottles through a prescription by a doctor (Webster 1971). Unlike today's glass bottle or aluminum can they were not disposed of as casually as they are today. As beautiful as

Table 6: Breakdown of Caldwell Bowl Forms

Tapered –Collared Slip Cast Bowls	Round to Straight-Walled Bowl / Basin	Indeterminate Bowl / Basin	Incurved
42	21	2	0

Total n = 65

these forms were, bottles were time-consuming to make and may be the reason they were made less often than jugs.

Jugs (n = 23 sherds)

The use of stoneware jugs hit its peak during the last quarter of the nineteenth century (Zug 1986: 303). They were designed to store and distribute large quantities of liquid edibles such as vinegars, ciders, wine, corn whiskey, molasses, oils, water and maple syrup (Guillard 1971; Zug 1986). The jug has been described as globular-bodied necked vessels with strap handles attached to both the rim and shoulder of the vessel. Caldwell's sample reveals that the jug was not as common as the jar or bowl (Figure 32). Interestingly, the kiln furniture used to balance this form was a popular type found in the Caldwell sample.

Unlike other vessels, the jug is large and when filled with liquid becomes very heavy and difficult to maneuver. If a jug is not manipulated correctly when filled the handle can be broken off easily. For example, when pouring whiskey from a jug one balances the weight of the vessel in the nook of the elbow and uses the handle to guide the direction and tilt of the spout. The technique is what makes the jug practical; however improper execution of the technique can quickly render the jug more difficult to use. The jug was such a common fixture in the nineteenth century that popular culture has adopted it as a symbol of the old west alongside the cloth covered wagon and the six shooter (Apjac International 1973; Napton 1991; Peattie 1945, 1946). It would not be surprising

Figure 31: Caldwell bottle and jug rim variations (Drawn by Dick-Jacobson).

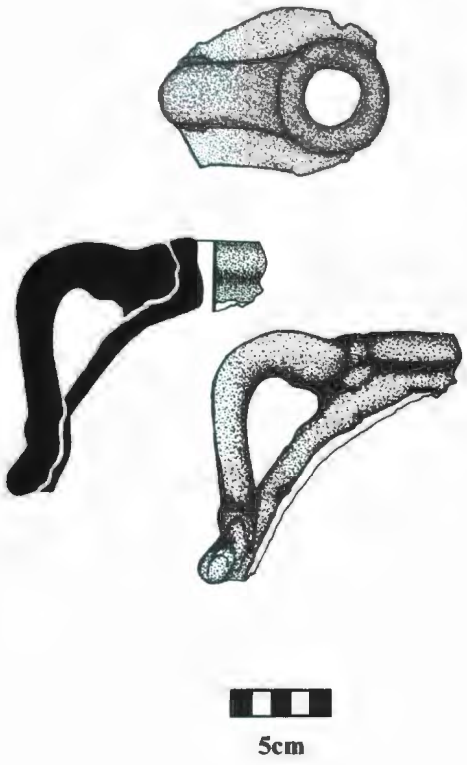


Figure 32: Caldwell Jug rim and neck sherds with handle profile (Drawn by Dick-Jacobson).

to find this form scattered all along major routes of travel all over the United States. The Caldwell sample exposed 23 jug sherds.

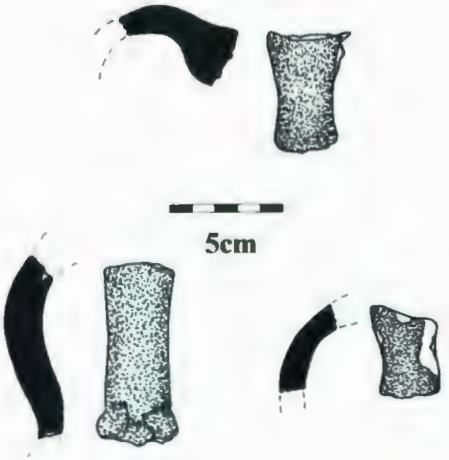
Handles and Knobs

When larger vessels are filled they can become heavy and hard to manage. Handles help people to move a vessel around by distributing weight evenly, to stabilize or balance a vessel and to keep the hands from burning when working with hot items. Handles are found on many large capacity vessel forms, such as jugs, jars, pitchers, casserole dishes, crocks, or churns, usually in sizes from three gallons and up (Walthall et. al. 1991). Caldwell's pottery display two types of handles, the strap and lug. Both handle types are pulled from a long coil of clay, shaped with the thumbs, and attached with water by scoring the pot and then welding the handle into place with finger compression (Figure 33a).

The two types of handles found at the Caldwell site differ in how they are attached to the vessels. The strap handle is a coil with one end attached at the neck and the other end joined on the shoulder with a slight twist of the thumbs forcing both surfaces to meld together making one body (Luck 2003b; Dick-Jacobson 2003). The lug handle is a coil that is attached to the side of the vessel for the entire length of the coil. The coil is compressed onto the shoulder of the vessel by the fingers. Some vessels found in the Caldwell sample had handle impressions, but the handle was missing. This missing handle and the mark it left behind suggests that the handles fell off in the kiln some time during the firing as a result of faulty craftsmanship during the building stage of the pot. The pot was deemed unusable and appropriately deposited into a waster pile. Perhaps the

a:

b:



c:

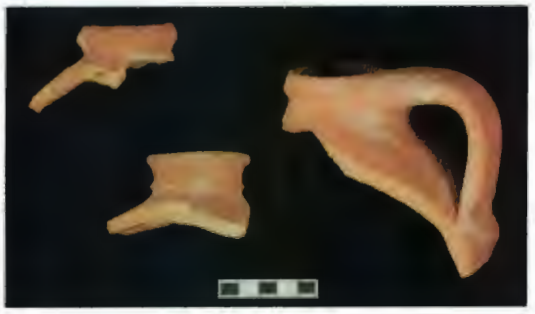
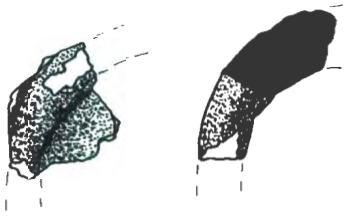
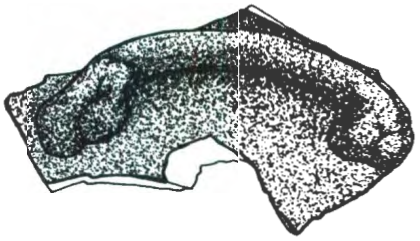


Figure 33: a: Strap handle application (Zug 1986: 161). **b: Caldwell strap handles with profiles** (Drawn by Dick-Jacobson). **c: Caldwell strap handles (cms)** (Photo by Dick-Jacobson).

a:



5cm



b:

Figure 34: a: Caldwell lug handle variation (Drawn by Dick-Jacobson). **b: Caldwell lug handle (cm scale)** (Photo by Dick--Jacobson).

reason the handle fell off the jar was due to an inadequate adhesion in the join between the handle and the wall of the pot either by a lack of compression, scoring or a lack of water between the two pieces of clay.

Strap Handles (n = 17 sherds)

Strap handles are found on jugs with either one single handle attached to the lip and neck of the vessel reattaching itself to the shoulder, or one strap handle on each side of a jug attached first to the shoulder and down to the jug body forming open loops (Jacobson et. al. 2004, Luck 2003b; Walthall et. al. 1991). Strap handles are usually smooth both on the top and the underside of the handle. Compression points at both ends are either finger smoothed leaving prints or smoothed out with a wet shammy or sponge (Jacobson et. al. 2004; Luck 2003b) (Figure 33b). The Caldwell sample yielded 17 examples (Figure 33c).

Lug Handles (n = 27 sherds)

Lug handles are found more often on jars, churns or crocks versus any other type of form. They are placed horizontally with one side of the coil attached its entire length on the shoulder of a vessel (Jacobson et. al. 2004; Luck 2003b; Walthall et. al. 1991) (Figure 34a). Typically, these types of handles are placed on as pairs, one on each side of vessel. The handles are usually curved before application and are smoothed out afterwards with a shammy or sponge. Compression points at both ends of the handle are also smoothened (Jacobson et. al. 2004; Luck 2003b). 27 sherds were found in the Caldwell sample (Figure 34b).

Drain Pipe and Building Materials (n = 5 sherds)

The impact of industrialization and the speed of developing technologies were swift during the later years of the nineteenth century creating new consumer markets. As a result potters began to produce forms used to support construction activities such as the bell and spigot, couplings and other joinery (Burney-Miller 2003; Faulkner 1981). People wanted these pipes to "line the walls of wells, which were normally dug out to a depth of about twenty feet" (Zug 1986: 353).This form fit into each other and the joins were surrounded by earth which held the pipe together (Figure 35). Zug (1986) explains how the forms were used to drain bottom land or to transport water from a spring to a springhouse. Drain pipes were not the only types of construction materials made. Bricks, stove collars, chimney pots, and doorknobs were some of the forms produced (Guappone 1977; Zug 1986). A total of five drain pipes (bell and spigot) were found in the sample suggesting that drain pipes were made (Figure 36). The history of drain pipe production contributes to the lack of pipe sherds in the sample. It was around the 1880s to 90s when drain pipes became a popular form made at potteries and this was the time the Arrow Pottery shut its doors. Based on the amount of sherds observed everywhere in Arrow Rock, one could speculate that there may be many Caldwell drain pipes as well. However, they are simply out of reach, under the town of Arrow Rock.

Figure 35: Building Materials: Unglazed thimble and drain pipe (Zug 1986: 353).

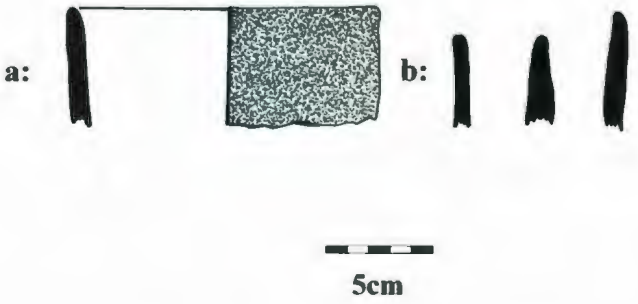


Figure 36: a: Caldwell drain pipe. b: Rim variations (Drawn by Dick-Jacobson).

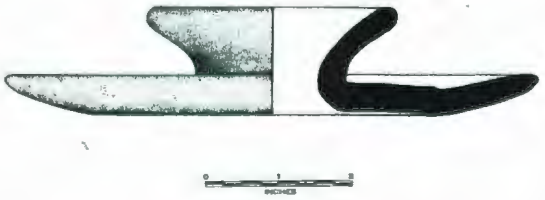


Figure 37: Churn lid from the Pottery Works site (Mansberger 1997: 72) **(inch scale).**

Seen here is a saucer lid with a knob on the top of the lid. The knob has a dual role for pulling it off but it also has a hole in it for the dasher for mixing cream into butter. Caldwell's sample identified one similar sherd but to small to illustrate.

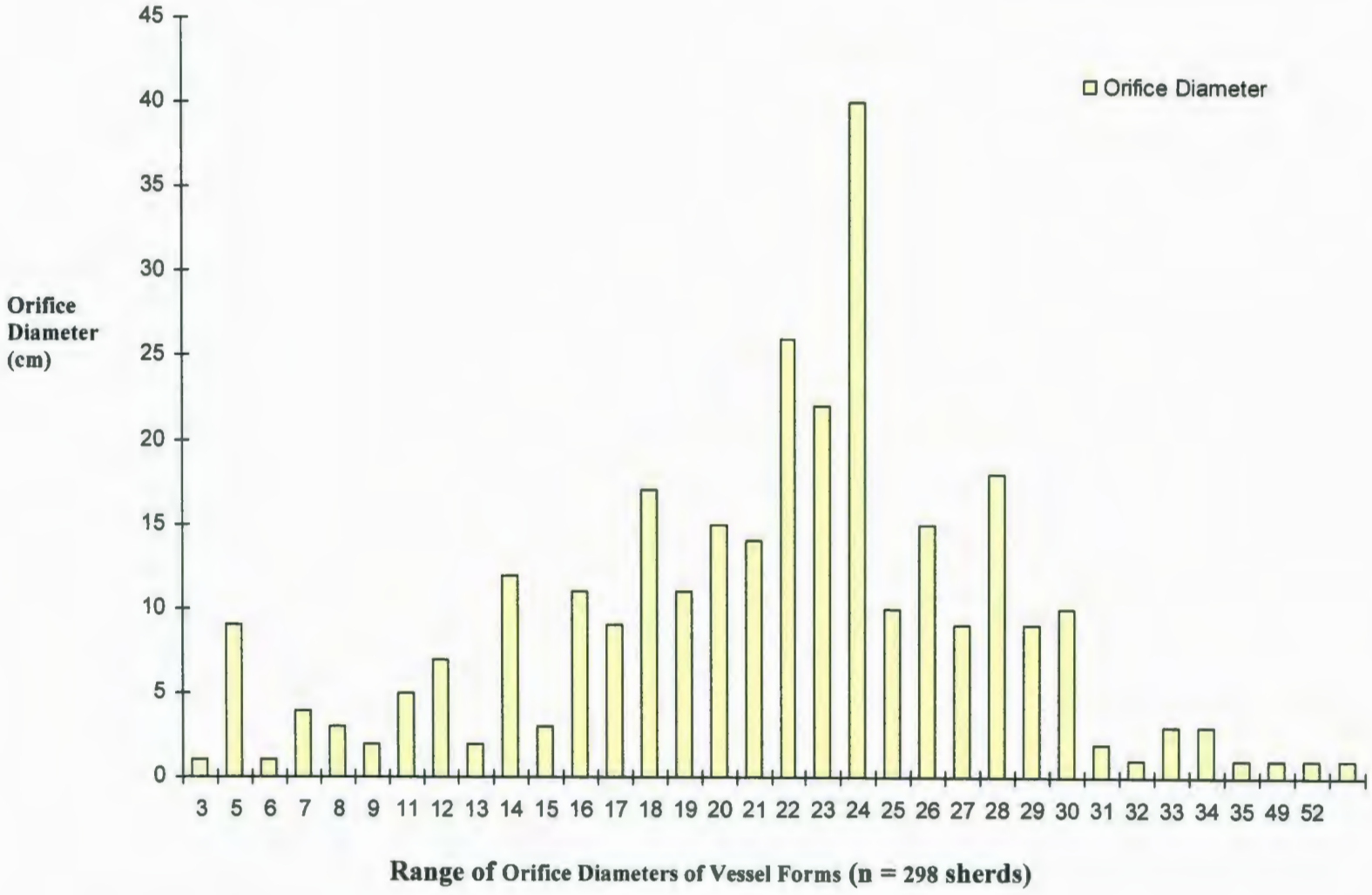


Figure 38: Total sample of Caldwell's orifice diameters of wheel thrown forms.

Table 7: Breakdown of Orifice Diameters of Caldwell Thrown Forms

	Bottle	Bowl	Drain Pipe	Jar	Jug	Lid	Short Chuck	Jug Sagger	Indeterminate Indt.	Total
3	1									1
5	5			1	2				1	9
6	1									1
7				1					3	4
8					1	1		1		3
9					1				1	2
11		1		2					2	5
12		2		4		1				7
13		1						1		2
14		2	2	8						12
15				3						3
16		1		9					1	11
17		1		8						9
18		2	2	11				1	1	17
19		2		8				1		11
20		2		13						15
21		2		11			1			14
22		5		17					4	26
23		1		21						22
24		12		26		1			1	40
25		1		8		1				10
26		7		7					1	15
27		2		7						9
28		3		12			2	1		18
29		2		7						9
30		5		5						10
31				1					1	2
32				1						1
33		1		2						3
34		1		2						3
35				1						1
49				1						1
52				1						1
Indt.									1	1

Total n = 298

Lid (n = 3 sherds)

Lids were thrown as small disks, in all sizes, with or without a loop, knob or strap or opening for additional parts such as a dasher for a churn. Open or closed, they were thrown for casseroles, jars, crocks, churns, and butter pots (Figure 37). Shallow disks called "Saucer Lids" or "Jug Lids" were flatter disks with an open knob thrown on the top and used for churns. Saucer lids were concave and jug lids were flat with a short opened spout / knob (Zug 1986: 317). Lids for other vessel types would have additional features such as tall or short foot rings on the underside, to create a seal for canning or to keep the contents from leaking out. The Caldwell sample yielded three lids. Historical documents show that lids were purchased at an additional cost and wood could perform the same function as those made from clay and when they needed to be replaced they could be easily and inexpensively by owners of the pots. Ceramic lids were not really worth the time to make as they are made to fit each vessel specifically making them a time consuming project for the potter when a wooden lid would have sufficed.

Finishing Decoration: Incising, Stamping, Slip, Stains, and Paint

A decoration is an additional element applied to a pot that does not directly affect its functionality or structure. Its purpose is either to inform the consumer of what it can hold, increase its aesthetic appeal in order to add value to a pot, or create a texture. A brush, nail, wooden knife or stamps are the tools used to paint or slip a pot, incise or mark a vessel. Decorations were popular on folk pottery during the 1700s and by the mid nineteenth century were only used at a handful of potteries around America. When the

pottery industry changed in the nineteenth century more time was needed to be spent making pots as opposed to decorating pots (Webster 1971).

The decorations found on the pottery during the nineteenth century produced at small scale pottery factories were typically incised or painted (Figure 39, 42 and 43). Incised bands were the most basic decoration used on folk pottery and found at the Caldwell site. Bands were carved or scratched onto vessels after the final stage of throwing. More intricate floral, animal or landscape designs could be carved, stamped, drawn or painted using simple tools that were either found or made by hand. Stains, such as iron oxide, were also used to paint decorative designs, poems or scriptures on the sides of folk pottery (Burrison 1995). One method of creating iron oxide was by leaving old nails in a pail of water to rust (Sweezy 1994). This rusty water was then applied with a brush. Once fired, the colour of the stain was orangey - brown (Sweezy 1994). Cobalt was a popular glaze used in the 1700s to decorate pottery because of its reliability in producing a similar shade of blue on almost all types of clays, regardless of firing. It was, however, expensive because it was imported from Europe (Guillard 1971; Rhodes 1973). Decorations found on folk pottery appear to be applied quickly and spontaneously, giving the ware a sense of playfulness that is typical to folk pottery (Guillard 1971). Caldwell's sample yielded many slipped vessels but only a few decorated sherds. The most common decorations found were scratched bands or grooves, followed by numbers, and stamps. No vessels were found with a maker's mark.

Freehand Scratches or Incising (n = 8 sherds)

This type of marking was the most common decorating technique available to potters and was found on jars, pots, crocks or churns (Guappone 1977; Luck 2003b; Zug 1986). The most basic of freehand drawing techniques, the potter would use a tool made of wood or metal and scrape patterns, designs, symbols, numbers, animals or flowers onto the walls of the pottery (Guillard 1971; Webster 1971). "Scratched or incised pottery is rare…[and] difficult to find" (Guappone 1977). A total of seven potsherds were found in the sample from the Caldwell site. Four sherds appear to have gallon numbers "2", "4", "5" and "6" incised just below the rims or on the shoulders of the vessels (Figure 39). Two sherds appear to have a design. One sherd appears to have been accidentally struck with either a sharp wooden tool or edge of a metal tool.

Capacity Stamps or "Stomping" (n = 2 sherds)

Folk pottery was traditionally marked with gallon sizes, if requested by the client. These were applied with a nail, match stick, wooden stick or pick (Zug 1986: 160). With industrialization, potters began to stamp large gallon vessels, at the buyer's request. A "stomping basket" was used to hold these stamps efficiently and the numbers would be added to vessels with either a wooden or clay stamp on the shoulder, mouth rim or body after it was thrown (Figure 40). These stamp or "stomping" baskets were hand made by potters in their shops (Zug 1986: 160). Only two Caldwell vessels were stamped or "stomped" identified as an "11" and "4" were found located on the shoulder and mouth of the vessels (Figure 41a, b). These are comparable with finds from Illinois in their location (Mansberger 1997; Walthall 1991). Later in the nineteenth century, stamping ware was a

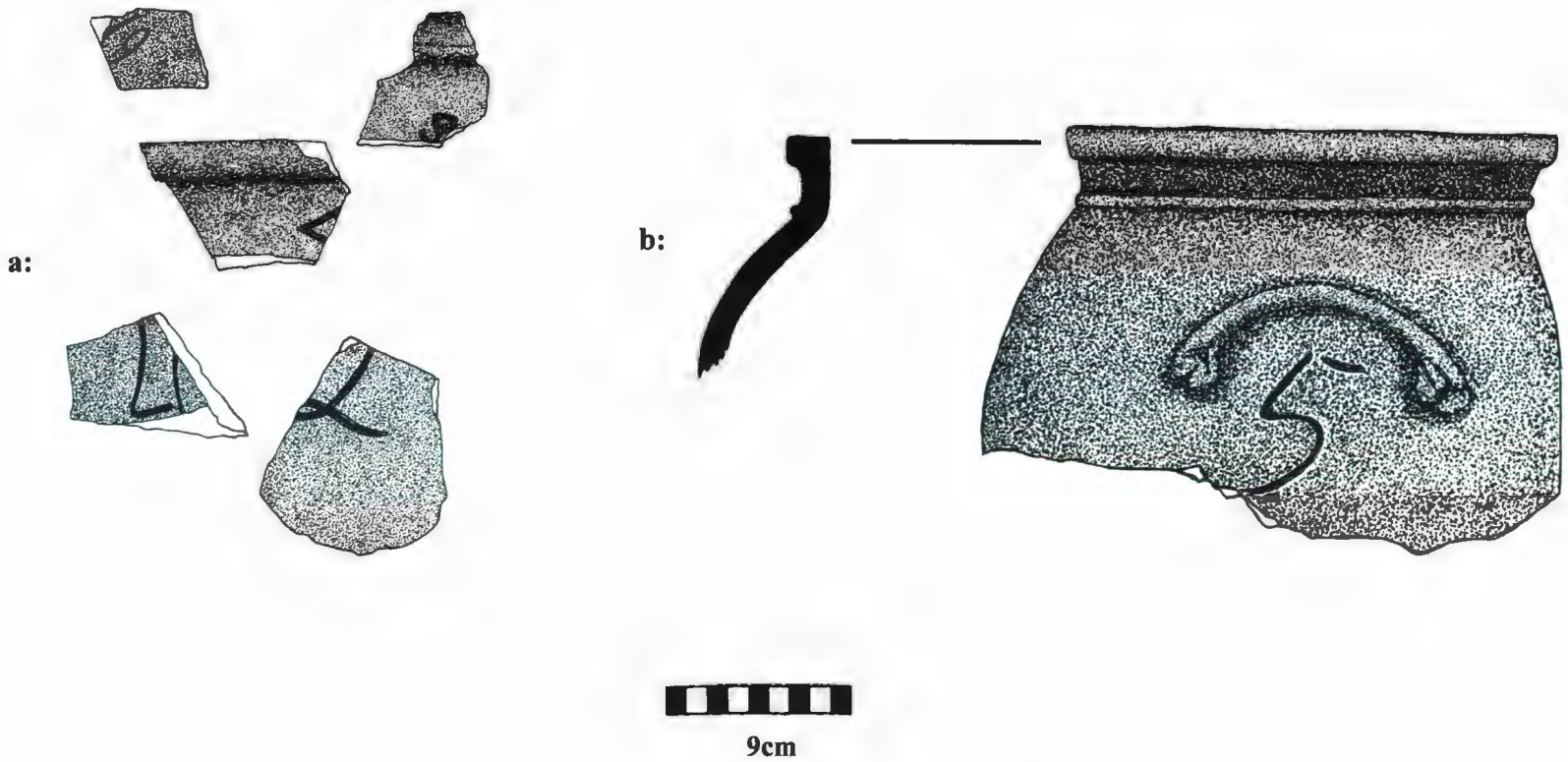


Figure 39: a: Caldwell scratched body and rim sherds. b: Necked jar with a five scratched into the shoulder of the vessel (Drawn by Dick-Jacobson).

Figure 40: Stoneware Stamp Basket, ca. 1952 (Zug 1986: 161).

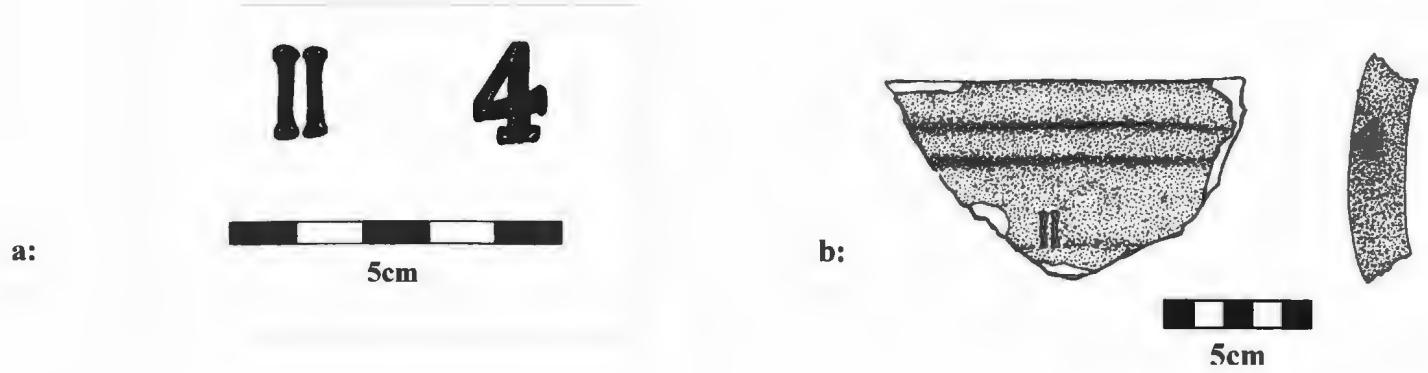


Figure 41: a. Caldwell capacity stamp. b: An example of the location of a stamp on the shoulder of a jar and lip (Drawn by Dick-Jacobson).

Figure 42: A sample of painted designs seen on American Folk Pottery (Drawn by Dick-Jacobson). Designs modified from Guillard (1971) book titled Early American Folk Pottery.

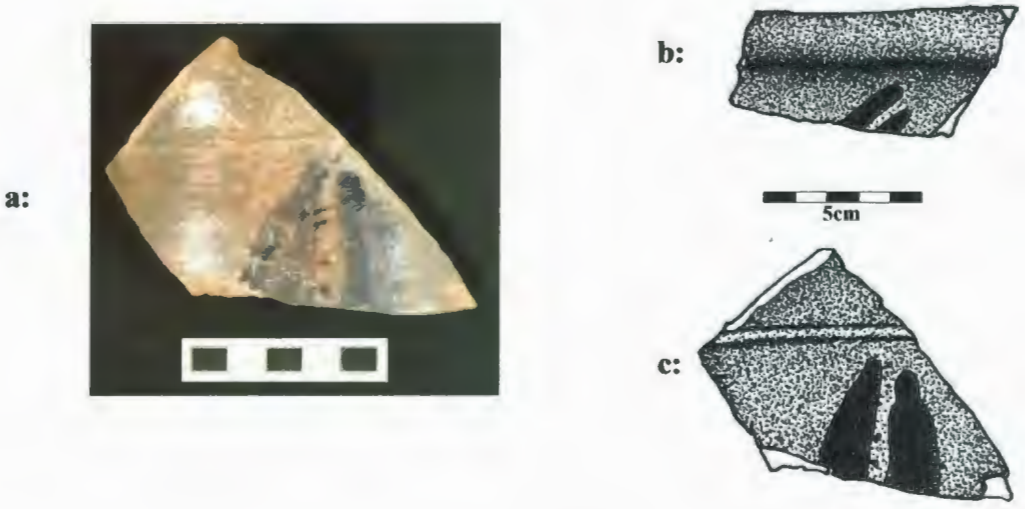


Figure 43: a: Caldwell painted jar sherd with black stain (cms) (Photo by Dick-Jacobson). **b: Painted rim sherd. c: Possible floral motif.** (Drawn by Dick-Jacobson).

Figure 44: Caldwell sherds with exterior decoration.

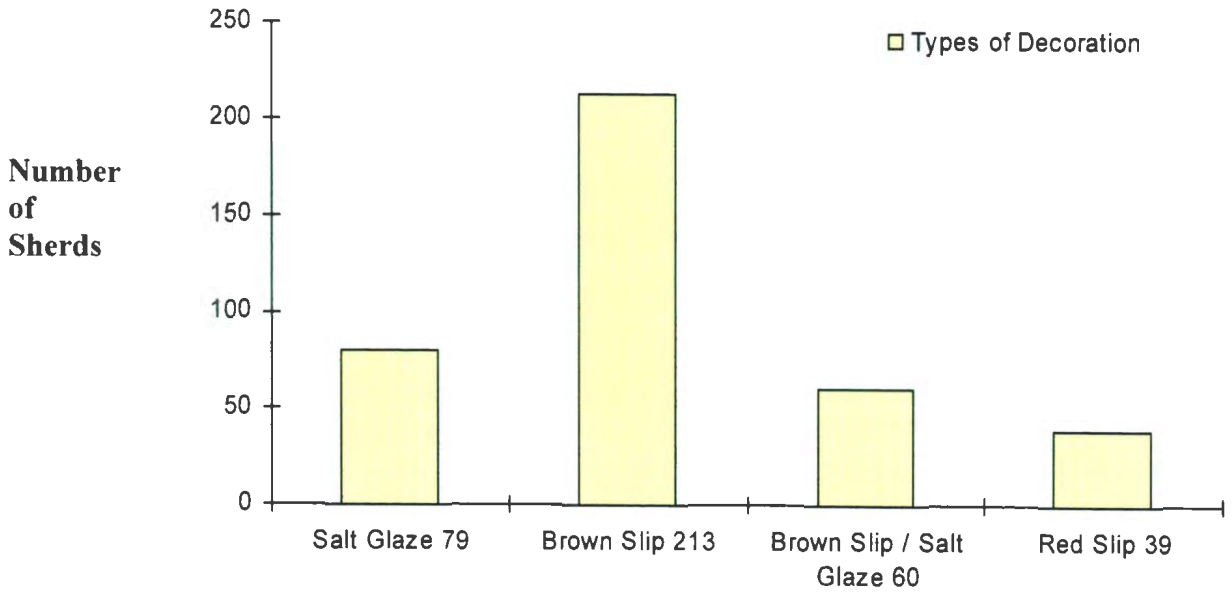


Figure 45: Caldwell sherds with interior decoration.

popular way of marking vessels in large-scale production potteries later in the nineteenth century.

Painted Sherds (n = 60 sherds)

Decorating a pot with paint was done freehand without the use of stencils. Most times the areas painted were brushed with cobalt oxide in floral, scenic, or animal designs that were whimsical (Guappone 1977, Guillard 1971; Webster 1971) (Figure 42). Some painted vessels were ornate while others were simple, but it was the whimsy of these designs that solidified it as a type specific to America (Guillard 1971). A total of six hand painted sherds were found in the sample (Figure 43). Three potsherds and one piece of kiln furniture were painted with a cobalt oxide the most common colour on folk pottery (Burney-Miller 2003). Two sherds, shallow slip cast bowls, have lines painted on them with black stain. 54 sherds exhibited brown slip. Slip is a mixture of liquid clay with a colorant mixed into it. Many Caldwell straight-walled jars had brown slip on the inside and only salt glaze on the exterior (Figure 44 and 45).

5.4 Kiln Implements: Types and Forms

The tools used in the bottle kiln during the firing process will be broken into two distinct categories: furniture and utensils. Kiln furniture will be used to classify the forms used in the kiln to support and stack vessels directly during the firing (Figure 46). Kiln utensils will refer to the forms used by the kiln tenders to inform them of the conditions of the internal atmosphere of a kiln while it was actively firing. Each form was built one

Figure 46: Types of kiln furniture, from the Caldwell factory (cm scale) (Photo by Dick - Jacobson).

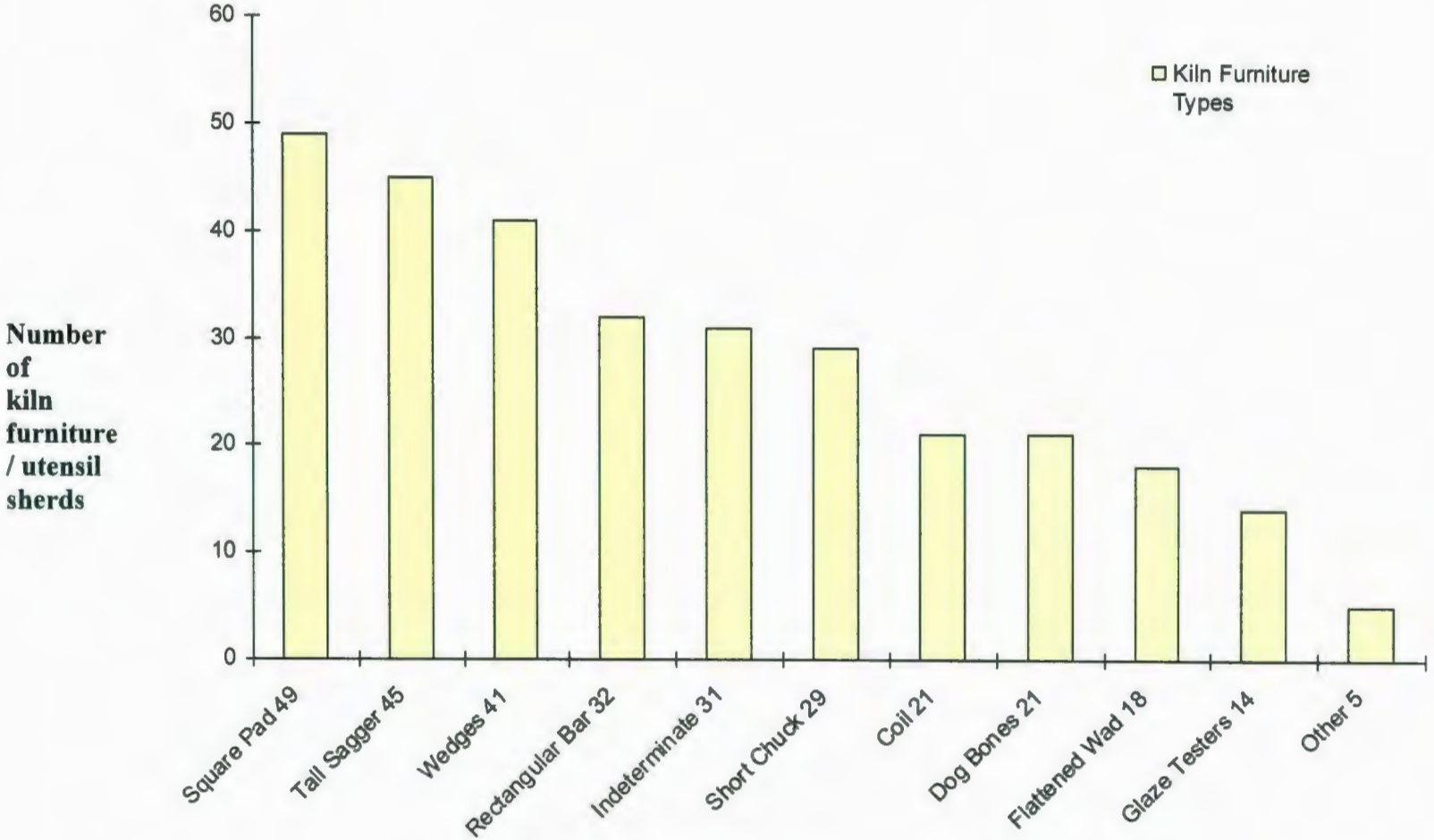


Figure 47: Caldwell's kiln implements by form.

of three ways: hand built, rolled out in slabs or thrown on wheels. The choice of construction method is determined by its application. Because most kiln furniture or utensils were disposable, the potter made them quickly and out of the most appropriate material for the job it was expected to do during the firing. The paste of the kiln furniture was coarser than the stoneware body "tempered with coarse sand to prevent adherence to vessels during firing" (Walthall et. al. 1991: 14).

Currently there is little research available on kiln furniture. Subsequently, the terms used to identify the following forms were found through various sources such as collector guides, archaeological site reports, and references made by the potters themselves (Burrison 1995; Carnes-McNaughton 1995; Faulkner 1981; Guappone 1977; Mansberger 1997; Walthall et. al.1991). The Caldwell sample yielded 306 sherds of kiln furniture and utensils. Kiln furniture types ranged from short chucks, jug saggers, wedges, coils, flattened wads, dog bones, square pads and rectangular bars. A kiln utensil in this study is forms such as the glaze tester and maturity bar. An "other" category has been identified for any ceramic material that is not a type of kiln furniture or utensil and is brick rubble, mortar or small pieces of glaze fused to mortar removed from the kiln after the firing by kiln tenders or fragments broken free from the excavation of the kiln site (Figure 59).

Hand Formed Kiln Furniture

Wedges or Wads (n = 41 sherds)

These are the most spontaneously made pieces of kiln furniture; these small clumps of clay are hand manipulated wadding clay that is used in combination with other

Figure 48: Caldwell wedges (cm scale) (Photo by Dick-Jacobson).

Figure 49: Caldwell leveling spacers (cm scale) (Photo by Dick-Jacobson).

types of kiln furniture to adjust or level out stacks of green pottery inside the kiln. Caldwell's wedges commonly displayed a compression ring (vessel platform) from the weight of the vessels that were either on top or underneath the wedge, causing clay to compress and become bulbous on the outer edge (Figures 45; 48a,b). There were 41 wedges in total identified in the Caldwell sample, ranging from 33 extra small, 5 small, 1 medium, 1 large, and 1extra large wedges. The size categories chosen for the wedges express their weight in g.

Dog Bones / Leveling Spacers (n = 21 sherds)

This was a versatile, unique and crudely hand made type of kiln furniture at many nineteenth century sites. It is a coil built form which is further manipulated by expanding and flattening each end. A surface area that is wider than the coil is created at both ends and used to separate, strengthen and stabilize stacks of pottery in the kiln using more than one contact point. The paste is very gritty and sandy. These gritty forms are used to stabilize the pottery as it is getting stacked in the kiln the moment the vessels are entering and built to the configuration of the pots in the kiln. Fingerprints and impressions cover these forms. Dog bones were likely used in combination with short chucks or jug saggers to steady the columns of pottery with each other and against the wall of the kiln (Carnes-McNaughton 1995: 77). These "dog bones" or "dumb bells" are consistent with forms that have been identified from contemporaneous archaeological sites (Faulkner 1986), historical references (Webster 1971) and collector guides (Guappone 1977). The Caldwell site yielded a total of 21 small to extra large types, based on their weight (Figures 46; 48c). They range from small dog bones (under 60g), medium (60 to 100g), large (100

to140g); and extra large (over 140g).

Many dog bones exhibit a heavy salt glaze. It has been speculated that this happens because these forms were reused. Experience has shown that most kiln furniture is used for only one firing. Special and time consuming thrown, mould made or jig formed kiln furniture are normally reused in combination with small disposable gritty forms. It is this sandy gritty body that allows these forms to easily break off of a vessel bottom or kiln furniture after a firing. However, if the form has been contaminated by a previous firing it can fuse to the vessel it is next.

Salt firings work well because when the salt is dumped into the kiln a thin layer of salt scatters and covers everything inside of the kiln. Salt does not, nor can it, disappear after a firing. Essentially it is glass afterwards. If kiln furniture has glaze on it from a previous firing and it is placed in a new firing the glaze will melt once again, as temperatures reach the point of quartz conversion. Therefore, any glaze from a prior kiln firing on any object in the salt kiln will melt simultaneously as new layers of salt are forming on a contact point. This phenomenon cannot be controlled and can cause a direct fusion between an old piece of kiln furniture and the vessel it may be accidentally attached too. At the end of a kiln firing this kiln furniture is commonly broken free from vessels with a brick. These procedures make it risky to reuse forms with salt from a previous firing on them. They are easily duplicated — ensuring no additional threat to an already risky procedure. It is dangerous enough to remove kiln furniture used that has been fused to a pot with a brick after one firing because it can unintentionally take part of the vessel with it leaving an undesirable hole, a sharp edge that may puncture the skin during the handling of the vessel, or break the entire vessel altogether. Rather, a thick

layer of salt on this particular form suggests proximity to a spy hole or the openings where salt directly enters the atmosphere of the kiln.

Coils or Stackers (n = 21 sherds)

The coil is another form of kiln furniture that is made on an as needed basis, hand formed, and while pliable, by the potter when stacking the kiln. Coils were typically used alone between like vessels; commonly crescent shaped, and covered in hand or finger impressions. Vessels expand and contract during a firing and coils were used to separate the ware so that they would not fuse together. Coils or stackers also helped maximize the useable space inside the kiln by keeping the vessels far enough apart that they would not touch during the firing, but were close enough to capitalize on the space in the kiln. When they were used in combination with another type of kiln furniture, such as a short chuck, in the relationship with vessels they would exhibit one flattened side while the other exhibited a compression ring. These forms were easily identified in the sample due to their shape and the compression rings on either side of the form, suggesting that they were used as a primary source of stability.

The bottle kiln must be stacked vertically and each vessel stacked in this way must either match in size and shape or be smaller and lighter than the pot below it. The experience of the potter would help him understand these weight and size issues. If the pots are stacked incorrectly, more specifically, a smaller vessel is placed under a heavier one the risk is that the entire column could collapse and perhaps take the surrounding columns down with it, or even go so far as to create a complete collapse of all the ware

Figure 50: Caldwell coiled kiln furniture (cm scale) (Photo by Dick-Jacobson).

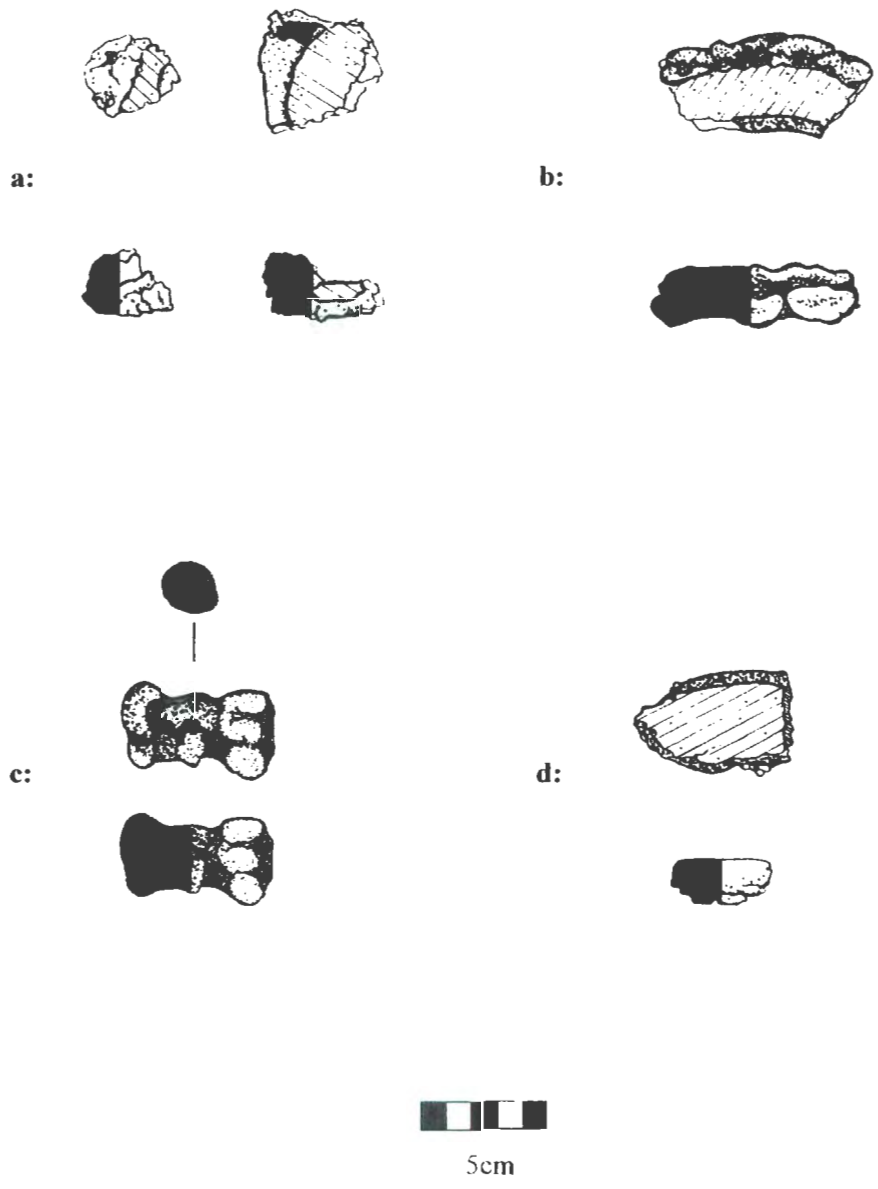


Figure 51: Caldwell's hand formed kiln furniture. a: Small and large wedges or wads with vessel platforms. b: Coil with vessel platform. c: Dog Bone with profile. d: Flattened wad with vessel platform (Drawn by Dick-Jacobson).

inside the kiln. This could be quite devastating to a small scale pottery producer such as Caldwell, because they only employed one kiln and producing enough ware for one firing, probably containing a mix of vessels. If a collapse should happen a pottery could face a few weeks worth of effort, materials, and time lost.

Some of the coils in this study had compression rings so pronounced that a diameter could be measured, on both sides of the coil, so that a probable form could be suggested. Crocks, churns or cylinders would have been the ideal form used with this type of kiln furniture along side the small chuck. The coils in this sample are categorized from small to extra large based on length. They are: 1 small coil (under 2 cm), medium coils (2 to 3.9 cm), 7 large coils (4 to 5.9 cm), and 1 extra large coil (6 to 8 cm). Most of these forms were 2 – 2.5 cm thick and exhibited a thin layer of salt glaze on the exterior of the coil (Figures 50, 51b).

Flattened Wads (n = 18 sherds)

The flattened wad is also coil built and placed between the base of vessel and a piece of kiln furniture like the small chuck. It would be rolled out like a coil and flattened while it was still wet through the pressure created by the potter as the base of the pot was stabilized on top of the kiln furniture. This shape of this form is created more by the actions of the potter putting the vessel in place rather than the weight of the vessel itself. Whether they were placed between a jug sagger and the base of a jug or a short chuck and a base, these forms require pressure on both sides to compress them into a flat form (Figure 51d). There were 18 such sherds found at the Caldwell pottery.

Slab Built Kiln Furniture

Square Pads (n = 49 sherds)

Perhaps it was the versatility of the square pad that made it the most commonly found type of kiln furniture identified in the Caldwell sample or the fact that their size allowed the potter to use more of them. The square slab could be used with all types of kiln furniture, as well as, independently along the rims of jars, churns or under the base of a vessel (Figures 52; 54b, c). These pads, regardless of size, all exhibit a knife cut top and ripped bottom. The knife cut top suggest that potters would roll out a large slab of sandy wadding clay, approximately 4cms thick, near the proximity of the doorway of the kiln, and quickly score the slab half way through in a cross hatched pattern. An individual pad would be ripped away as the potter needed the wad to place on or under ware during stacking.

The shape of the pad indicates where it was placed on a form as well as how the form has been compressed by the weight of a vessel on top. Many jar rims in the Caldwell sample had pad scars visible along the top of the rims (Walthall et. al. 1991: 15). Also, a few rims and kiln furniture were found with square pads still fused to them, suggesting either a glazing problem or that the kiln was fired too hot and the pad fused itself to the rim.

Rectangular Bars (n = 32 sherds)

Rectangular bars are built in a similar manner that square pads are, however their construction is more deliberate than the square pad. Several rectangular bars can be cut individually out of one slab of wadding clay suggesting these forms had a predetermined

Figure 52: Caldwell square pads (Photo by Dick-Jacobson).

Figure 53: A collection of Caldwell rectangular bars (Photo by Dick-Jacobson).

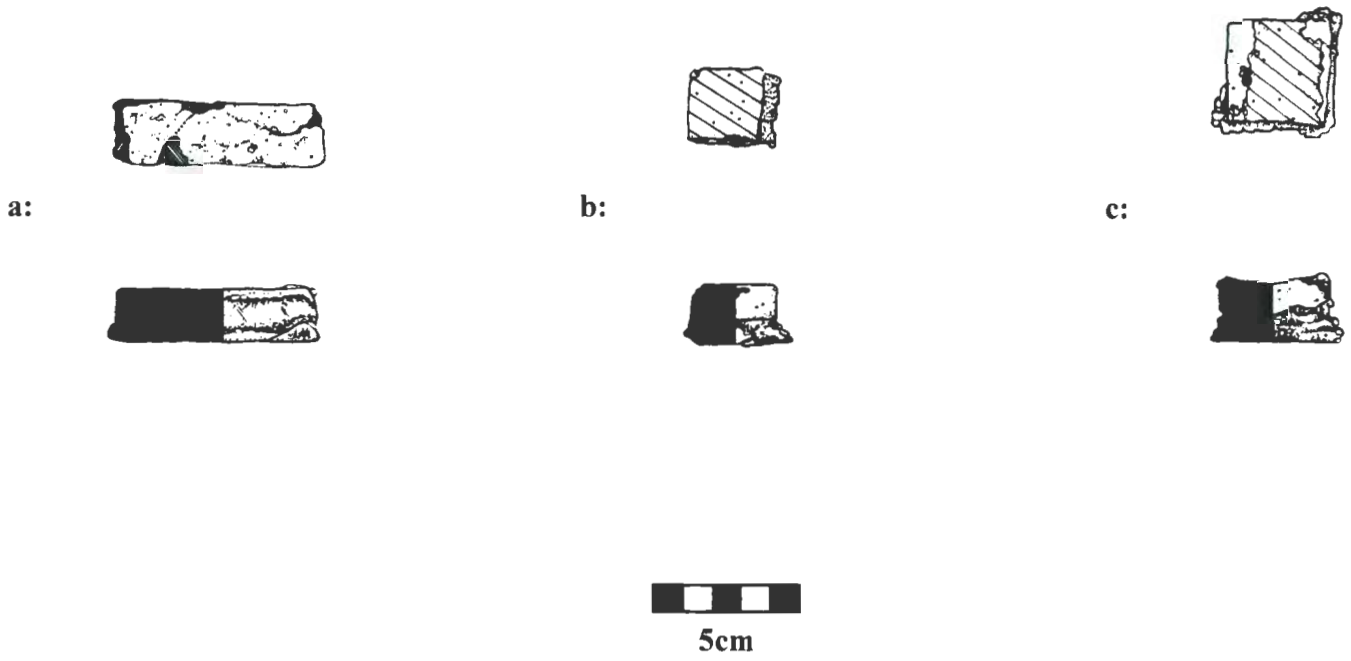


Figure 54: Caldwell slab built kiln furniture. a: Rectangular bar. b: Small square pad. c: Large square pad (Drawn by Dick-Jacobson).

use (Figures 53, 54a). The Caldwell sample identified 32 rectangular bars. However, none of the forms had an obvious build up of salt glaze suggesting they were placed in an area where salt fumes could not reach them, such as, under the base of a pot or in between abase and a short chuck. A rectangular bar was found fused to the rim of a short chuck, complete with an identifiable vessel platform, while others did not (Figure 58).

One rectangular bar was identified in the Caldwell sample that shares some of the characteristics inherent to the nineteenth century "maturity bar" (Guappone 1977; Rhodes 1971). What separates this bar from the others is that its overall shape was smaller, its paste was denser lacking grit or sand, and it was very slightly bent on one side. Every clay body is different from one type to another each with its own point of vitrification. Vitrification is the point that the body of the clay tightens up becoming dense or rocklike through heat. If the kiln is not at the appropriate temperature, the clay will either be brittle due to under firing or melt if over fired. These bars were used to determine the maturity point of clay and made out of the same clay that was used to create the vessels loaded into the kiln (Rhodes 1971). Maturity bars were likely cut and set just before the door of the kiln would be bricked and sealed ready for the start of the firing. The kiln tender would keep an eye on this bar of clay, placed on two supports in the kiln during the firing and once the temperature reached specific point the bar would begin to bend in the centre (Guappone 1977: 11). Maturity bars are used by the kiln tender to help to control the kiln temperature during an active firing.

Figure 55: Caldwell jug sagger (cm scale) (Photo by Dick-Jacobson).

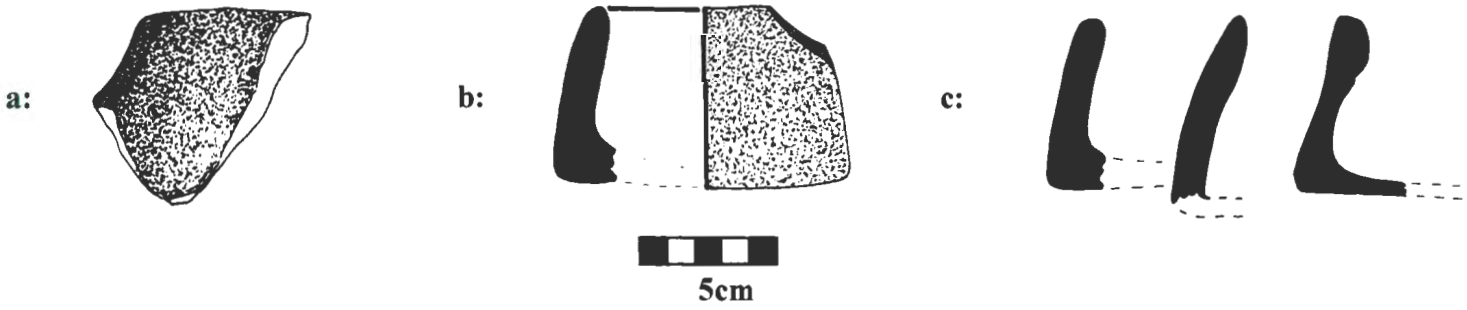


Figure 56: Wheel thrown kiln furniture. a: Jug sagger with cut edge. b: Jug sagger with profile. c: Jug sagger rim variation (Drawn by Dick-Jacobson).

Wheel Turned Kiln Furniture

Jug Sagger / Stacking Furniture / Tall Chuck (n = 45 sherds)

This type of kiln furniture was thrown on the wheel and was designed specifically to support either a single bottle or a jug (Figure 55). Potters would have had to spend time making a number of these forms prior to their use. The jug sagger was cylindrical in shape and could be inverted at the rim or base (Faulkner 1981). The forms found at the Caldwell site had a piece of clay cut out of one side, so that they could be placed over the spout of a jug without putting the handle, if it had one, into jeopardy from chipping, fusion or total breakage (Figure 56a). Another small hole was cut out of the base of the form so heat could easily transfer from form to form inside the kiln to cure both the spout inside the stacker, as well as the base of a different pot located on top of this piece of kiln furniture (Figure 55). Several forms were found with salt glaze in the sample, but there were forms that did not have salt glaze. Saggers were found at contemporaneous sites in America and were some of the only forms produced that would be re-used and stored for future firings.

Short Chucks / Kiln Shelves (n = 29 sherds)

The short chucks were the second type of kiln furniture thrown on a potter's wheel found at the Caldwell site. This short and small round disk like form could also be thrown in a mold with a jig (Faulkner 1981: 77). Short chucks could be used as a level base along the floor of the kiln so that vessels did not have to rest directly upon crushed quartzite or sand and could also act like a kiln shelf between two vessels (Leach 1978; Luck 2003b)

Figure 57: Caldwell short chuck (Photo by Dick-Jacobson).

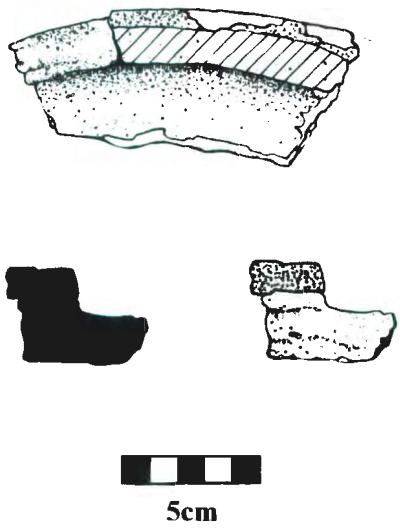


Figure 58: Wheel thrown kiln furniture. Short chuck with a rectangular bar welded to the rim (Drawn by Dick-Jacobson).

(Figures 57, 58). Most chucks found in the Caldwell sample exhibit a heavy salt glaze on all sides suggesting reuse. Sandy and gritty forms such as rectangular bar, square pad, dog bone and wedges were commonly used in combination with short chucks. The short chuck was discarded when the salt became too thick causing forms to fuse to them. Many short chucks had either the scars or the remnants of actual kiln furniture, such as rectangular bars, small wedges, or square pads still fused to their rims (Figure 58).

Indeterminate (n = 31 sherds)

This category is for any unknown piece, either too small or fragmentary, to clearly determine if it was from a piece of broken kiln furniture or vessel, kiln rubble or broken form the interior walls of the kiln when the kilns were cleaned. Many exhibited the characteristics of kiln rubble, chunks of salt glaze, broken brick caused by shoveling out the kiln after each firing (Figure 59a).

'Other' or Miscellaneous Kiln Furniture (n = 5 sherds)

This category consists of forms that were intended to be used within the kiln, the construction or maintience of the kiln, or small pieces of mortar associated with the actions by the potter when either sealing or reopening the doorway of the kiln before or after each fring at the Caldwell site. Unknown forms were rare, but two examples of one was found. One with a heavy salt glaze and one without (Figure 59b). Both were cut by a knife from a slab of clay that has a paste similar to kiln forms thrown on a wheel rather than the gritty and sandy forms built by hand or cut from a slab. I was able to determine

a:

b:

Figure 59: Caldwell Indeterminate sherds.

a. Top: Caldwell kiln rubble with salt glaze (cm scale). b. Bottom: Unique Caldwell 'other' sherd (cm scale). (Photo by Dick-Jacobson).

that it was definitely used in a kiln firing due to the pattern the salt glaze left behind on the form suggesting that something was resting on top of it. The construction of this kiln implement is known, but its exact use during the kiln firing is unknown. I contemplated categorizing this implement into the indeterminate category, however it was known that it was used in a supportive role in the kiln, but whether it was used as a utensil by the potter or if it was used to support the vessels during the duration of a firing is unknown. I am highlighting these forms in this thesis with hopes that they can be recognized, and identified.

Kiln Utensils

Glaze / Firing Testers (n = 14 sherds)

The glaze / firing tester is a kiln form that was used by the potter in order to understand how the glaze and clay was responding during different phases of the firing process. Historic sources and comparative sites have identified similar forms referring to them as "firing testers", "draw tiles", or "glaze testers" (Burrison1995; Faulkner 1981; Guappone 1977) (Figure 60a, b). The choice of the clay used to make the glaze tester was obviously significant and had to be relevant to the ware being fired. They could be slab made, cut to shape, and pierced with a hole by a nail or knife to hang them in the kiln. However, they could also be uniquely constructed by cutting up an existing pot ensuring that the clay used represented both the paste and slip used in the vessel during the firing. It was important to understand what was happening to any additions made to the inside of a vessel as well as the progression of the salt glaze.

a:

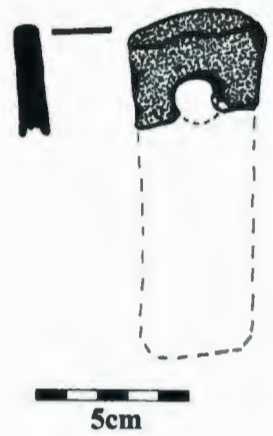


Figure 60: a: Caldwell glaze tester (Drawn by Dick-Jacobson). **b: Caldwell glaze testers** (Photo by Dick-Jacobson).

More than one glaze tester was set up in various places in the kiln before the door was sealed and left in place until the salting began. One at a time these little tiles were removed at various points within the salting procedure with a metal rod through a spy hole and left to cool for awhile. Finally, these tiles were dipped into water to check the thickness, texture, clarity or colour of the glaze. The kiln tenders would snap these testers in half once they were cool to the touch (Burrison 1995: 96). The salting process would continue until the overall desired overall effect of the glaze was achieved. There were 14 pieces of glaze testers found in the Caldwell sample, ranging from tiny knife-cut chunks to thrown pieces with brown slip on one side and salt glaze on the other. The holes were crudely cut by a knife. These testers were the chief means of testing the effects of temperature on the glaze during firings (Rhodes 1973).

5.5 Summary

This chapter has used historical documentation, scientific analysis, visual reconstruction, comparative archaeological data, and experience gained through ethnoarchaeology to interpret the potsherds excavated from the Caldwell Pottery Factory archaeological site. This research examined only a small random sample of the thousands of artefacts excavated from the Caldwell Pottery factory. A combined total of 853 potsherds were analyzed. The results of the analysis were used to draw conclusions surrounding several aspects of the Caldwell pottery, such as the kinds of tools used in the production of the hollow ware and the marks made on the vessels. Details about the stains, slips and glazes used on Caldwell's pottery were revealed by the artefacts

themselves. The types of kiln furniture and utensils were identified not only through the forms in the sample, but also the site plan created through the plan views generated of profiles during excavations by Dr. Baumann's team (Figure 6).

Most vessels produced at the Caldwell site were turned by hand on either a treadle wheel or kick wheel. The introduction of jig-structured forms appeared after Caldwell sold his business to Dr. Sappington, in 1863. Archaeological evidence has shown that Caldwell and his potters produced wheel-thrown, salt-glazed, functional, utilitarian vessels, such as, jars, jugs, bowls, churns with lids, crocks and bottles. These forms are typical of wares commonly seen in nineteenth century America, in both domestic and commercial contexts.

The most popular form produced at the Arrow Rock Pottery, as identified in the sample, was the jar, represented by 241 potsherds or 68 percent of all the consumer vessel forms. Indeterminate vessels include sherds that cannot be clearly designated into a category, such as bases and body sherds, totaled 201 or 36 percent of the sample. Bowls found in the sample totaled 65 potsherds, jugs 23, bottles 8, drainpipe 5, and 4 lid sherds. Less than 10 jars found in the sample had a stamp, mark, stain or paint applied to either the rim or shoulder of the vessels. Caldwell filled a utilitarian need for his consumers by providing relatively inexpensive vernacular pottery. The ceramic assemblage found at the Caldwell pottery site resemble those analyzed from roughly the same period in Illinois, Tennessee and Georgia (Faulkner 1981; Gums 2001; Mansberger 1997; Sweezy 1994; Walthall et. al. 1991).

The rarity of specific forms such as bottles and drain pipes indicates that these forms may have been produced on demand, by special order, or not a product that was

needed by the surrounding community, at least before the Arrow Rock Pottery closed up shop. Although these forms were rare at the Caldwell site, they appear to be much more common at other contemporary industrial pottery sites, in neighbouring states (Burrison 1995; Sweezy 1994; Walthall et. al. 1991; Zug 1986). The importance of these vessels found at the Caldwell site was what they revealed about the tools used to make them. The cylinder, bowl and stamping on the sides or rims of a vessel reveal tools used to build them. "Stompers" and the jig or mold represent the impact of industrialization on the ware being produced at the Arrow Rock Pottery linking it to a specific time in history (Webster 1971; Zug 1986) (Figures 40, 41).

Identifying Caldwell's bottleneck kiln helped to identify the glaze tester and some of the various uses of specific forms of kiln furniture like the short chuck or jug sagger. The bulk of the kiln furniture identified in the sample was formed by hand, using wet, gritty, sandy, wadding clay on demand, as the potters stacked a vertical kiln. The Caldwell sample reveals that short chucks and jug saggers were used as often as small square pads and rectangular bars — both combinations representing 50 percent of the total sample. The most common type of kiln furniture was the jug sagger / tall chuck with 45 sherds found in the entire sample of kiln furniture. Short chucks were counted at 29 sherds.

The amount and frequency of certain forms produced at the site, alongside information found in industry censuses from the mid nineteenth century reveal that Caldwell was practicing folk pottery production as a full time business and compared to other potteries he was a substantial supplier of stoneware pottery in the state of Missouri. Given Arrow Rock's location, coupled with the frequency of other potteries in the state,

the ceramics produced at the Caldwell pottery were likely used both by the people living in and by those passing through the town. This was a small-scale ceramic enterprise but, as shown by some of the marks on the pots, the pottery employed specialized craftsmen and tools.

Caldwell's pottery is a reminder of a time before industrialization revolutionized American society and the American economy. The era of mass production began as the ceramics produced at the Arrow Rock pottery began to be replaced with new scientific advancements. Products such as glass, rubber sealers, metal screw top lids, refrigeration, and the tin can were a cultural reorganization that began to redefine all of America's hand-made product industries. Industrialization, mechanization and capitalism ultimately disconnected people from each other and redefined the houseware industry. Newton G. Caldwell was a modern business man who capitalized on the demand for his skills that he had cultivated through a traditional way of life. Caldwell was a historic example of a craftsman turned businessman who sustained his livelihood solely through the product built by his own hands.

Chapter VI

Theory

6.1 Introduction

Folk pottery is an insular culture comprised of a definitive lifestyle and a specific means of economic support. However, this does not mean that folk pottery was protected from outside economic, social or technological forces, that were already defined in Europe and which were beginning to move into North America, during the mid-nineteenth century. Folk pottery had a place, for the folk potter was a professional, highly skilled craftsman able to turn a popular and necessary commodity (Webster 1971: 39). But modernization, industrialization and innovation changed not only the pottery industry in America but all hand built product industries. Their limits were starting to be discovered and these industries were no longer a necessary component of the infrastructure of a developing nation as America was now established. The folk potter, like others practicing handmade crafts, was too busy at the wheel to notice that the hand built era of America was over.

There is no method or formula for progress that can be relevant at all times, places or cultures (Cabak et. al. 1999). This chapter will introduce and summarize two recognized theoretical perspectives about economic development — *modernization* and *world-system theory.* These theories help to explain an unequal distribution or control of capital and how changes in these factors directly relate to the exploitation of one segment of a society and its redirection into a modernized sector of society. These theories facilitate explanation of the impact of industry at a mass scale on producers of goods on

the small scale and on those who rely on specific systems of exchange for their livelihood. Time, sequence or the degree of progress is frequently missing from modernization theory but these factors are important to archaeology. No society or group of people can be completely sheltered from a particular historical process or event as defining as industrialization (Cabak et. al. 1999: 23). Newton G. Caldwell was a folk potter and because of that reality he could not be excluded from the impact this event had on hand built industries. However, the direct and quantifiable impact that this event had on his pottery business and the decision he made as an individual agent in his own life is hard to speculate because these are unpredictable and composed of free will. With these caveats in mind, modernization theory is a valuable model for archaeology, providing a way of understanding the phases that occur during a transition from traditional to modern practices, why new methods are adopted or specialized, how a society or businesses can be reorganized, and how objects or their uses change over time. These theories provide a reasonable explanation of how folk pottery, which was once a leading industry, born from rich traditions, producing important and even essential commodities, became lost in the competition with more easily, produced glass or tin.

6.2 The Effect of Modernity and World-System on the Folk Potter and Pottery's Production in the Nineteenth-Century

Folk pottery enterprises were often found in small centres or rural environments and the methods of producing folk pottery were time honoured, traditional and practiced the same way for generations (Mack 2006; Webster 1971). Folk potters tended to produce forms similar to those produced by their

fathers and often one can see little to no change over many generations (Sweezy 1994). The means of producing folk pottery, the forms themselves, how they moved around, and their use changed slowly compared to the pace of change in America between the 1700s and the 1900s. Industrialization generates social patterns and economic practices that can be used to identify the changes experienced by multi-generational folk potters during the late nineteenth to twentieth centuries. Rostow (1960) proposed that modernization is a vehicle that has the ability to restructure any society or group of people regardless of size (So 1990).

The process of transformation from a traditional to modern society is viewed by modernization theorists as systematic and composed of four stages (So 1999). The first is called the *traditional* stage. Those living in this stage have been socialized from birth to embrace the past, practice traditional methods and cannot anticipate a reason to change the direction of their lives because they have existed this way for generations. Academics view these cultures as pre-industrial, agrarian-oriented, and reliant upon animal-based power and labour (Cabak et. al. 1999; Macionis et. al. 1999). These societies have conservative values, ascribed status, and persistently maintain traditional social forms. Folk potters in this phase of modernization participated in the business of pottery at a supplementary level created for and through a need. At this stage the tools are simple, gathered and created from local materials and powered by animals or the potters. The Caldwell family, like many European immigrant farming families, participated in the production of pottery, traditions were established, secrets safeguarded and passed

to the next generation through oral history all contributing to the development of their own folk pottery culture. This is the stage that the folk potter turned ware for his community, outside his or her own needs, creating the cottage industry. The introduction of this ware was driven by a need to improve the standard of living for both the potter and those who shared the community with the potter.

The second phase of transition is known as the *take-off* stage and it is characterized by inspiration, talent and ideas by people that generate products of their imaginations stimulating economic growth (Macionis et. al. 1999). A market system develops in this phase, as people start producing goods not just for themselves but to trade with others for a profit. Slowly familial ties and traditions begin to dissolve, as individual confidence and achievement intensifies. It is this phase that folk pottery as a product began to exist separately from the farm as the potter began to market his products within a society that began to adapt. Caldwell's participation in this phase is through the conscious decision to remove the security of a supplemental income. Folk pottery had an increasing market value based on both the needs of the producer and the consumer. Newton recognizes this opportunity, inspired by society and changing needs, in which a leap into sole proprietorship of a business capitalizing on his skills as this marketplace developments. The creation of the Arrow Rock Pottery was a viable option to sustain Newton's livelihood on pottery making alone and not as a side business of farming. The pottery was all that was important to the consumer and whether the culture existed alongside the pots did not matter to the people who demanded storage vessels. Folk pottery had to decide to become a business first

and foremost. It no longer had the support of the farm to extend its cultural heritage.

The d*rive to technological maturity* or growth is a phase of conflict as people or groups intentionally separate themselves from the continuing influence of the past, not necessity motivated by the removal of the past, but rather solidifying their position in the present (Macionis et. al. 1999). The higher standard of living created by an industrialized economy becomes a driving force and decisions are no longer controlled by the past. The community environment begins to reshape because people have the option to be apart of it or not. People can choose their own path within their community or choose to seize economic opportunities, craft specialization, or individual achievement through education. These pursuits allow people to choose how they to spend their time. Traditionally time was dictated by the demands of a lifestyle centred on subsistence. This phase is one of fracture and was felt by the pottery industry leaving potters struggling to define their role and product within a competition based, technologically driven and mechanized marketplace. Specialization of duties in the pottery was how folk pottery factories could compete. It was no longer mandatory to be a generational folk potter, or even a potter at that rate, to participate in the business of pottery making. This altered the forms that were being produced as they were no longer determined by tradition and distinctive lineage traits. It is the success of the Arrow Rock Pottery that fractures Newton from his past and firmly establishes him as a keystone potter linking the previous business model that was the cottage industry with its current one that was evolving as industrialization and modernization

progressed through various industries. The whole industry of folk pottery lost the familial traits such as specific styles of decoration, handle application, glazing, or finishing techniques leaving the origin of the pots indistinguishable, no longer defined by region or potter. The pots began to be fashioned in the styles dictated by market trends driven by consumers, as well as, the businesses themselves. This lack of personal connection to the pottery through the potter was lost and demonstrated through the lack of the maker's mark. It wasn't as important who made the pot, but rather the function the pot played. These new folk forms fit comfortably alongside its utilitarian mass produced competition so well it was nearly lost.

The final stage of modernization is centred on *high mass consumption* and characterized by a dependence upon mass production fulfilling the burgeoning demands of the consumer (Cabak et. al. 1999; Macionis et. al. 1999). People begin to take advantage of the choices and options available generated by a modern economy and established market place. This phase of modernization exposed all of folk pottery's limitations as the competition grew when new complex scientifically-based products of industrialization emerged. Newton was an entrepreneur who saw an opportunity to invest in himself and did this by opening the Arrow Rock Pottery in a town that was established at the trailhead of one the greatest expansions in America's history. There was money to be made and products to sell. Upon opening his business, Newton had an established market. By 1860, the town had a base of 1000 citizens living in Arrow Rock, as well as, the homesteaders moving towards the west who were likely taking a few of his

wares with them. Caldwell sold his factory in 1863. Whether his reasons were personal or business motivated they are difficult or next to impossible to conclusively determine. The unforeseen additions of the glass Mason jar, the simple rubber seal, tin cans, refrigeration and plastics became a sought after substitute for folk forms. The folk potter's once ubiquitous presence was now reduced in the face of new products. Folk pottery was replaced, and potters were forced to seek refuge in the world of art and collectables.

Modernization is an irreversible process, creating an opportunity to view the decisions and adaptations made by the folk potter during the process of industrialization (So 1990). The ramifications of these actions and how they affected folk pottery within the nineteenth century domestic marketplace determined the nature of its continued use or production at that time (Cabak et. al. 1999; So 1990). Modernization changed the business of folk pottery production by separating it into two independently motivated entities. One segment of the culture turned to the business of producing pottery while the other segment chose to uphold their traditional values putting the culture before profit. The business of folk pottery production was enormously successful and reaped the greatest benefits of modernization for awhile, hitting its peak during the nineteenth century. As industrialization progressed, however, market demand changed, labour diversified and mechanization became commonplace, folk pottery production eventually diminished as there was no longer a place for it on America's shelves.

It was through the process of modernization that the cottage industry changed from a family-run endeavour to an established business that found itself alongside other product industries in practically every small town in America during the mid nineteenth century (Stevens et. al. n.d; USCB 1860). It was the immergence of capitalism that fostered the extraordinary growth in all industries and affected them both internally and externally (Orser 1996). Specifically, in folk pottery production, capitalism separated the folk potter from their family thus allowing them to sell their skills to those who had enough capital to buy them (Orser 1996). As well as allowing those who have enough capital to own a pottery business without having to have the skill because they could now buy the skill or labour from those individuals willing to sell it. Capitalism is an active system that exists "between free producers using free labour with free commodities, 'free' is understood as available for sale and purchase on a market" (So 1990; Orser 1996; Wallerstein 1987). In this thesis, the term 'capital' is understood to be wealth whether it is money or assets such as machinery or tools (Orser 1996). It was the separation of labour from the lifestyle of pottery that allowed the folk pottery industry to increase its level of participation in business. The key social relationships created within the new capitalist world economic system are among the owners of capital (individuals, groups, companies or corporations), the resources that can be used to produce goods, and those who transform resources into a need that has worth (Groover 2003: 11). Prior to the development of industrial capitalism, all of these relationships could, and often, were in one community or an individual house hold.

Modernization is a force that restructures a traditional community by creating the desire to participate in industrialization and removing people's long-established roles.

Industrialization provides an opportunity for people to exploit their individual strengths to create or generate capital. Capitalism creates a different mode of distribution of resources (monies, time, labour or skills) through how they are initially sourced and subsequently redistributed (Orser 1996; So 1990). The interrelationships that are generated through modernization, industrialization, and capitalism perpetuate a cycle that causes a community or societies economic sector to grow. Wallerstein explains that capitalism and the growth of the world economy are the two fundamental mechanisms behind global development starting about 1500 (Groover 2003; Macionis et. al. 1999, So 1990; Wallerstein 1984). This "world-system" as he calls it is an organization of exchange relationships between self-motivated commodity producers and consumers, operating in a circular and repetitive loop. Wallerstein re-termed this relationship the *trimodal System* because it is a very different relationship than the Marxist b*imodal System* that is propelled by the build up of surplus and reinvestment of capital (So 1990).

The world-system is an invisible economic structure consisting of a *core*, *semi-periphery* and *periphery* that directs surplus capital towards the centre. According to Wallerstein, the whole structure of the *trimodal* system and its momentum generate an unequal exchange of goods or services between the owners of production and the working class, resulting in an accumulation of a surplus (Macionis et. al. 1999; So 1990). This system operates on all income levels but it is those who control the capital that benefit from it the most, while those who are outside of the core have no influence on the direction that the surplus capital is allocated (Groover 2003; Macionis et. al. 1999; So 1990; Wallerstein 1972). World-system theory can be used to recognize the key aspects

of a society's structure and the issues that can contribute to the decrease or total demise of a need that was so embedded into a culture.

The emergence of world-system theory identifies a complex and multifaceted cycle of dependency where the inequity and distribution of capital or resources and who controls it determines the demise or the strength of an industry (So 1991). It is relevant to folk pottery production by recognizing the expanding relationships between the producer, consumer, stakeholder, the working class and their interactions amongst each other and the impact on the ceramics produced. Caldwell was a potter who was engaged in the business of pottery. When Caldwell chose to disengage from his involvement in the Arrow Rock Pottery his choice to sell to an independent stakeholder, with no ties to generational folk pottery, was significant. This business transaction documents the break in the control of a regionally distinctive folk pottery lineage. When Dr. William Price purchased the Arrow Rock Pottery in 1863, Caldwell returned home to his family where he continued to produce pottery. Currently, there is no document available to establish a solid date of closure for the Arrow Rock Pottery, but upon the death of Dr. Price, 2 years later, the business was transferred to his heirs. Eventually, the Arrow Rock Pottery closed somewhere between 1863 and 1868 and reasons behind its closure are unclear. However, what is clear is how the world economic system recognizes that the capital and resources generated from it could be reinvested into a different endeavour or location. Meaning the money that was generated from folk pottery production did not necessarily have to be reinvested back into the pottery because the owner was not a potter. It was the stakeholder's interest that would be serviced from the surplus capital and because there were no familial ties the stakeholder did not have to respect the business or culture of folk

pottery. The capital generated by the folk pottery factory could now essentially be reinvested into other rival industries, such as metals, and more specifically, tin cans. If folk pottery production never stepped foot out of the woods it would not have had such an impact on the development of American society, but because it did leave the farm it became susceptible to all of the forces that were involved with America's development. Industrialization, capitalism, innovation, changes in infrastructure, labour, mechanization, market diversification, occupational specialization, import, export, and a population increase had its impact on folk pottery and all contributed to folk pottery's demise (Baker 2004; Bourry 1926; Guillard 1971; Isreal 1976; Mack 2006; Mansberger 1990; Webster 1971). The opportunities that were coming along with modernity were seen as more profitable. America simply out grew the need for folk pottery.

6.3 Summary: Folk Pottery's Life on the Shelf

The ceramics produced by the folk potter were once so prevalent in every American home that they were the dominant house wares in the nineteenth century (Guillard 1971; Hewitt et. al 2005; Mack 2006; Webster 1971; Zug 1986). Folk pots existed in so many forms that they were taken for granted and essentially hidden in plain sight. Only as folk pottery started to disappear from view did collectors or experts redirect their attention towards it. Folk pottery is "America's Pottery" for two reasons (Webster 1971). It represents a specific time in America that evokes a romanticised image of America's rustic beginnings. It also physically captures the state of America's ceramic industry before mechanization. It is through retrospective analysis that experts have

identified the era of folk pottery as a chronological period within America's history (Mack 2006; Hewitt et. al. 2005; Webster 1971; Guillard 1971).

Industrialization, as a global phenomenon, changed the course of the ceramic industry and it is the pots themselves that capture its vanishing history (Barker 2004). The entire industry of folk pottery production experienced a complete reversal after industrialization took a foothold in America and modernization changed consumer demand (Cabak et. al. 1999; Macionis et. al. 1999). Modernization segregated folk potters from their traditions and the manner to which their oral histories were passed from one potter to another eventually eroding the distinctive elements of their ware. As the importance of the pot diminished, that decline reduced the relevance of the potter's skill and the power of such skills to provide a reasonable quality of life.

The rapidly modernizing world of late nineteenth-century America abandoned the potter amidst industrialization. The potter still made pots, but the consumer wanted something else. The 1860s saw the emergence of the vacuumed sealed glass Mason jar with both the rubber ring and metal screw top lid; the 1870s introduced the ice refrigerator into the home, while perishable foods such as butter, meat and milk were beginning to be transported in refrigerated containers around America; by the 1880s mass produced low cost pre-moulded glass ware was everywhere; and the tin can was developing alongside these innovations and widely used in America by the 1900s (Busch n. d.; Milner 2004; Webster 1971). These new convenient products greatly diminished concerns surrounding the long term storage of foods. By the late nineteenth or early twentieth century, many potteries were forced to close their doors across America, as each ceramic form, fell out of demand. Folk pottery became increasingly less important

and slowly disappeared. While folk pottery had once flourished near the core of the new American economy, it now was not even competitive, as low-cost products produced somewhere else were shipped inexpensively via boat or railroad to local merchants. Factories in England could now send mass-produced goods cheaply and quickly across the water to the tables of rural America for literally only a few dollars a set (Isreal 1976). Folk potters were now competing heavily with not only rival folk potters but with large-scale ceramic producers with state of the art equipment, numerous kilns, modern manufacturing techniques and marketing strategies (Bourry 1926; Isreal 1976; Mack 2006; Mansberger 1990; Walthall et. al. 1991; Webster 1971).

Folk potters had to adapt to America's new rhythm by making changes to many of the time-consuming traditional methods of production. Locating, digging or processing clay by hand was replaced by commercial clays. Machines such as water- or gasoline-powered pug mills, tractors, jigs saved time, energy and money. Pots were made faster by using moulds or throwing cylindrical forms that could be easily duplicated or pulled off the wheel at an earlier stage of throwing. The pottery was generic, without decoration, allowing the handmade origins of the ware to be unnoticed and so competitive, by blending in with the pots produced by large-scale ceramic industries (Guillard 1971; Webster 1971). Eventually, the folk potter could not adapt any further to inexpensively mass-produced ware and some of the old shops sought survival in the production of unglazed garden ware. Others produced ware for the hotel and restaurant industry, electrical insulators, tiles, and construction materials (Mack 2006; Walthall et.al. 1991; Webster 1971). Folk potters eventually retreated back to the protection of the culture that had previously created them (Webster 1971).

Utilitarian ware during the twentieth century was almost exclusively produced at large-scale pottery sites. No longer did the folk potter have the monopoly on the utilitarian market but survived the process of modernization by going back to their beginnings and producing ware for the art, collector, tourist and specialty markets (Webster 1971; Zug 1986). Although no longer an insular culture, folk potters maintained the integrity of a pre-industrial craft and found their contemporary niche. Folk potters began to sell an experience alongside their hand-made old-fashioned wares, including both functional forms and the unique and playful whimsies (Luck 2003b; Sharkley 1999). Modern folk potters should have been erased by modernization, but the timeless nature and character of folk pottery allowed it to take its place within the Art and Craft movement of the early twentieth century. The handi-craft movement was embraced by American artisans, as this movement protected craftsmen by giving "the individual an opportunity to express his artistic and moral integrity" (Zug 1986: 410). This movement saved folk pottery by linking "art and life" creating a "living folk tradition" (Zug 1986: 411). Once again the integration of art stimulated folk pottery's rebirth, cementing its place in America's future so that others could witness an almost forgotten lifestyle (Dick-Jacobson 2003; Sharkley 1999). It is remarkable how these jars, bottles and churns, which sold originally for pennies a gallon, have become a highly-valued symbol of America's historic beginnings. The pots that were used not much during the twentieth century are the same pots that today generate a sustainable lifestyle for some within our modern culture. Nothing compares to the hand made pot, for it is the appreciation of the pot that can transport the viewer back to a time when life was simpler.

Chapter VII

Conclusion

Newton G. Caldwell was a multi-generational American folk potter who spent his life producing ceramic ware. From Calloway County to Saline County, Missouri Caldwell's involvement in folk pottery production was predetermined by his father. But, it was his own drive and self determination that allows us to define his moment in the history of the America's ceramic industry. The products produced at the Arrow Rock Pottery represent Caldwell's choice to define himself as not only a folk potter but also a businessman. The documentation of Caldwell's decision to hire non- family employees is one example that it was the business of pottery that motivated his choices in the mid nineteenth century. The ceramics produced at the factory in Arrow Rock were unremarkable by design. What make them remarkable is Newton (a 3rd or 4th generation folk potter) and his decision to become a first generation business owner. By leaving the farm and creating the Arrow Rock Pottery, Caldwell's pots represent in actual historic time the moment that folk pottery production became a viable industry that could sustain itself within a competition based market place (Appendix 5). Newton only left the business when he sold the Arrow Rock Pottery; however he did not leave the culture of folk pottery production, and subsequently returned to his family's pottery in 1863.

The presence of nineteenth century folk pottery is disappearing and its influence is beginning to become felt as the last few pots of this era continue to be found. It is through the analyses of this pottery that we begin to recognize the contributions to the history of

America made by the folk potter. Folk potters improved the standard of living at a time in history when the ability to adapt and survive to a new and unknown environment was necessary. America, in the nineteenth century, accepted and fostered a variety of cultures establishing a society that included people based on what they could contribute not who they were or where they came from. The folk potter was willing to create products that solved problems associated with the long term storage of food even when the work was dangerous, exhausting and dirty. It is the physical legacy of the folk pots that are the true treasures, once invisible, are fast disappearing from view altogether.

The typology presented here is the first of its kind for Missouri and chronicles the ceramic remains produced at the Arrow Rock Pottery, established by Newton G. Caldwell, between 1855 to the late 1860s. The analysis of the salt glazed stoneware potsherds and kiln furniture recovered from the Caldwell Pottery factory archaeological site by Dr. Baumann are not unique and demonstrates that they are consistent with ceramic assemblages unearthed from other historic nineteenth-century pottery sites in the states of Illinois (Mansberger 1997; Walthall et. al. 1991), Tennessee (Faulkner 1981) and North Carolina (Carnes-McNaughton 1995). These forms were used in the preparation of food goods produced on the farm to store over the winter season, as well as commercially in local businesses when the steamboat could not longer risk transporting goods or supplies. Perhaps many Caldwell sherds can be found littering the Santa Fe Trail as over land travelers left broken pots behind them on their way to trade their wagons full of goods. The distinctions inherent to these artefacts are valuable in that they can be used alongside these sources in the comparative analysis of new or existing research.

This research has exposed an opportunity to expand upon the classification of the kiln furniture and utensils found, not only at the Caldwell site, but other archaeological sites throughout North America. It is the opinion of this researcher that the unique sherds are an example of the kiln furniture that could be identified through such a comparative analysis of kiln forms. At this time the nature of the piece its use or application is unknown. The standardization of kiln forms would be a valuable contribution by identifying common and unique forms found at archaeological sites, their use and methods involved with their production. Just as different forms are created regionally, based on consumer need or desire, so too was the kiln furniture. Different potters produced the kiln furniture they needed to support the forms unique to them. This analysis has shown that the forms produced at the Caldwell site are similar to those produced at other sites, however there were forms produced at comparative sites that were not found in Caldwell's sample. It is this example that exposes a problem surrounding the identification of kiln furniture or utensils and may have been unintentionally left behind because they appear to be universal. As development continues to extend into rural America kiln sites are slowly beginning to emerge. This kiln furniture comparative study can help to draw connections between a form and the kiln supports used to steady the ware during a costly firing. America's pottery can include a standard set of distinctions for the kiln implements used in the States as it compares to Canada or Europe.

This research could not be captured through science alone and needed the additional strength of the participatory experience that ethnoarchaeology provides. Ethnoarchaeology breathes the humanity back into a science that inherently quantifies, dissects and categorizes material culture in hopes that it will reveal patterns of human

behavior. The strength of the living history not only informs the researcher what the forms are, but their use and methods of production. Another aspect of this kind of research is its ability to witness folk pottery's contemporary role within art. Folk pottery rests within art today out of historic necessity. It is sustained there not only through its historic significance but also its modern distinctions which are explored by the contemporary artisan.

Historic pot sherds have become the tangible evidence of the connection between the potter, the people and the land. America's pottery can be used as a chronological marker of time in the nation's history and its place in ceramic history. Without the artefacts the stories told through them would be removed from their context. It was not so long ago that the world was barely aware of the folk potter and through the connection made between the pots and their historic time a legacy is established. This legacy allows the folk potter to be appreciated as one of the makers of America's melting pot.

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Appendix 1

Compiled by Kathy Burney – Miller (2003) for Dr. Baumann (2003)

STONEWARE ANALYSIS SHEET - CALDWELL POTTERY SITE (23SA451)

FS#_____ Sherd #: ____ Unit: _____ Level:_____ Feature:_____ Location:_____

Form: __Bottle __ Bowl __ Brazier __ Jar __ Drain Pipe __ Jug __ Lid __ Pie Pan ___Indt.

Jar Form: ___Necked ___Straight-Walled ____Incurved ____Shelfed ____Cylindrical ____Indt.

Bowl Form: _____Rounded to Straight Sides _____Incurved _____Shallow Slip Cast ____Indt.

Part: ___Base ____ Body ___ Handle ___ Rim ___ Indt.

Stamped: Y/N Stamped # _____ Marked: Y/N Marked # _____

Placement of Stamp: ___Rim ___Shoulder ___Body Volume Size: _____

Placement of Mark: ___Rim ___Shoulder ___Body Volume Size: _____

Orifice Diam.: _____ % of Vessel: _____ Wall Thickness: _____

Rim Width: _____ Rim Height: _____ Weight: _____

Rim Form: _____ Everted _____ Square Bolster ____ Rounded Bolster

_____ Beaded Bolster ____Tapered Bolster _____ Expanding _____ Direct _____Collared

Other: _____

Base Diam.: _____ % of Base:_____ Base Thickness: _____

Strap Handle- Length: _____ Width: _____ Thickness: _____

Lug Handle- Length: _____ Width: _____ Thickness: _____

Exterior Treatment: _____Shelfed Cordon _____ Ridged Cordon _____Grooves

_____Primary/Secondary _____ None Other: _____

Exterior Decoration: ___Blue Hand Painted ___ Incised ___ Brown Slip ___Red Slip

____Saltglaze ___None Other: _____

Interior Decoration: ___ Brown Slip _____ Red Slip _____ Saltglaze _____ None

Other: _____

Munsell of **Surface**: _____Munsell of **Paste**: _____

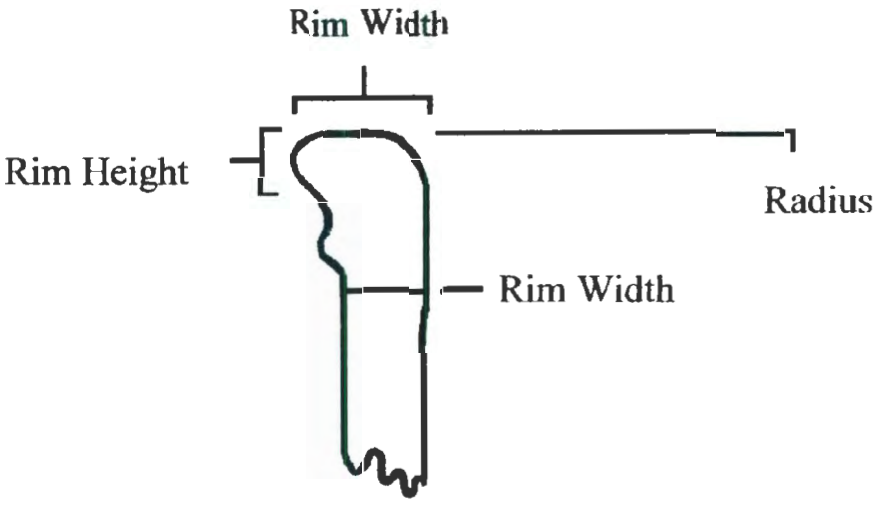
Munsell of **Interior Slip**: _____Munsell of **Exterior Slip**: _____

Wall Angle: _____ Juncture Angle: _____

Comments: _____

Appendix 2

Wall Thickness, Orifice Diameter, Height and Rim Width. Modified from Walthall et. al 's study (1991: 33).



Appendix 3

List of Potteries in the 1800s (Stevens et. al. date unknown).

Town	County	Date	Name
AkinsviCallle	Morgan	1890	Akinsville Pottery
Altenburg	Perry	1840s	Mueller, Johan Christian
Arrow Rock	Saline	1860	Caldwell & McCumber
Arrow Rock	Saline	1850 or before	Arrow Rock
Bolivar	Polk	1886	Dunnegan
Boonville	Cooper	1840	Boonville Pottery
Boonville	Cooper	1862	Valrath, George and Nicholas
Boonville	Cooper	1867	Gegglin, J. M. or Jegglin, J. M.
Boonville	Cooper	1870	Thoma
Boonville	Cooper	1870	Lauer, Nicholas
Boonville	Cooper	1870	Wegrich, Charles
Boonville	Cooper	1894	Jegglin, E. A.
Boonville/California	Cooper/Moniteau	1880s	Blank (?), ?. & August
Bristol	Jackson	1870, before	Woolford, F. (linked to N. Lauer?)
Butler	Bates	1880	Miller
Caledonia	Washington	1840s	Woolford, F. -Washington Stoneware
Calhoun	Henry	1888	Darby & Sons
Calhoun	Henry	1873	Rabine, Ferdinand
Calhoun	Henry	1874	Dawson & Son
Calhoun	Henry	1883	Reeves & Kirkpatrick
Calhoun	Henry	1884	Underwood & Son
Calhoun	Henry	1888	Martin & Sons
Calhoun	Henry	1892	Edwards & Minish
Calhoun	Henry	1870s	Robbins & Son
California	Moniteau	1875	Hoberecht, Albert
California	Moniteau	1875	Gertz, Joseph
Cape Girardeau	Cape Girardeau	1830s	?
Carthage	Jasper	1889	Brown, J. S.

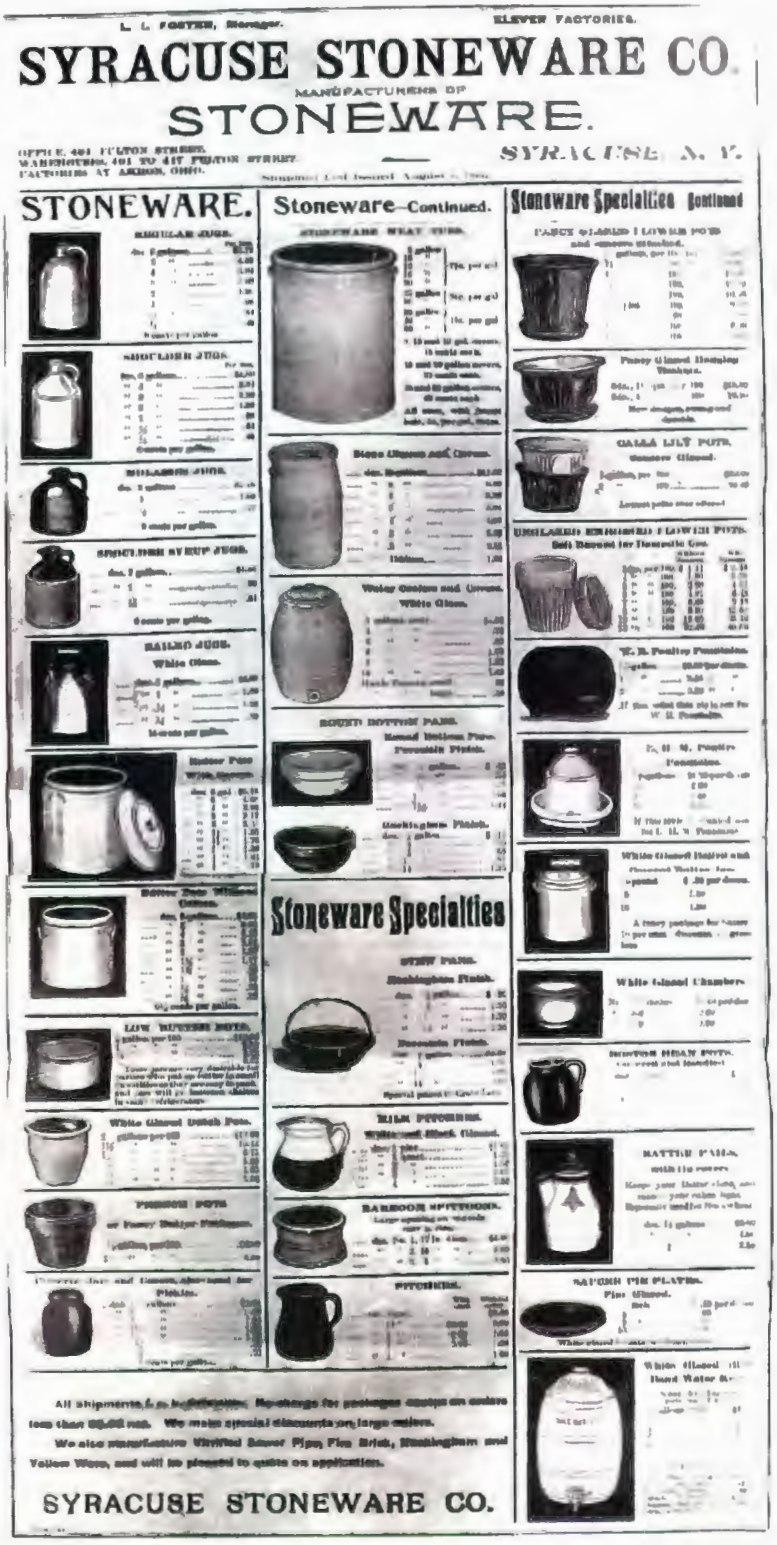
Clapper	Monroe	1885	Danahauer & Winder
Clinton	Henry	1885	Clinton Pottery Co.
Clinton	Henry	1886	Onwider & Carr
Clinton	Henry	1891	Gulf
Clinton	Henry	1892	Ward, F. H. (worker)
Clinton	Henry	1892	Breig, W. (worker)
Columbia	Boone	1890	Clark, J. W.
Commerce	Scott	1839	Austin, A. A. & Co.
Commerce	Scott	1850	Bowen, C. C.
Commerce	Scott	1880s	Rodenbaugh, R. & Son
Commerce	Scott	1880s	Rodenbaugh, I.
Cramners Mill	Pettis	1839	Foster, David C.
Deepwater	Henry	1891	Deepwater
Deepwater	Henry	1880s or 90s	Murphy & Curry
Deepwater	Henry	1900 before	Wassell, W.
Deerfield	Vernon	1871	Redfield, Abram
Deerfield	Vernon	1889	Deerfield
Deerfield	Vernon	1890/1900	Western Stoneware Co. Depot
Dexter	Stoddard	1850	Evans Pottery
Dexter	Stoddard	1885	Dexter
Dexter	Stoddard	1900s	Petters
Farmington	St. Francois	1840s	Woolford, F.
Florence	Morgan	1880-1890	Hummel, J. or J. Hummel & Son
Franklin	Howard	1822	Bridger, Pemberton S.
Gainesville	Ozark	1868	Duggengan
Gainesville	Ozark	1879	Smith, H. A.
Gainesville	Ozark	1887	Lawrence, J. O.
Hermann	Gasconade	1840s	Sohns, George Michael
Hermann	Gasconade	1840s	Shriner, H.
Hermann	Gasconade	1880s	Hoefer
Jamestown	Moniteau	1832	Johans, Christopher
Jamestown	Moniteau	1832	Marshall, John
Jamestown	Moniteau	1850s	Marshall, Marion

Kansas City	Jackson	1888	Missouri Pottery Co.
Kaolin	Washington	1852	Shepard, Elihu
Lakenan	Shelby	1882	McClusky
Lakenan	Shelby	1850s, Late	Huggins & Son
Lamar	Barton	1888	Fancher, N. F.
New Bloomfield	Callaway	1863? after	Caldwell, N. G.
New Bloomfield?	Callaway	1827	Caldwell, T & J
New York	Scott	1848	Icelor or Ficele, C. H.
New York	Scott	1840s	Abcock
New York	Scott	1850s	Jingling (Juengling), Burkhart
New York/Commerce	Scott	1863-1878	Koch, Charles
Paris	Monroe	1860s	Town, J. W.
Perry	Ralls	1876	R. W. Winfree
Pierce City	Lawrence	1883	Purdy, G. S. & G. A. Purdy
Pilot Grove	Cooper	1880s	Huffman, Jacob & Phillip
Poplar Bluff	Butler	1885	Craven
Rocheport	Boone	1844	Cranson, John
Springfield	Greene	1889	Springfield Pottery Co.
St. Charles	St. Charles	1847	Oser, Joseph
St. Joseph	Buchanan	1867	Kemps Pottery
St. Joseph	Buchanan	1868	Bloomfield & McChesney
St. Joseph	Buchanan	1860s	McChesney, J. W.
St. Joseph	Buchanan	1870s, late	Habig, Peter
St. Louis	St. Louis	1814	Ferguson, George W.
St. Louis	St. Louis	1817	Smith, Christian
St. Louis	St. Louis	1821	Taylor & Bradbury
St. Louis	St. Louis	1838	Rimmer, Samuel
St. Louis	St. Louis	1844	Filley, Giles F.
St. Louis	St. Louis	1854	Cunnington, Thomas
St. Louis	St. Louis	1859	Thompson, H. M. & Co.
St. Louis	St. Louis	1860	Schwarzhoff, Charles
St. Louis	St. Louis	1860	Winkle, Joseph
St. Louis	St. Louis	1867	Uhlemeyer, August

St. Louis	St. Louis	1868	Braum, Jacob & Co.
St. Louis	St. Louis	1870	Seeber, August
St. Louis	St. Louis	1874	Grisser, Joseph
St. Louis	St. Louis	1874	Matthes, Ferdinand
St. Louis	St. Louis	1874	Meyer, John & Co.
St. Louis	St. Louis	1874	Moffritz, Mrs. M. A. - MO Pottery
St. Louis	St. Louis	1875	Excelsior Stoneware Works
St. Louis	St. Louis	1888	Gnauk, Louis
St. Louis	St. Louis	1889	Muttig, John
St. Louis	St. Louis	1880s	F. & Co.
St. Louis	St. Louis	1880s	Mo. Stoneware Co.
Ste. Genevieve	Ste. Genevieve	1867	Derchx, L. D.
Stoutsville	Monroe	1887	Conrad, J. W.
Washington	Franklin	1860	Baudissin & Buix
Washington	Franklin	1870	Wihengel (?), Andrew
Washington	Franklin	1870	Glassir & Co.
Washington	Franklin	1872	Glassir & Son
Washington	Franklin	1885	Bayer, J.

Appendix 4

Pottery price list (Webster 1971: 213).



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Appendix 5

Possible Whole Caldwell Jar with a Ridged Cordon (Figure 18).
Small square pad scars can be seen around the top of the rim of vessel.
(Photo by Talva Jacobson).