THE ARCHAEOLOGY OF KENTUCKY: AN UPDATE

VOLUME TWO

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TABLE OF CONTENTS

VOLUME ONE

VOLUME TWO

CHAPTER 8: HISTORIC PERIOD

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INTRODUCTION

This chapter is an overview of previous historical archaeology studies undertaken in Kentucky. As such, it provides a framework within which existing information can be assessed, avenues for future research can be identified, and sites can be evaluated. The chapter begins with a general discussion of the development of historical archaeology in Kentucky. Additional perspectives on the development of historical archaeology in Kentucky are presented in O'Malley and McBride 2007. Then a cultural history of developments in Kentucky from 1775-1945 is presented. The next section summarizes the existing database of historical archaeological sites in Kentucky, followed by a more detailed review of significant historic archaeological investigations undertaken within each of Kentucky's five cultural landscapes (Jackson Purchase, Pennyrile, Ohio Valley Urban Centers, Bluegrass, and Appalachian Mountains; see Chapter 1) and discussion of middle-range theoretical and methodological studies. This is followed by a review of research topics that can be addressed at historic archaeological sites. Finally some of the trends in Kentucky historic archaeology that have occurred over the last 20 years are highlighted and some of the more significant findings are noted.

DEVELOPMENT OF HISTORICAL ARCHAEOLOGY IN KENTUCKY

With a few exceptions, Historic period sites were not investigated by Kentucky archaeologists until the late 1960s. The earliest investigation of an historical archaeological site in Kentucky was undertaken by William S. Webb. In 1936, Webb and William D. Funkhouser described nitre (saltpeter) mining features and artifacts they had discovered during their investigation of rockshelter sites in Menifee County (Webb and Funkhouser 1936). In the report of these excavations, they provided a brief history of nitre mining in the area and described how it was extracted and processed from these shelters.

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[1] Contributions by M. Jay Stottman (Ohio Valley Urban Centers, pp. 1005-1013; and Alexandra D. Bybee (Mortuary Practices, pp. 1058-1061)

It was not until the late 1960s that the attention of archaeologists again turned to historical archaeological sites. Most historical archaeological projects undertaken in Kentucky from the late 1960s to late 1970s were conducted at large urban residences or plantation houses. These studies were oriented toward aiding architectural and landscaping reconstruction or renovation. Projects of this type included investigations carried out at Locust Grove, Farmington, the Eight-Mile House, and Liberty Hall (DuVall 1977; Fay 1986; Fenwick 1980; Granger 1985; Granger and Mocas 1970; Wilson 1975). A few Civil War fortifications and a mill also were investigated during the 1970s, again to provide information that could be used to reconstruct these sites (Janzen 1981; Schock 1978a, 1978b).

The prevalence of reconstruction-oriented studies in the early years of Kentucky historical archaeology is not unique. These types of investigations dominated historical archaeology in most states during the 1950s and 1960s, and were undoubtedly influenced by the archaeological work conducted in conjunction with the reconstruction and restoration of sites like Williamsburg, Virginia. Work at Williamsburg began in the 1950s and continues to this day, although its goals have broadened over the years.

By the late 1970s, archaeologists in Kentucky were beginning to develop a greater sensitivity for and interest in historical archaeology. As a result, more historical archaeological sites were recorded, although they still were not consistently documented during the course of field surveys. Clay (1981:72) noted in 1980 that it was "only in the past five years that historic archaeological sites have been recorded systematically in the state survey." Few of these sites were excavated, and those that were tended to be associated with wealthy individuals (Granger 1983). The reports of intensively investigated sites were descriptive, for the most part, with little emphasis placed on examining and interpreting broad or even specific cultural historical questions. In general, research designs emphasized description of artifacts and features.

In the early to mid-1980s, there was an increase in the number and variety of historical archaeological projects conducted in Kentucky. Reconstruction-oriented projects continued as before, but several research-oriented projects (Carstens 1984; Granger 1983; 1984a, 1984b; Genheimer et al. 1986; OMalley et al. 1980, 1983) were undertaken. The latter were particularly important, since the historical contexts developed and the research issues addressed have provided the foundation for future investigations.

More synthetic and methodological studies also were conducted in the 1980s. These included refinement of artifact identification and analytical methodologies, and investigations of artifact patterning (e.g., Ball 1982, 1984a; Carstens 1986, 1987; Deiss 1985; O'Malley 1984; Wesler 1984a, 1984b). Papers offering explicit critiques of the treatment of historical archaeological sites in Kentucky and support for new levels of respect for and attention to historical archaeological sites also were published (Ball 1983; Granger 1983, 1986; Hemberger 1983; O'Malley 1984).

Although historical archaeology research increased during the 1980s, it was not until the late-1980s that there was a significant increase in the number of large-scale excavations conducted in Kentucky. This work resulted in a greater variety of sites being investigated, including industrial (Genheimer 1987, 1988a, 1988b) and coal mining sites

(Schenian 1987, 1988a). During this period there also was an increase in the development and implementation of detailed problem-oriented research designs aimed at investigating historical archaeological sites. These studies generated information on a variety of research topics, including socioeconomic variation, spatial organization, household formation, ethnicity, and economic development (Fiegel 1988, 1989; Granger 1984a, 1984b; Hockensmith and Pollack 1985; O'Malley 1987b; Schenian 1988a).

In the past 20 years, historical archaeology has increased on the national and state level, and the discipline has even seen the publication of a text book (Orser and Fagan 1995) and an Encyclopedia (Orser 2002). What has happened in Kentucky? The trend of more attention to historic sites, evident in 1987, continued throughout the 1990s and into the twenty-first century. In addition to describing the features found and the materials recovered, historic archaeologists have undertaken more focused artifact studies. Many of these have examined the relationship between the types of ceramics found at a site and the residents' socioeconomic status or wealth. Along these lines, several researchers have examined whether the ceramic type and vessel form assemblages can be related to the transmission of socially meaningful knowledge and its signaling, and the degree to which acquisition of these goods was related to economic and geographical factors, such as transportation and access to markets (Andrews et al. 2004; Andrews and Sandefur 2002; Barber 2005; Day 2004; Day and Clay 2002; Esarey 1993; S. McBride et al. 2003; O'Malley 1995; Pullins 2005; Rotman and Thomason 2003).

Researchers have worked to refine methodologies, such as the use of window glass thickness to date a building's construction or repair episodes, and nail size and types to determine how a building was constructed, (Day 2004; Day and Clay 2002; Fiegel 1989, 19991; McBride and Sharp 1991; Young 1994a; Young and Carr 1993). They also have addressed artifact classification and curation issues (Ball 1998a; 2006a; Hockensmith 1998a; Rotman 2006; Stricker 2007; Wilson and Maples 1998). Faunal remains and plant remains have been analyzed to determine what households ate; if status differences are reflected by the cuts of meat and plants they ate; the degree to which rural households relied on wild game; and the degree to which households incorporated local plants into their diet (Allgood 2004, 2005; Bonzani 2005; Haskins 1998; Martin 1987; Rossen 1992, 1995a, 1995b; Scarry 1993). Since 2000, several researchers have examined the spatial organization of cemeteries and treatment of the dead (Bybee 2003b, 2004; Bybee and Richmond 2003; Bybee et al. 2003, 2004; Favret 2005, 2006; Killoran et al. 2003; Linebaugh 2003; Linebaugh and Phillips 2001; Miller 2007; Ross-Stallings 1996).

A final trend that should be noted is that Kentucky archaeologists have increased their efforts to include the public in their archaeological investigations at historic sites. They have developed educational programming for school children, developed curriculum materials, and prepared public-oriented reports (Henderson and Levstik 2004; Levstik et al. 2004; Stahlgren and Stottman 2007).

CULTURE HISTORY

INTRODUCTION

The initial step in evaluating the significance of an historical archaeological site is to determine when it was occupied and its level of integrity. The second step is to identify the nature and types of research issues that further investigation of a site or a group of sites can address. This chapter presents a culture history for the Historic period and is divided into six subperiods (Pre-Settlement Exploration, Early Settlement, Antebellum, Civil War, Postbellum, and Consolidation and Industrialization). Some historical trends or developments discussed in this chapter overlap these subperiods. For the most part, each trend or topic is discussed primarily within the subperiod when it first achieved major importance.

PRE-SETTLEMENT EXPLORATION: ? - 1775

It probably will never be known exactly when the first Europeans explored what is now Kentucky. Some early candidates, such as De Soto or Moscoso de Alvarado in the sixteenth century, may have passed through the state, although this cannot be documented with any certainty. It is known, however, that by the late-seventeenth century, some parts of Kentucky had been viewed by Marquette and Jolliet on their 1673 trip down the Mississippi River, and La Salle also may have visited the Ohio Valley. At about the same time, the British discovered westward-flowing rivers, such as the New and the Holston, and soon after, received stories of the land beyond the mountains from a released Shawnee captive, Gabriel Arthur. Thus, the long struggle between the French, the British, and the Indians for control over Kentucky and the Ohio Valley was initiated (Alvord 1920).

The French in the Middle Mississippi Valley

When the French attempted to establish a trading base in the Illinois country in the 1680s, much of the Ohio Valley was apparently abandoned, at least of large permanent villages (Hunter 1978:588), but small dispersed groups may have still been living within Kentucky. By this time, many Ohio Valley tribes had become dependents of the Iroquois and were living in the northeastern U.S. The Ohio Valley fur trade was largely controlled by the Iroquois, who traded with the British at Albany (Alvord 1920:78). The Cumberland and Tennessee Valleys were largely controlled by the Chickasaw and Cherokee, who also were beginning to establish trading relationships with the British (Alvord 1920:78).

The first French post south of the great Lakes was Fort Crevecoeur on the Illinois River. Here, La Salle and Tonti attempted to establish trading relations with such groups as the Peoria, Kaskaskia, Cahokia, and Wea. This was detrimental to the Iroquois, who

had acted as middlemen between these tribes and the British, so they destroyed the French post a few months after it was established (Alvord 1920:82). However, the French were not easily discouraged. They built another fort, Fort St. Louis, on the Illinois River in 1682, and over the following twenty years, extended their influence into the middle Mississippi Valley with the establishment of posts and missions at Cahokia (1698) and Kaskaskia (1701). They established trading relations with the Illinois and western Indiana tribes, as well as those living up the Missouri Valley, but except for the Miami, they were largely unsuccessful in extending their trading sphere to the east and southeast.

In 1702, a tannery was established on the Ohio River near present day Mound City, Illinois, by a Frenchmen named Deny. This venture was unsuccessful because of malaria and lasted only one year (Fortier 1969:57). While not actually located in Kentucky, some activities related to this tannery may have taken place on the Kentucky side of the river.

By the second and third decades of the eighteenth century, the French were expanding their operations. On the Mississippi River, Fort de Chartres was built and the village of St. Genevieve was established. Forts Ouiatenon and Vincennes were established by 1720 and 1731, respectively (Alvord 1920:166). Also, during this period, French farmers began settling in the middle Mississippi Valley, especially around Kaskaskia.

Although French traders undoubtedly entered the Ohio Valley and Kentucky, there is no evidence of the establishment of a post or fort during the first half of the eighteenth century within the state. However, small private posts may have been established within Kentucky's borders, especially in western Kentucky. The possibility that a small French trading post may have been established in the vicinity of present-day Nashville, Tennessee in 1714 (Henry 1976) indicates that others also may have existed.

The British in the Ohio Valley

By the late 1720s, the cultural landscape of the Ohio Valley was changing again. Various Indian groups, such as the Shawnee and Delaware, were moving into or returning to the valley (Hunter 1978:591). While initially these Indians continued to trade through the Iroquois and the British posts to the east, by the 1740s, Pennsylvania traders had begun moving into the Ohio Valley and establishing trading houses in the Indian villages (Alvord 1920:87; Rice 1975:3).

By at least 1749, British traders were at Lower Shawneetown, located at the mouth of the Scioto River in present-day Ohio. It is unclear at this time whether the trading houses were on the Ohio or Kentucky side of the river or both. By 1752-54, though, at least one trading house, that of George Croghan and William Trent, was present on the Kentucky side of the Ohio River (Henderson 1999; Henderson et al. 1986:50). There also was another trading house in Lower Shawneetown at this time, but its exact location is less certain. Traders also may have been living at other villages within Kentucky as well.

Another development related to Kentucky that occurred at this time was the beginning of land speculation west of the Allegheny ridge. At the Treaty of Lancaster in 1744, the Iroquois ceded their claim to land south of the Ohio River (Rice 1975:7). Two land companies that received grants of this new land were the Loyal Company and the Ohio Company. These types of companies were largely formed to support and organize settlement, both for their own profit and for the Crown, which saw settlement as part of the larger colonial strategy. Both the Ohio and the Loyal companies soon sent agents to explore the new territory. The representative of the Loyal Company, Dr. Thomas Walker, entered Kentucky through the Cumberland Gap in the spring of 1749. Some of Walker's men built a cabin and planted corn near present day Barbourville, while Walker and others explored Appalachia (Rice 1975:11). Christopher Gist, who represented the Ohio Company, entered Kentucky from the Ohio River. He ventured down the Kentucky and Licking Rivers between 1750-51 and explored the surrounding countryside.

French and Indian War

In 1749, an expedition under Celoron de Blainville explored the Ohio Valley (including Lower Shawneetown, which Christopher Gist later visited) and warned the British traders to leave (Alvord 1920:227). Tensions continued to rise until 1752, when a French and Indian force destroyed Pickawillany, a trading center and Miami village, and captured or killed the resident traders (Alvord 1920:230). This was, in a sense, the beginning of the French and Indian War.

During this period, the Indians living in the Ohio Valley asked the colonies of Virginia and Pennsylvania to protect them, but neither was able to do so. In 1753, the French moved into the forks of the Ohio, and by 1754, when Fort Duquesne was completed, the Pennsylvania traders had abandoned the entire Ohio Valley, and most of the Indians, including the Shawnee, had joined the French (Hunter 1978:592; Rice 1975:13). The British had somewhat better success with the Cherokee, who were initially reassured by the construction of Fort Loudon in their territory in 1756. However, they too had turned against the British by 1760, and a major military campaign mounted in the spring of 1761 was needed to subdue them.

During the French and Indian War, there was little military activity within Kentucky, the central Ohio Valley, and most of the lower Ohio Valley. One French fort, Fort Ascension, later Massiac (Massac), was constructed in the lower Ohio Valley. Built in 1757, it was located on the north side of the Ohio (in present day Illinois) a few miles below the mouth of the Tennessee River. This fort was garrisoned by about 150 Frenchmen and 100 Indians (Fortier 1969:61). It was apparently never attacked, and troops remained there until at least December 1763. When the British finally reached the lower Ohio River Valley in 1765, it had been abandoned (Fortier 1969:68). Whether soldiers were ever encamped on the Kentucky side of the river is not known.

Between 1754 and 1758, the French controlled the trade in the Ohio Valley and visited several villages, including Lower Shawneetown (Henderson et al. 1986:52). Another of these villages may have been Eskippakithiki, possibly located near present-day Winchester, Kentucky (Henderson et al. 1986). It is not known how long the traders stayed or if they constructed any trading or habitation structures at any of these villages.

After Fort Duquesne fell in 1758, the French abandoned the upper and much of the central Ohio Valley. Many Indian villages that were allied with the French, including Lower Shawneetown, also were abandoned at this time. The only area within Kentucky where the French may have retained settlements after 1758 is the western portion of the state, but no definite evidence exists that supports this suggestion.

After the Treaty of Paris in 1763, Great Britain obtained possession of the lands east of the Mississippi River, and Spain, in compensation for the loss of Florida, was given the lands to the west. Most of the French traders and settlers along the Mississippi moved to the western side of the river (Bannon 1974:12). St. Louis, Missouri was founded at this time and soon became the center of the trans-Mississippi trade. In fact, during the entire Spanish period (1763-1804), very few Spaniards entered the Mississippi Valley. Businessmen and settlers of French origin or descent continued to dominate the ethnic makeup of Euro-Americans in the Mississippi Valley throughout the late-eighteenth century (Bannon 1974:11).

After the French traders left the eastern side of the Mississippi River, several British or British-American firms moved in and established offices in such towns as Kaskaskia, Illinois and Vincennes, Indiana. Merchandise was shipped down the Ohio River from Fort Pitt, and furs and skins were shipped up the Ohio or down the Mississippi to New Orleans (Alvord 1920:275).

Again, it appears that much trading activity and settlement occurred around Kentucky's borders. All that can be said at present is that French trappers probably entered western Kentucky on occasion and that at times, Pennsylvania and Virginia riverboatmen probably docked and camped on the Kentucky side of the Ohio River.

The Long Hunters and Land Speculators

As soon as the French and Indian War ended, land speculators and settlers began moving into the Trans-Appalachian lands. Temporarily stopped by the Proclamation of 1763 and Pontiac's Uprising of 1763-1765, speculators immediately began putting pressure on British and Colonial officials to shift the Proclamation line westward. Their efforts were soon rewarded. In 1768, British officials negotiated the Treaty of Hard Labor, in which the Cherokee relinquished their claim to lands east of the Kanawha-New River, and the Treaty of Fort Stanwix, in which the Iroquois ceded all of their lands south of the Ohio River.

The speculators were still unsatisfied and they persuaded the Superintendent of the Southern Department, John Stuart, to renegotiate with the Cherokee. After the Treaty of Lochaber in 1770 and the acceptance of the Donelson Line in 1771, the western boundary was established at the Kentucky River (Rice 1975:34). Soon after, surveyors from various land companies and the Colony of Virginia began entering Kentucky. The aggressive stance of the Virginia government, and the for-profit land companies, rapidly spurred exploration and settlement (Hammon and Taylor 2002).

By the late 1760s, hunters from the east were entering Kentucky for fairly lengthy periods of time. These "Long Hunters," hailing from Virginia, Pennsylvania, and North Carolina, entered Kentucky through the Cumberland Gap or from the Ohio River. They

would stay in Kentucky for months or even years at a time, moving from camp to camp. They explored many river valleys, including the Kentucky, Licking, Cumberland, and Green, and used many Indian and buffalo trails. Some of the more famous hunters include Elisha Walden, Benjamin Cutbird, Simon Kenton, James Harrod, Kasper Manslar, Squire Boone, and Daniel Boone (Belue 1996; Hammon and Taylor 2002; Rice 1975).

The activities of the Long Hunters, especially their exploration and trail blazing, were very important to the later settlement of Kentucky. Many of the hunters also examined land conditions for themselves or others, including land speculators, in the anticipation of future settlement. The information they reported back to land companies or speculators encouraged settlers to move to Kentucky.

EARLY SETTLEMENT/FRONTIER: 1775-1820/1830

If there is any state that is famous for its frontier settlement, it is Kentucky. The exploits of Daniel Boone, James Harrod, and Simon Kenton are nationally known. Settlers passing though the Cumberland Gap or fighting off Indian assaults at their "stations" are images that have entered our national folklore. In fact, there is so much romance associated with the "Dark and Bloody Ground" legend that one has to be careful to separate fact from fiction in historical research. In this section, a brief narrative of the early settlement period of Kentucky will focus on issues that have archaeological relevance or at least provide a context within which to address archaeological issues.

Before proceeding, it should be noted that an exact ending date for the Early Settlement or Frontier period is difficult to identify and therefore somewhat arbitrary. Since the entire state was not settled at the same time, conditions and population density within and between regions was highly variable. Some have suggested that a date of 1795 is appropriate, since this marked the end of Indian hostilities in most of the state. However, settlement did not begin until about 1790 in many localities, especially in parts of the Appalachian Mountains and Pennyrile cultural landscapes. For this chapter, a date of 1820 was chosen for most of Kentucky, since this corresponds to the approximate date of regular steamboat travel on the Ohio River. This development greatly improved communication and trade with the eastern states and Europe and allowed for more commercialization, industrialization, and material goods consumption within Kentucky. Since the Jackson Purchase Cultural Landscape was not open for settlement until 1818, its Early Settlement period is extended to 1830. The Early Settlement period could perhaps be extended until even 1840 in this area, but since this cultural landscape was settled fairly rapidly and was susceptible to the same national and international developments as the rest of the state, post-1830 developments that took place in this area will be discussed in the next section.

Early Settlement and Revolutionary War, 1775-1783

The earliest historic settlements in Kentucky are located in the Bluegrass Cultural Landscape. Following the battle of Point Pleasant (1774) and the Treaty of Pittsburgh

(1775), Lord Dunmore approved settlement south of the Ohio River. Settlers and speculators quickly moved into the Bluegrass region, which was known from the accounts of the Long Hunters. They entered the Bluegrass from the southeast through the mountains, primarily by way of Cumberland Gap and Pound Gap, or from the northeast down the Ohio and Kentucky rivers. The river route was more expensive, and most could not afford it. Settlers from the Piedmont and western North Carolina and from western Virginia entered primarily through the gaps, while those from Pennsylvania, western Maryland, and western Virginia generally came down the Ohio River.

The first settlements occurred at Harrodstown (March 1775, now Harrodsburg) by people who came down the Ohio River, and at Boonesborough (April 1775) by individuals who passed through the Cumberland Gap. Harrodstown was actually laid out the year before, but the surveying party returned east afterward. Hammon and Taylor (2002) provide a detailed account of the early surveying parties. Their account suggests that many of the initial surveys were fairly accurate. This is interesting since Kentucky became famous for its series of overlapping land claims and resulting boom in legal cases and lawyers. By 1780, there were three clusters of settlements in Kentucky, one at the Falls and Beargrass Creek, one north of the Kentucky River, which included the Lexington area and the southern fork of the Licking River, and one south of the Kentucky River, which included the Harrodstown, Danville, and Logan's Fort areas (Rice 1975:120).

Early settlers were well aware of Indian dangers and initially settled in or around forts or stations. The degree of variation in stations is remarkable (see O'Malley 1987b, 1999a). They ranged from a single fortified cabin or blockhouse to what was almost a fortified town, with multiple cabins within a stockade, such as Bryan, Ruddles, or Strode station. The larger stations seemed to have been inhabited by multiple families, especially during the warmer months when Indian raiding parties were a problem. Some authors suggest that some settlers lived in cabins outside the stations during periods of lessened warfare (Chinn 1975:101; Ellis et al. 1985:5-7; O'Malley 1987b, 1999a; Perkins 1998; Rohrbaugh 1978:29). At a minimum, the settlers planted corn and built cabins to establish their claims. The extent to which these isolated cabins were occupied during the first few years of settlement, however, is unclear, and many claims by speculators likely had only very crude structures, sometimes as little as four poles laid on the ground in a square as an improvement, and probably not occupied (Aron 1993, 1996).

The early Kentuckians picked an unfortunate time to start their settlement. The Revolutionary War was beginning and the Ohio Valley Indians, particularly the Shawnee, were generally allied with the British. This gave the Shawnee extra incentive to attack the new American settlements. Indian-Euro-American warfare in the Bluegrass Cultural Landscape was particularly violent in 1777, the year of "the terrible sevens," and resulted in the abandonment of many Euro-American settlements in Kentucky. Settlement and resettlement continued the next year, but at a less rapid pace. In fact, settlement remained slow until the end of the Revolutionary War, in 1783, when warfare subsided.

Early Economic Development

When the Revolutionary War ended, Kentucky had a relatively low population (in 1782, Kentucky had only about 8,000 people [Rohrbaugh 1978:25]). Because of warfare and other uncertainties, agriculture was probably limited to very basic crops (Chinn 1975; Cotterill 1917; Rice 1975), and many families were forced to cultivate common lots surrounding stations (Rohrbaugh 1978:29). A wide variety of wild game was very important as a source of food in the early settlement years, but over-exploitation led to quick shortages and subsequent emphasis on farming (Belue 1996; Friend 1999b; O'Malley 1999a). The primary crop was corn (with tremendous yields of up to 60 bushels an acre initially reported, see Friend 1999b), but tobacco, hemp, flax, and wheat also were grown. Hogs, cattle, and horses were kept, and wild game was undoubtedly an important part of the diet, even if less so than the first years of settlement (Aron 1996; Cotterill 1917:246).

Some trade did take place during this period. Furs, livestock, and surplus crops were carried east overland, especially across the Wilderness Trail (Gronert 1919:313), and local exchanges of goods were probably common. To handle this exchange, stores or trading houses were set up in stations and forts. Richard Henderson established such a store at Boonesborough soon after its establishment. Also, itinerant peddlers carried colonial American and European items into the frontier. Since currency was scarce, storekeepers accepted a variety of items as barter, including crops, whiskey, homespun cloth, livestock, furs, and ginseng (Perkins 1991, 1998). Lexington quickly became a commercial center with widespread availability of goods (Aron 1993, 1999). There are many stereotypes and even some period accounts that stress the harshness of life and scarcity of goods on the Kentucky frontier. Yet some accounts also emphasize the rich nature of the land, characterizing Kentucky as a "good poor man's country" where huge crop yields would assure success and the standard of living was very high (Aron 1996).

Early industry generally consisted of grist mills, which ground grain for the personal use of farmers, small salt works, potteries, and blacksmith shops. Home production, including weaving, tanning, sewing, and distilling, also occurred during the initial settlement period (Cotterill 1917:248).

One Revolutionary War site that deserves special mention is Fort Jefferson, which was a military fort established by George Rogers Clark in present-day Ballard County. It was occupied by a large number of troops from 1780 to 1781 (Carstens 1984, 2004a; Fraser 1983).

Post-Revolutionary Period, 1783-1800

After the Revolution, the population of the Bluegrass Cultural Landscape increased dramatically, to the extent that many eastern residents wondered what the "buzzel" was about Kentucky (Friend 1999a). Hammon and Taylor (2002) suggest that depleted soils in eastern and piedmont Virginia was one major push factor. The role of land speculators and promoters such as John Filson, who made Daniel Boone into a legend (see Faragher 1992; Smith 1999), should not be discounted, nor the role of the land grant for military service system (Hammon and Taylor 2002). By 1784, the settlers

had reached 30,000, an increase of nearly four-fold since 1782 (Rohrbaugh 1978:25). By this time, settlers had established farmsteads away from the stations and forts, and some stations were becoming real towns, such as Georgetown, Danville, Stanford, and Lexington. Some stations were still being established, such as Morgan's in Bath County in 1789 (Enoch 1997).

Immigrants from the east at this time were not restricted to the lower and middle classes, as some gentry or sons of gentry also settled in the region. These early gentry came primarily from the piedmont and valley of Virginia, although some came from Maryland and North Carolina (Abernethy 1962:67; Barnhart 1941:19-22; Coleman 1940:15; Fischer and Kelly 2000; Jordan and Kaups 1989; Koons and Hofstsra 2000). This gentry, as well as some successful early settlers, established large agricultural plantations that incorporated slave labor, first in the Bluegrass Cultural Landscape and later in portions of the Pennyrile Cultural Landscape. For the purposes of this chapter, a plantation is defined as a large agricultural unit (about 500 acres or more) that focused on the production of one or two cash crops and utilized a slave labor force.

By 1790, there were already over 12,000 slaves in Kentucky. Tobacco, hemp, grains, and livestock were grown on both the small and large farms (Cotterill 1917:235). Tobacco was chosen not only because it grew well in Kentucky soils, but because it had a favorable relationship between bulk and value, and a low rate of spoilage (see Earle and Hoffman 1976). These were important factors, given the limited transportation routes in Kentucky.

The family names of early settlers indicate that most were of English background, but a large number were of Scottish or Scotch-Irish descent and some were of German descent (see Sanderlin 1987). Fischer (1989) and Fischer and Kelly (2000) argue that the Kentucky region of Virginia was heavily settled by families from the border area of northern England/southern Scotland, and Northern Ireland, which had developed a distinctive border culture that was particularly pre-adapted to the political and environmental situation of Kentucky. For example, they credit the spread of the log cabin to this tradition rather than the German/Swedish influence with which it is more often connected (Fisher and Kelly 2000:122). While many of these settlers were undoubtedly born in America, they may have retained some distinctive beliefs and behavioral traits associated with their national (ethnic) background. For example, Fischer and Kelly (2000) note that contemporaries criticized some Virginia German settlers for not supporting the local economy by putting their wealth into consumption of household goods.

After the Revolution, settlement in Kentucky also spread into the Pennyrile Cultural Landscape. The areas around Elizabethtown, Greensburg, and Russellville, in particular, became early population centers. Settlers came from Virginia and North Carolina as well as the Bluegrass Cultural Landscape and the Nashville Basin. Since Indian raids continued in these newer and less densely populated areas, settlement was still somewhat clustered around forts or stations. The earliest settlements occurred where major trails crossed a major river (Sauer 1927:136). Timber and timber-barren edge land were favored initially. The pure barrens were avoided because of lack of timber, which was needed for firewood, housing, and fences, and because this land was of questionable fertility (Ramage 1977:172; Sauer 1927:135).

By the late 1780s, settlement was well under way along the upper and middle Green River, in the Barrens, and in the Southern Plains, which includes present-day Logan and Christian counties, of the Pennyrile Cultural Landscape. Settlement had even reached as far as the mouth of the Cumberland River by 1791. The first three county seats established outside the Bluegrass Cultural Landscape were founded in 1792 in Logan, Hardin, and Green counties. Generally, the same crops and livestock were raised in the Pennyrile Cultural Landscape as in the Bluegrass Cultural Landscape. Some tobacco plantations also were established in some of the richer soil zones of the Pennyrile by the late 1790s (Martin 1988; Sauer 1927). Historical study of early settlement of the Green River drainage suggests it started off in a more democratic way, with attempts to equalize land distribution, but eventually succumbed to centralizing forces such as land speculation and control by banks (Aron 1996; Waldrep 1999).

By the late 1780s and early 1790s, settlers also had begun moving into the Appalachian Mountain Cultural Landscape. While some of these settlers came from the Bluegrass Cultural Landscape, most entered the Kentucky from the east through the mountain gaps, especially Cumberland and Pound, and then progressed down the larger rivers, particularly the Kentucky, the Cumberland, and the Big Sandy (McClure 1933; Scalf 1966). The first settlements or stations in this region are Harmon's Station (1788) near the confluence of John's Creek and the Big Sandy, and Vancouver's Station or Trading Post (1789) near the site of present day Louisa. Although both stations were at least temporarily abandoned because of Indian raids, they did signal the beginning of settlement in this cultural landscape. Other early settlements include Preston's Station, the Sellards Settlement on Buffalo Creek, the Leslie Settlements on Pond and later Sycamore Creek, and Paint Lick Station (see Crowe-Carraco 1979; McClure 1933; Scalf 1966).

These mountain settlements tended to be fairly clustered and situated off the main trails, since Indian incursions continued somewhat later in the mountains than in the Bluegrass Cultural Landscape, at least in the latter's more settled regions (McClure 1933:88). Agriculture remained at a subsistence level longer in the Appalachian Mountains Cultural Landscape than in the rest of Kentucky. Some tobacco and grains, as well as furs, hides, and ginseng, were produced or obtained for trade with people living in Virginia and the Bluegrass Cultural Landscape (Crowe-Carraco 1979:23).

The rate of settlement was relatively low in the Appalachian Mountains Cultural Landscape in comparison to that of the Bluegrass and Pennyrile cultural landscapes (McClure 1933; Scalf 1966). The lateness in settlement and sparse population is reflected in the fact that it was not until 1799-1800 that the first counties, Knox and Floyd, were founded in the Appalachian Mountains Cultural Landscape.

One question that is often asked is why people settled in the mountains when superior lands were available to the west? First, much of the best land, in the Bluegrass Cultural Landscape at least, had been taken up by grants or claims, or had been set aside as military warrants and were fairly expensive to purchase (Aron 1993, 1996, 1999; Friend 1999b; Hammon 1986; Ramage 1977; Rohrbaugh 1978:32). It also should be noted that most early settlement in the Appalachian Mountains Cultural Landscape was on river or creek bottom land, which was better suited for agriculture. It was not until later, as the population grew, that people turned to the less productive slopes and ridge

tops. Also, because rivers, as well as foot or bridal paths, were the major means of transportation in all regions, the Appalachian Mountains Cultural Landscape was relatively less isolated than it would become later.

Demographic and Economic Development to 1792

By 1790, when the first U.S. census was taken, Kentucky had a population of 73,677. This included 61,133 Euro-Americans, 12,430 slaves, and 114 free African Americans. Population density for both Euro-Americans and African Americans was greatest in the Bluegrass Cultural Landscape, especially the Inner Bluegrass Section. Exact figures by landscapes are difficult to obtain, since at that time, most counties were large and cross-cut cultural landscapes. The population of the southern and eastern Pennyrile Cultural Landscape, however, has been estimated at about 5,000 in 1790 (Sauer 1927:13). The population of the Appalachian Mountains Cultural Landscape must have been much lower.

The social structure of the state, especially in the Bluegrass Cultural Landscape, became more complex throughout the 1780s, especially as Lexington was established as a center of commerce and culture. Aron (1999) argues that the Kentucky elite tried to recreate social hierarchies found in eastern and piedmont Virginia, and that a very stratified social and economic structure was quickly established, such that by 1792, only one-third of white males owned land (Aron 1996; 1999, see also Arnow 1960 for an early treatment of land concentration in the Bluegrass Cultural Landscape, or Eslinger 1999; Friend 1999a, 1999b). By 1800, more had gained land, but still less than half were land owners (Friend 1999b). Winship (1999) and Terry (1992) show how several groups of interrelated elite families, such as the Breckinridges and Prestons, came to strongly influence land ownership and settlement patterns in Kentucky.

The presence of planters, farmers, merchants, tradesmen, and slaves denotes a more complex social arrangement than was found a decade earlier. Slaves in Kentucky were often rented out when farm needs were low, a necessity if slavery was to remain economically viable in the mixed farming economy of Kentucky. This created a situation where slaves were often directly competing with white wage labor, and established early tensions between the two groups (Aron 1996, 1999).

During the late 1780s, more agricultural surplus was produced and shipped down the Ohio River. The first large load of Kentucky produce was floated down the river to New Orleans in 1787. Flatboats from Kentucky were so common that they began to be called Kentucky boats (Grier 2001). While New Orleans continued to be a somewhat unreliable port until the Louisiana Purchase in 1803, this trip did signal a new period of trade. An increased demand for tobacco after the war encouraged greater production of this crop (Smith 1950:4). During this period, trade developed that involved 1) sending Kentucky goods to New Orleans; 2) sending these goods, or receipts for their value (since currency was scarce), to Eastern ports; and then 3) transporting Eastern or European manufactured goods to Kentucky via Pittsburgh (Wade 1959:42).

Improvements also were made in the road network, which consisted of widening some roads for wagons and creating new roads, such as the New Road to Kanawha in 1792 (Cotterill 1917:231). With statehood came the beginnings of state-funded or

authorized transportation improvements. Notable early developments include road authorizations, such as for a wagon road from Frankfort to Cincinnati in 1793, or the first act to regulate public roads in 1797. Still, most early transportation improvements were private, such as the early line of packet boasts from Cincinnati to Maysville in 1793, or authorization of the first turnpike in Kentucky in 1797 on the Crab Orchard to Cumberland Gap road. In 1799, passenger boats begin to ply the Ohio River (Hepner and Whayne 1992). These improvements made travel within the state and to Virginia, North Carolina, and the Nashville Basin easier and quicker. Ferries across rivers or larger creeks became central to the transportation network, and were regulated by the state (Ellis 2000; Grier 2001).

The surpluses in tobacco during this period rose at such a rate that quality control was necessary. By the early 1780s, tobacco inspection stations were established on the Kentucky River and at the Falls of the Ohio (Smith 1950:41). Later, many more inspection stations were established along the Ohio River and along rivers and trails in the Bluegrass and Pennyrile cultural landscapes. Inspection stations for other products, especially hemp, soon followed (Hopkins 1938). The inspection stations or warehouses tended to have a centralizing effect, and other structures, such as stores and inns, often were established nearby (Smith 1950:41). Inspection stations established in previously existing towns aided in the growth of these towns.

The somewhat improved transportation system and the increase in surplus production led to greater consumption of non-local goods. Analysis of store accounts and newspaper advertisements indicate that by the 1790s, Kentucky stores were stocking many fancy imported items and Kentuckians were purchasing them, or at least bartering goods for them. These items included European ceramics, pewter, and cloth, as well as Chinese cloth (Perkins 1991, 1998). Lexington residents were noted for their lavish living as early as 1789 (Aron 1996; Coleman 1940:16).

While Kentucky was mostly rural in population distribution in 1790, some urbanization had occurred by this time. Lexington had reached a population of 834 persons and contained about twenty mercantile establishments by 1792 (Perkins 1991, 1998; Share 1982:9). Other large towns included Washington (462 persons), Bardstown (216 persons), Louisville (200 persons), and Danville (150 persons) (Cotterill 1917:244). All towns of any size were, or soon would be, county seats. Numerous smaller towns and crossroads hamlets also had been established by this time. According to the prominent social historian Darrett B. Rutman (1994), town formation is one of the most essential processes of historical settlement, but has been neglected in scholarship of areas where agriculture dominated the economy (as is true of Kentucky and the south).

Throughout this period, industry became somewhat more diversified. Besides the grist mills and home manufacturers, new factories that produced hemp products (rope, bagging, and cloth) and tobacco products (snuff, cigars, and twists) were established in some towns and rural areas, and as early as 1791, or possibly earlier, an iron foundry was in operation on Slate Creek in Bath County, which had an associated blockhouse for protection (Enoch 1997, see also Eubank 1927:9; Hopkins 1938:61; Wade 1959). This furnace supplied cannonballs for the War of 1812 (Enoch 1997). Salt works also were established at licks and other locations. The unfavorable balance and cost of trade that

resulted from poor transportation encouraged local industrial growth (Gronert 1919:317; Share 1982:31).

Statehood and the End of Indian Hostilities

By 1791, Kentucky had attained enough population and sense of independence to apply for statehood. This required permission from Virginia, the parent state, and the Federal Government. Statehood was granted in 1792, and Kentucky became the 15th state. In 1793, the first line of Ohio Packet boats was established at Cincinnati and a few roads were authorized by the state, such as the 1794 Cumberland Gap to Hazel Patch and Crab Orchard (Hepner and Whayne 1992).

The next important date in Kentucky's settlement history was 1795. This marked the Treaty of Greenville, which followed General Anthony Wayne's victory at Fallen Timbers. In this treaty, Ohio Valley and Midwestern Indians relinquished all claims to Kentucky. This soon removed the Indian threat in the state, although some attacks continued into 1796 (Enoch 1997). Threats continued in the Jackson Purchase Cultural Landscape, which was controlled by the Chickasaws. The lessening of danger resulted in greatly increased migration to Kentucky. Between 1790 and 1800, the population of the state rose from 73,677 to 220,955, and the number of slaves increased from just over 12,000 to 40,433. Many new farms and even some plantations were established, and many in the older established regions, particularly the Bluegrass Cultural Landscape, began to take on an air of permanence. A total of 41 counties had been formed by 1800.

Lexington was by far the largest city in the state in 1800, with a population of 1,795, which included 461 African Americans, and a functional position as commercial, industrial, and intellectual center of the state. It contained two newspapers, a paper mill, a tobacco factory, a gunpowder mill, a pottery, and a tannery (Davis 1927:167). Lexington also had a college, Transylvania Seminary, which had moved there from Danville in 1787.

DEMOGRAPHIC AND ECONOMIC EVELOPMENTS, 1800-1820

By 1800, many towns in Kentucky, such as Lexington, were beginning to look more like towns further to the east. In Lexington, log structures were being replaced by brick and frame ones, and class lines were being drawn, with merchants occupying the top rung (Wade 1959:102-107). Lexington's rapid growth resulted from its advantageous position on the cross-roads of many important overland trails. It not only became the service and industrial center for the rich Inner Bluegrass Section, but it also functioned as the supply center and stopover point for settlers moving west (Wade 1959:8). In effect, Lexington was Kentucky's "Frontier Town," to use the terminology of Kenneth Lewis (1976, 1984). It had many of the same services found in many larger cities to the east.

Louisville, with its strategic position at the Falls of the Ohio, still had a population of only 359 in 1800. Among these individuals were 77 African Americans (Share 1982:5). Its growth was hampered by its unhealthy location near numerous swamps. In

fact, Louisville was known as "the Graveyard of the Ohio" because of these problems (Wade 1959:17). Frankfort, which had been designated the State Capital in 1792, had a population of 628 in 1800, which made it the second largest city in the state. All other towns of any size were county seats, with the largest including Washington, Paris, Georgetown, and Shelbyville, all located in the Bluegrass Cultural Landscape. New towns of growing importance included Newport (106 people), Russellville (117 people), and Henderson (205 people).

By 1800, several other schools or academies, such as Transylvania in Lexington, Salem Academy in Bardstown (1788), Kentucky Academy in Pisgah (1794), Bethel Academy in Jessamine County (1795), and Franklin Academy in Washington (1795), had been founded. Most were boarding schools. Numerous churches also were established at this time and in the first decade of the nineteenth century the Shakers established two communities: Pleasant Hill in Mercer County and South Union in Logan County (Clark and Ham 1968; Stein 1992).

Between 1800 and 1820, much of Kentucky went through a maturing process in terms of settlement patterns, agricultural practices, social and economic structure, and political organization. By 1810, the population of Kentucky had increased to 406,511, which included 80,561 slaves. Most of these slaves were centered in the Bluegrass Cultural Landscape, where they accounted for up to 40 percent of the population in some counties (Davis 1927:195). The Plains and Eastern sections of the Pennyrile Cultural Landscape also had significant numbers of slaves.

The 1800s and 1810s were a period of growth and speculation in Kentucky. The economic boom in the 1810s, in particular, led to high prices for agricultural products, including tobacco, hemp, flour, and livestock. This encouraged increased commercialization of farming and a growth in slave plantations. Farmers and planters prospered, and finer homes were built, especially in the Inner and Outer Bluegrass sections of the Bluegrass Cultural Landscape (Davis 1927:123). Increased agricultural production led to the establishment of more inspection stations for tobacco, hemp, and other crops. By 1810, there were 42 inspection stations on the Kentucky River alone (Smith 1950:23).

Large farms and plantations occurred primarily in the Inner and Outer Bluegrass sections of the Bluegrass Cultural Landscape, while the Eden Shale and Knobs regions of the Outer Bluegrass Section primarily contained small farms. Variation in types of farms by landform and soil type within each cultural landscape should be investigated (Raitz and O'Malley 1985). Information also is needed on architecture characteristics of residences and outbuildings, farm size and layout, socioeconomic variation, and access to and consumption of material goods.

The Pennyrile Cultural Landscape also grew throughout the 1810s. The population of this area was about 100,000 by 1810 and had reached nearly 200,000 by 1820 (Sauer 1927:132). The commercialization of farms in this area, especially those with slaves, led to the clustering of plantations in areas of higher soil quality. By 1820, the main slave counties of this cultural landscape were Logan, Christian, Barren, Warren, Green, and Henderson (Martin 1988:209). As noted previously, a similar clustering of plantations had occurred 20 years earlier in the Bluegrass Cultural Landscape.

The Appalachian Mountains Cultural Landscape also experienced growth at this time, although it was not as dramatic as in the rest of the state. The population of this cultural landscape increased from 20,297 in 1810 to 34,602 in 1820. By 1820, there were eight counties in the Appalachian Mountains Cultural Landscape. Although agriculture in this cultural landscape was not as commercialized as in the other cultural landscapes, grains, livestock, hides, and furs were traded to the Ohio Valley, the Bluegrass Cultural Landscape, and western Virginia.

Urban centers and many industries experienced a great deal of growth between 1800 and 1820. By 1810, Lexington was by far the largest city in Kentucky, with a population of 4,326, including 1,594 African Americans. Louisville, which had taken advantage of the increased use of the rivers after 1803, was the second largest city, with a population of 1,357, including 500 African Americans. Frankfort ranked third, with 1,099 people. In the Pennyrile Cultural Landscape, Russellville was the largest city, with 532 people in 1810, followed by Henderson, with 160, Bowling Green with 154, and Greenville with 75 people. Towns in the Appalachian Mountains Cultural Landscape remained very small throughout the early settlement period. The largest towns in the state also were county seats. They generally had a similar layout, with a courthouse square surrounded by a commercial area, which in turn was surrounded by residences.

The economic boom of the 1810s also led to a great deal of town speculation, especially in western Kentucky and along the Ohio River. Many of these towns did not survive or get beyond the planning stage, but some, such as Covington (1815) and Owensboro (1819), did survive and later flourished (Sprague 1974:339).

The supply demands of the War of 1812 led to an industrial boom in Kentucky. The war stimulated demand for gunpowder, 90 percent of which came from Kentucky. By the mid-1810s, there were six gunpowder mills in Lexington and nitre production was at its peak in Mammoth Cave in the Pennyrile Cultural Landscape and in the Appalachian Mountains Cultural Landscape (Coy et al. 1984; Fig and Knudsen 1984). The war-time demand for rope led to an increase in hemp factories, especially in Lexington and Louisville. The iron industry also grew at this time.

After the war, the demand for gunpowder lessened, which hurt the powder industry and the nitre mines. In contrast to the decreased demand for gunpowder, there was increased demand for hemp products, and the iron industry continued to grow. The great migration and expansion of cotton culture into the deep South after 1815 (Wade 1959:164) resulted in an increased demand for bagging and rope, which stimulated more farmers to grow hemp (Clark 1929).

As the iron industry grew, furnaces were established in the eastern portion of the Bluegrass Cultural Landscape (Bath County), and in the western and northern edges of the Appalachian Mountains Cultural Landscape (Estill and Greenup counties, respectively) (Eubank 1927:14). Also, foundries were operating in Lexington and Louisville in the 1810s (Wade 1959:52). Other industries that grew in the early-nineteenth century include nail factories, potteries, cotton mills, woolen mills, saw mills, large stationary distilleries, and boat yards (see Martin 1988:69; Ramage 1977:189; Share 1982:6; Wade 1959:51, 65, 71). It should be noted that much of the labor force for these early industries, particularly in the cities, consisted of slaves (Wade 1959:52).

Because of the increased river trade, Louisville grew at a faster pace than Lexington. This was especially apparent after the arrival of the steamboat "New Orleans" in 1815. The overall impact of the steamboat is difficult to imagine today, but it was dramatic and completely reoriented trade. Although the age of the steamboat on the Ohio did not really arrive until the 1820s, the advantage to river towns was already apparent by ca. 1815, and Lexington was beginning to feel the strain. When the Panic of 1819 occurred, Lexington, because of its unfavorable location, was affected to a greater extent than other communities.

The Panic, which began a recession that lasted into the middle 1820s, lowered demand and prices for agricultural and industrial products throughout the state. Hemp, and Kentucky in general, was especially hard hit. The price of hemp hit rock bottom during the early 1820s because of its symbiotic relationship with cotton, which was over produced. Of the eight hemp factories operating in 1819, only one was extant in 1820 (Aron 1996; Wade 1959:107). Many merchants, planters, and bankers who were involved in land and town speculation, were devastated.

By 1820, the end of the early settlement period, Kentucky had a population of 564,317 people, including 126,732 slaves. Lexington was still the largest city, with a population of 5,279, but Louisville, with a population of 4,012, was closing the gap. The effects of river transport, and especially the steamboat, can be gauged in the growth of Cincinnati, which was smaller than Lexington in 1810 but over twice its size in 1820. After 1820, Lexington was reduced to a local distribution and production center. Only its college, Transylvania, and its political leaders gave it prominence beyond its own hinterland.

Transportation improvements continued in this time period. In 1801, the Kentucky River Company was authorized to clean up the river and charge tolls. Turnpike companies provided similar services on roads, such as the Lexington and Louisville or Maysville and Lexington companies (organized in 1817), or the Georgetown and Cincinnati Turnpike Company (1819). In 1803, the first stage service was available from Lexington to Olympia Springs, with service from Louisville to Wheeling, West Virginia in 1817 and from Lexington to Cincinnati in 1818. An important development was the 1818 charter for construction of a canal at the Falls of the Ohio. State-supported funding came both from the state treasury, such as the $38,133 drawn in 1818 for river improvements, and from special fundraising efforts, such as the 1811 lotteries, to raise funds for both road and river improvements (Hepner and Whayne 1992).

Jackson Purchase Cultural Landscape

The decade of the 1810s also saw the opening of the last unsettled section of Kentucky: the Jackson Purchase Cultural Landscape. This land, which lies between the Tennessee and Mississippi rivers, was acquired from the Chickasaws in a treaty signed October 19, 1818. Since this date came one year before an economic recession (the Panic of 1819), and settlement was delayed until the completion of the U.S. Government survey, initial growth was slow. By the mid- to late 1820s, settlement had begun to pick-up. The first county formed in this cultural landscape was Hickman (1821), with its

seat at Columbus. By 1824, there were four counties: Hickman, Calloway (1822), Graves (1823), and McCracken (1824). This number of counties would persist until the 1840s.

Since the Jackson Purchase Cultural Landscape was situated near previously settled areas and there were no hostile Indians, its early settlement took on a much different form than the frontiers of the rest of the state. In general, settlement here was more rapid and the frontier period was much shorter. The land quality in the Jackson Purchase Cultural Landscape was highly variable, which resulted in a very dispersed settlement system. There were no defensive stations and larger planters came in from the start. The loess uplands were the first lands settled, followed by the Barrens and Flatwoods (Davis 1923:172). The primary towns were all county seats, and most of these were small. Columbus, which was the only county seat on a major river, was the only town of any size before 1830. It was not until the 1830s, when Paducah developed, that a real city was established.

Besides farms and towns, the Jackson Purchase Cultural Landscape contained many crossroads hamlets, isolated stores, and river landings. In fact, in the early twentieth century, it still contained the greatest density of hamlets in the state (Davis 1923:141). These were necessary, since poor transportation limited the distance farmers could travel to buy merchandise and sell produce. In 1820, the Jackson Purchase Cultural Landscape was not enumerated separately, so no population figures are available. By 1830, the population was 14,163.

ANTEBELLUM: 1820-1861

By 1820, regular steamboat traffic was occurring on the Ohio River. This breakthrough in transportation greatly improved the cultural and economic ties of Kentucky with the East Coast, the deep South, and Western Europe. It also led to increased complexity in social, cultural, political, and economic institutions within the state, a process that had begun as early as 1800 in the Bluegrass Cultural Landscape and a decade later in much of the rest of Kentucky. The Antebellum, therefore, can be viewed as a time during which the processes of increased complexity begun in the later years of the Early Settlement subperiod were completed. As a result, the institutional organization and behavioral patterning of the state became similar to that of most Eastern states. Changes that occurred during the Antebellum tended to occur at a slower rate than those of the previous subperiod. Also, as transportation and communication systems were improved, Kentuckians were more immediately affected by broader national and international developments, such as increased industrialization. In other words, Kentucky became increasingly incorporated within the "World System" (see Wallerstein 1980).

Economic And Transportation Developments

When the 1820s began, Kentucky, like the rest of the nation, was in the middle of a depression, which affected many merchants, industrialists, and agriculturalists. Many

industries, particularly those in Lexington, were severely affected by this depression (Share 1982; Wade 1959). Several towns begun in the "boom" times of the 1810s also failed (Sprague 1974). As a result of this depression, economic growth, town development, and immigration was not great at the beginning of the Antebellum.

By the mid-1820s, Kentucky and most of the nation began to recover from the depression. The price of agricultural and manufactured goods improved and commerce was again on the rise. With the economic recovery and the presence of the steamboat on the Ohio and its tributaries, especially the Cumberland, Green, Kentucky, and Licking rivers, many new landings were established (see Crocker 1976:15; Sauer 1927:209). Some of these landings evolved into towns.

The early part of the Antebellum was truly the age of the river town, or city, in Kentucky. While the Bluegrass Cultural Landscape still had the largest number of sizeable towns, many river towns across the state were experiencing exceptional growth. By 1830, Louisville had a population of over 10,000, far outdistancing its early rival, Lexington, which had a population of only 6,087. Maysville had increased from several hundred to over 2,000 people, and Covington and Newport had grown from landings to cities with a combined population of over 1,400. Other river towns, including Henderson, Owensboro, Carrollton, Bowling Green, Columbus, and the new town of Paducah, also showed signs of substantial growth by the 1830s.

The economic prosperity of the late 1820s and 1830s and the success of the steamboat brought on cries for river improvements. While many schemes were discussed, the most notable projects occurred on the Green and Barren rivers, the Kentucky River, and at the Falls of the Ohio. On the Green and Barren rivers, a series of locks were constructed to increase navigability, especially during dry seasons. By 1842, the locks were completed to Bowling Green, an event that greatly enhanced the position of this town (Crocker 1976:14, 22). Locks also were constructed on the Kentucky River, and by 1843, they were completed to Frankfort (Clark 1960:178).

Probably the most notable river improvement at this time was the construction of the Portland Canal around the Falls of the Ohio. The canal was incorporated in 1825. Although Louisville residents initially fought this improvement, soon after its opening in December 1830, it became apparent that the canal would bring greater commercial prosperity to the city. Opening of the canal resulted in increased trade on the river and, with the increase in steamboat size to a point larger than the canal would accept, the transshipment business of the city was retained (Hepner and Whayne 1992; Kramer 1986:441; Share 1982:36; Wade 1959). Other notable river developments at this time include navigation on the Green and Barren Rivers by 1828, and state appropriations for river improvements on the Green, Cumberland, Muddy, Rockcastle, Tradewater, Big Sandy, Nolin, Blood, Licking, Big Barren, and Kentucky Rivers in 1834, the same year that the first lock and dam was built on the Green and Barren River system. In 1835, construction was approved for five locks and dams, and in 1836, the Board of Internal Improvements recommended locks on the Kentucky on Kentucky rivers, with Locks 1, 5 completed by 1842. These improvements not only allowed for more traffic, but for more commercially oriented traffic, such as barges. The Licking River began to be used to transport coal from Morgan County to Claysville in 1848 and to Lower Blue Licks in 1849 (Hepner and Whayne 1992).

Other transportation improvements also occurred during the early years of the Antebellum subperiod. Kentucky established a separate transportation department in 1835. Though short lived, being abolished in the 1850s, this was one of the first such departments in the country (Collins et al. 1996). New roads were constructed and older ones were widened and some even surfaced (macadamized or corduroyed) after about 1830. One important development that occurred after 1818 was the shift from state to private control of many major roads or highways, such as those connecting Lexington and Maysville, Lexington and Louisville, and Louisville and Nashville (Clark 1960:181). These became turnpikes or toll roads. The first of these to become macadamized was the Maysville to Lexington Turnpike in 1829, which received a stone surface between 1831 and 1835. Stagecoach service increased, and by 1834, over twelve lines were running through Lexington (Hepner and Whayne 1992). As road travel increased, taverns and way-stations continued to be located along these roads.

One stretch of railroad was constructed between Lexington and Frankfort in the early part of the Antebellum. This railroad, which was chartered in 1830 and completed to Frankfort in 1834, was supposed to extend to Louisville and give Lexington a long desired connection to the Ohio River, but the Louisville to Frankfort connection was delayed and not completed for nearly twenty years, too late for Lexington to regain its state and regional prominence. The first steam engine built in the U.S. was designed by Thomas H. Barlow and built by Joseph Bruen, both of Lexington, in 1834, with the first steam locomotive train traveling 2 hours and 22 minutes from Lexington to Frankfort in 1835 (Hepner and Whayne 1992). Another major rail development was the Louisville and Nashville line, which first ran in 1839. In 1845, a line was chartered from Lexington to Maysville, through Paris, opening in 1853. Many other lines were organized or expanded during this time, including extension of the Lexington and Frankfort line to Louisville in 1852, the organization of the Henderson and Nashville line in 1852, reorganization of a line between Louisville and Covington in 1852, and groundbreaking for the Lexington and Big Sandy in 1853 (Hepner and Whayne 1992).

The Appalachian Mountains Cultural Landscape is one of the few regions in the state that did not benefit from transportation improvements and as a result remained relatively isolated. The only real improvement in this region was the presence of small steamboats on the Big Sandy after 1837. The area was neglected in terms of road construction (Collins et al. 1996; Scalf 1966:354). It was during this subperiod that a distinct Appalachian subculture began to evolve (Eller 1982:37).

Another national trend that occurred during this portion of the nineteenth century was the increased industrialization and technological improvements of the factories located in the Northeast and in England, which allow them to greatly increase the output and variety of products they produced, including textiles, ceramics, furniture, and arms (Larkin 1988). This had the effect of not only increasing the quantity and variety of products available, but also of lowering their cost. This also led to an increase in material variation by socioeconomic class. In other words, as the quantity of available goods increased, the upper and middle classes were in a much better position to acquire them (Larkin 1988:148).

A number of new products became available to consumers in the 1820s and 1830s. Two of the most significant for the average person were the iron cookstove and

the oil lamp (Larkin 1988:140-142). The cookstove not only made cooking more efficient, but also allowed for a greater variety of cooking techniques and better heating of foods (Larkin 1988:51-52). Gas lighting came to the state in 1853, first in Lexington (Hepner and Whayne 1992).

The improved transportation of the Antebellum subperiod also was associated with increased agricultural commercialization throughout most of Kentucky. Plantation-type agriculture and commercially oriented farms expanded in the Bluegrass Cultural Landscape, parts of the Pennyrile Cultural Landscape, and in the western section of the Jackson Purchase Cultural Landscape. The number of slaves in the state increased to 165,213 in 1830, when they made up 24.7 percent of the total state population. By the end of the Antebellum, the number of slaves had increased to 225,483, at which time they constituted 19.5 percent of the population. Although some individuals in Kentucky owned large numbers of slaves, most slaveholders owned five or fewer slaves (Coleman 1940:45).

The major crops and livestock produced in the state continued to be the same as in the earlier subperiod. However, there was more variation in the major crops grown and types of livestock raised between the cultural landscapes. Because of a combination of factors, including low tobacco prices and the expansion of cotton production in the lower South, residents of many Inner Bluegrass Section counties and some Outer Bluegrass Section counties turned to hemp as their major cash crop after 1820 (Axton 1975:46-48; Smith 1950:28). The labor-intensive nature of hemp harvesting and processing encouraged the maintenance of the slave-based agricultural system that was already in place.

Since Kentucky hemp was closely associated with Southern cotton, the price of the former tended to fluctuate with that of the latter (Axton 1975:47; Clark 1929). The 1830s were a boom time for cotton, with high prices and more western expansion, and hemp did very well during most of this decade. The early and mid-1840s were a time of depression in the cotton industry as well as the economy of most of the nation and Western Europe. Although hemp prices were low at this time, many farmers still thought it the most profitable crop they could grow on their land. The period from the late 1840s to the Civil War was a time of relatively high prices for both cotton and hemp, and planters and farmers did well (Hopkins 1938). The effect of these economic cycles should be examined archaeologically, particularly since the depression of the 1840s was probably the most severe economic downturn experienced by this country until the Great Depression of the 1930s.

Hemp was, of course, not the only profitable crop grown in the Bluegrass Cultural Landscape. Tobacco was still grown in the Ohio Valley counties, and wheat, rye, and corn continued to be grown in large quantities. Livestock production also increased greatly in this region. Although it had long been known for its livestock production, the Bluegrass Cultural Landscape's reputation for well-bred cattle, horses, and sheep blossomed during the Antebellum (Raitz 1987:8). Hog and mule production also increased during this subperiod.

The Pennyrile became the major tobacco producing cultural landscape in Kentucky during this subperiod (Axton 1975:49). Production was centered in the Plain

Section, in the Eastern Section, and in the Ohio Valley counties of the Western Coalfield Section. The discovery of the fertility of the Barrens region of the Eastern Section after 1820 resulted in an increase in tobacco production in this section (Sauer 1927:139). The counties with the richest soil and, therefore, the highest level of tobacco production, also had the largest plantations and the most slaves. Throughout the Antebellum subperiod, these included Christian, Logan, Todd, Warren, Barren, Henderson, and Daviess counties (Martin 1988). Grains and livestock also were important in this cultural landscape, and cotton was produced in the Pennyrile Plain Section. In the less productive regions, such as the Eastern Section, livestock, not tobacco, was the major commercial product. Many of farms in the less productive areas were not as commercially oriented as the tobacco, hemp, or cotton farms.

For its small size, the Jackson Purchase Cultural Landscape is a highly varied area in terms of soil quality (Davis 1923). Soils in the eastern counties are generally poorer than in the rest of this cultural landscape, and smaller, more subsistence-oriented farms dominated this area. Along the Mississippi River, in parts of Graves County, and along the Ohio, richer lands were available and large farms and plantations were present. Like the Pennyrile Cultural Landscape, tobacco was the major cash crop of the richer soil zones in the Jackson Purchase Cultural Landscape, although cotton also was produced.

The Appalachian Mountains Cultural Landscape continued to have a frontier level of agriculture (Eller 1982). A large proportion of crops were produced for home consumption, either for humans or animals. Livestock, particularly hogs but also cattle, was the major commercial product of these farms. Timber was harvested and sold at an increasing rate throughout this subperiod (Eller 1982:14, 18, 21).

Rural Slavery

Hudson (2002:18), following the work of historian Ira Berlin, noted that Kentucky was a society with slaves, but not a slave society since slavery was not central to the economy or social structure. While the Bluegrass Cultural Landscape contained the most slaves throughout the early Antebellum subperiod, by 1860, the greatest number of large slave holdings (over 50 slaves) has shifted westward where cotton production had developed. The highest incidence of slaveholders having over 50 slaves was in Christian County, with 14 slaveholders, followed by Henderson County at 8 slaveholders and Todd at 4 slaveholders (Historical Census Browser 2004). Martin (1988:302) has suggested that slavery was harshest in the southwestern portion of the Pennyrile cultural landscape where the slaveholding were larger. Characterizations of slavery in Kentucky as "milder" (Coleman 1940) than in the deep South have been challenged by several researchers (e.g., Eslinger 1994; Lucas 1997).

Hudson (2002), who has pioneered research on the Underground Railroad, has noted that conditions in Kentucky were so unappealing that many slaves risked the dangers of trying to escape. The fact that larger slave holdings were less viable in the Kentucky economy compared to more southern states also meant a greater incidence of families being separated ("sold down the river"), one of the greatest fears of slaves (Smartz 1999), and perhaps as important a concern as material conditions. Smaller slave holdings also resulted in more contact between the slaves and slaves owners in Kentucky,

creating increased opportunities for sexual exploitation and harassment if an owner was inclined to such behaviors. A forced sexual relationship may explain the behavior of Margaret Garner, a northern Kentucky slave who attempted to kill her children rather than see them taken back into slavery during a failed escape attempt (Weisenberger 1998).

Urban Development and Urban Slavery

As was mentioned previously, by 1830, Lexington had lost its position as the largest city in the state to Louisville. By 1860, Lexington was reduced to only the fourth largest city, with a population of 9,521 (Share 1982:27). Covington and Newport had populations of 16,471 and 10,046, respectively, and Louisville contained 68,033 people (Share 1982:37). Lexington still maintained its position as the center of the Inner Bluegrass Section of the Bluegrass Cultural Landscape. Its commerce and industry, particularly hemp but also flour and powder mills, did well during the Antebellum (Share 1982:26). Even after the arrival of a rail connection to the Ohio River in 1852, however, Lexington only experienced a slow rate of growth.

The most striking commercial, industrial, and demographic growth of this subperiod, by far, occurred in Louisville, and secondly in "the Point" cities of Covington and Newport. As was noted previously, these cities took advantage of their positions on the Ohio River to participate in the great amount of commerce that was conducted on this river. Also, by 1860, these three cities were connected by railroad lines with Lexington, and Louisville also had connections with Nashville and Memphis. While the industry of these cities was still related to processing of agricultural products, non-agriculturally related industries, such as iron foundries and glasshouses, were growing in importance. The industrial growth of Louisville was so great that by 1860, it had become the twelfth largest manufacturing center in the country and the largest in the South (Share 1982:33).

Other successful Antebellum river towns were Frankfort, Henderson, Owensboro, Bowling Green, and Paducah. Paducah recorded a phenomenal increase from 105 people in 1830 to 4,590 in 1860 (Collins 1874:264). This made it, by far, the largest city in the Jackson Purchase Cultural Landscape. Bowling Green also experienced rapid growth during the Antebellum subperiod, increasing from 815 people in 1830 to 4,574 in 1860 (Collins 1874:265). Its growth was related to both improvements on the Green and Barren rivers in the 1830s and its position as the major junction on the Louisville and Nashville Railroad by 1859-1860.

Another Antebellum development that led to an increase in the population of river cities, and in particular those located along the Ohio River, was a large influx of foreign immigrants, especially Germans and Irish, during the 1840s (Davis 1923:165). Louisville received so many immigrants that by 1850, they comprised 34 percent of the Euro-American population (U.S. Census 1854).

Historical studies suggest that as the Antebellum progressed, urban slavery was seen as less viable and increasingly problematic. This was due, in part, to uneasy feelings experienced by members of the Euro-American population as the number of urban slaves grew and their autonomy increased. The position of free African Americans also became more tenuous, and they were generally treated more harshly as time went on (Wade

1964:244). Another factor related to these changes was the increased segregation of African Americans, both slave and free, from Euro-Americans as the Antebellum drew to a close (Wade 1964:275-276).

Lexington and Frankfort, in the Bluegrass Cultural Landscape, maintained a much higher percentage of slaves than did the cities in the Ohio Valley Urban Centers Cultural Landscape. Hudson (2002) suggests that slavery was much more central to daily life in Lexington compared to Louisville, which had a lower percentage of slaves and a more diverse economy. The system of slave policing was stronger in the Bluegrass, which, together with the increased distance from the Ohio River, made escapes more difficult there.

Industrial Development

Industries associated with small towns and hamlets were usually agriculturally related and included flour and grist mills, tobacco factories, hemp factories, leather (mostly shoes and saddles) shops or factories, woolen mills, and distilleries. Not surprisingly, hemp and tobacco factories tended to be located in areas where these crops were most heavily cultivated (see preceding agricultural discussion). The larger distilleries tended to be clustered in the Inner and Outer Bluegrass sections of the Bluegrass Cultural Landscape and in the Eastern Section of the Pennyrile Cultural Landscape. In 1860, Nelson and Larue counties contained the most distilleries.

Other important industries of this subperiod included those associated with the extraction and processing of iron, salt, and coal. Iron furnaces were centered in both the Appalachian Mountains Cultural Landscape (especially Boyd, Carter, and Estill counties) and in the Lower Tennessee Cumberland Section of the Pennyrile Cultural landscape (Crittenden, Livingston, Lyon, Muhlenburg, and Trigg counties) (Eubank 1927). While some salt was produced in the Bluegrass and Pennyrile cultural landscapes during the early part of the Antebellum, the Goose Creek Salt Works in Clay County was the only significant producer for the entire subperiod. Improved transportation brought in cheaper salt and made the working of most Kentucky licks unprofitable (Boisvert 1984:59). Slaves and immigrants often worked at industrial sites in Kentucky (Coleman 1940; Eubank 1927; Henry 1976:50).

Another class of sites related to salt and mineral springs are resorts. Some resorts were established in the Bluegrass Cultural Landscape as early as the 1790s, but it wasn't until the 1820s and 1830s that that some located in the Bluegrass, Pennyrile, and Appalachian Mountains cultural landscapes became large operations with luxury hotels. While most resorts initially stressed the medicinal qualities of their water, later emphasis was more on lavish entertainment (Boisvert 1984:62).

The final industry that deserves mention is coal mining, an industry that was to have a great impact on later developments in Kentucky. The first commercial coal mine in Kentucky is often cited as having begun operation in 1820 and to have been located in Muhlenburg County, although coal was shipped out of Kentucky as early as the late-eighteenth century. By the 1820s, several small commercial coal mines were operating in the Western Coalfield Section of the Pennyrile Cultural Landscape, and by 1840, some

were located in the Appalachian Mountains Cultural Landscape (Crowe-Carraco 1979:78-79).

In 1845, the first large-scale, nearly modern coal community was established in the Appalachian Mountains Cultural Landscape. This town, Peach Orchard, was to be the forerunner of hundreds of similar communities. Here, coal owners constructed 40 dwellings, a store, a gristmill, and a sawmill (Crowe-Carroco 1979:80). Other mining communities followed in the late 1840s and the 1850s (see Scalf 1966:200-204). Although most of these operations were shut down during the Civil War, they laid the foundation for the mining communities of the future.

CIVIL WAR: 1861-1865

This section focuses on the Civil War and is organized differently than the other subperiod discussions. Specifically, greater emphasis is placed on site types. This is largely because the Civil War can be thought of as a discreet event, or a series of discreet events, more easily than the other subperiods.

When the Civil War began on April 12, 1861, Kentucky found itself in an awkward position. It was a slave state that did not support secession, and it was divided on whether to support military action against the seceding states. Initially, Kentucky's political leaders, especially Governor Beriah Magoffin, attempted to keep the state neutral. Magoffin asked both Presidents Lincoln and Davis to respect this neutrality and keep their armies out of Kentucky. He even threatened to use the state militia to enforce this position.

Given the divided sentiments within Kentucky and its strategic position, neutrality was untenable and did not last long. As early as May 1861, the rift in the state militia had become so great that two separate state organizations were in place, the pro-Confederate State Guard and the pro-Union Home Guard (Stone 1977:66). These two organizations competed for men and arms and complicated the neutrality status for the governor until the fall of 1861, when the State Guard was disbanded after many of its members joined the Confederate Army.

Although both Confederate and Union armies initially stayed out of Kentucky, by July 1861, both were actively recruiting Kentucky residents from camps just across the Ohio River in Ohio, Indiana, and Illinois, and from south of the state line in Tennessee. Finally, in August 1861, the state's neutrality was officially breached when General William Nelson established a Union recruitment and training camp (Camp Dick Robinson) in Garrard County in the Bluegrass Cultural Landscape (Coulter 1966). This was, of course, greatly protested by Governor Magoffin, but to no avail.

Within a month after the establishment of Camp Dick Robinson, Kentucky's neutrality was further eroded as troops from both armies began moving into the state. The final blow came in the fall of 1861, when a decidedly pro-Union legislature was seated. By the end of 1861, Kentucky found itself in a very uncomfortable position. Federal troops occupied the northern half of the state and Confederate troops controlled

the southern half. The state also had a pro-Union but pro-slavery legislature, and a split populace. This legislature overturned Magoffin's neutralist policy and finally forced him to resign in August 1862.

Early Occupation And Engagements

The first Confederate bases or forts to be established in Kentucky were at Hickman and Columbus in the Jackson Purchase Cultural Landscape. Troops moved into both communities on September 4, 1861, and they were placed under the command of General Gideon Pillow and General Leonidas Polk, respectively. These generals had been maneuvering around southeastern Missouri and northwestern Tennessee for several months and had been waiting for the opportunity to establish Mississippi River forts in Kentucky. They used a minor Union engagement with a riverboat at Paducah as an excuse to enter the state (Mullen 1966:215). Within a few months, they had established forts at Columbus and Hickman. Other Confederate forts were established at Hopkinsville, Bowling Green, Glasgow, Monticello, and Somerset. These positions, along with Forts Henry and Donelson in Tennessee, formed the Confederacy's northern defensive line. This line was under the command of General Albert Sidney Johnston, who established his headquarters at Bowling Green. Of these positions, Bowling Green and Columbus contained the most impressive fortifications, with the latter often referred to as the "Gibraltar of the West." A Confederate recruitment and training camp, named Camp Beauregard, was established in Graves County during the fall of 1861. By December 1861, there were 48,000 Confederate soldiers spread across this line (Harrison 1975:17).

The Federal Army established bases of operation immediately after the Confederates moved into Kentucky. A day or two after Columbus and Hickman were occupied, General Ullyses S. Grant and his troops moved into Paducah and established a base there, as well as at Smithland, Wickliffe (Fort Jefferson), and across from Cairo, Illinois (Fort Holt). Forts or camps also were established at Maysville, Louisville, and Covington in the Bluegrass and Urban Centers cultural landscapes. Union headquarters for Kentucky was established at Louisville. Most of Kentucky was placed under the jurisdiction of the Army of the Ohio, which by November 1861 was commanded by General Don Carlos Buell. The Jackson Purchase Cultural Landscape was under the jurisdiction of the Army of the Mississippi. By January 1862, there were about 70,000 Federal troops in Kentucky (Kerr 1936:78).

In the first few months of occupation, only a few small engagements occurred. Two of the more significant ones include the battles of Wildcat Mountain (Camp Wildcat, Rockcastle Hill), Laurel County (October 1861) and Ivy Mountain, Floyd County (November 1861), both of which are located in the Appalachian Mountains Cultural Landscape. In both battles, the Confederate forces were repulsed and pushed southward (Hafendorfer 2003; Matthews 2005). The Confederate fort at Columbus was involved in the November 1861 Battle of Belmont, Missouri just across the Mississippi River. The first moderate engagement occurred on January 17, 1862 at Mill Springs, where 4,000 Confederates under General Felix Zollicoffer were repulsed by about 4,000 to 6,000 Federals under General George H. Thomas (Hafendorfer 2001; Harrison 1975:27). The Confederates suffered 529 total casualties, including 125 fatalities, and

retreated across the Cumberland River and into Tennessee. The Union forces had 352 casualties, including 40 killed (Hafendorfer 2001; Harrison 1975:27).

The Fort Henry and Fort Donelson Campaign

The most significant early engagements relative to Kentucky, and perhaps to even the entire western campaign, did not take place in Kentucky, but at Fort Henry and Fort Donelson in Tennessee. In a bold move, Grant decided to take 17,000 of his Paducah area troops around Columbus and strike the more weakly fortified Tennessee forts. It was reasoned that a victory here would make the Columbus position untenable. Simultaneously, Buell was supposed to move toward Bowling Green from Calhoun and Louisville.

The engagement began on February 6, 1862, when Fort Henry was bombed into submission by Union gunboats on the Tennessee River. Only a small force was surrendered at Fort Henry, however, as most of the Confederate defenders had previously been removed to Fort Donelson.

On February 13, after the gunboats were given time to descend the Tennessee River and ascend the Cumberland River, Grant and 15,000 of his troops arrived at Fort Donelson (Harrison 1975:29; Nevin 1983:82). Here the fighting was much more fierce than at Fort Henry and the gunboats were not as effective. The battle persisted through February 14, when Grant received 10,000 additional troops so that he outnumbered the Confederates. On the night of February 15th, the Confederate generals, who had been hampered by a confused policy and chain of command, decided that the fort should be surrendered in the morning. That night, generals Floyd and Pillow made their escape. General Nathan Bedford Forrest, who had been disgusted with the surrender plan, also left with his entire cavalry. On the morning of February 16, 1862, General Simon B. Buckner and 12,000 remaining Confederate troops surrendered to Grant.

The significance of these two battles cannot be overemphasized. The fall of the two forts led to the abandonment of Confederate positions in central and western Kentucky. Bowling Green was abandoned on February 12, partly to reinforce Donelson and partly because of Buell's impending attack, and Columbus was abandoned on March 2 (Harrison 1975:34; Mullen 1966:224). The fall of forts Henry and Donelson also resulted in the abandonment of the supply center at Nashville, which the Confederates felt was indefensible after the loss of the Cumberland River. The Tennessee capital was soon occupied by General Buell and 45,000 troops of the Army of the Ohio (Nevin 1983:97). The only major remaining Confederate forces left in Kentucky after the winter of 1862 were in the Cumberland Gap, which was abandoned by June 1862 (Harrison 1975:34).

During the five or six months following the fall of Fort Donelson, no significant engagements occurred in Kentucky. A few skirmishes and raids did take place, but none were notable, except perhaps John Hunt Morgan's raid of July 1862 that took him from Tomkinsville to Cynthiana, which defeated a small Union force under Lt. Col. John Landrum (Penn 1995). Of course, a major Union occupation did continue at a number of forts and camps, including the abandoned Confederate positions.

Perryville and its Aftermath

The last major military campaign to occur on Kentucky soil began on August 18, 1862, when General Kirby Smith and 12,000 Confederates entered Barboursville (Clark 1960:325; Harrison 1975:42; McDonough 1994; Noe 2001). On August 24, Smith drove back a small force of Federals at Big Hill, south of Richmond, and then on August 30, Smith's whole force met a Federal force of 6,500 under General William Nelson on the Old State Road near Mt. Zion church (Noe 2001). Again, the Confederates prevailed; in addition, they captured 4,300 Union troops (Harrison 1975:42; Lambert 1996; Street 1985:44). Smith and his troops then moved freely into Lexington.

In the meantime, General Braxton Bragg, then commander of the Army of Tennessee, began moving toward Kentucky from Chattanooga. On September 14, he entered Glasgow with about 27,000 men (Harrison 1975:42; Street 1985:43). Concurrently, Bragg decided to unite with Smith and move toward Louisville and its valuable supplies. At Munfordville, however, one of Bragg's units engaged 4,000 entrenched Federals under Colonel John Wilder. The Union forces eventually surrendered, but it caused a delay of four days (September 13-17) (Harrison 1975:46). This delay allowed General Don Carlos Buell and his army, which also was coming up from Tennessee, to pass Bragg and beat him to Louisville. Buell reached Louisville on September 25 and once there, he was able to increase his troop strength to 60,000 men.

Bragg, seemingly at a loss about what to do next, decided to leave most of his army scattered throughout the Inner Bluegrass Section of the Bluegrass Cultural Landscape and go to Frankfort with a small force and establish a Confederate government in Kentucky. His reasons for doing this were not at all fanciful. He hoped that by installing a government, he could stimulate recruitment or even enact a draft (Harrison 1975:49; Street 1985:57). On October 4, a Confederate governor was inaugurated. This turned out to be a hollow gesture, since only hours after the inauguration, a forward detachment of Buell's army entered Frankfort and forced Bragg and the new government to retreat (Harrison 1975:49).

As Buell and his 60,000 men moved south, Bragg tried to regroup his widely scattered forces. He was too indecisive and was confused by a Union diversion toward Versailles (Street 1985:58). On October 7, 1862, a force of 15,000 to 16,000 Confederates stumbled upon Buell's army of 60,000 at Perryville, initiating the largest Civil War engagement in Kentucky. The battle started as a skirmish, but by October 8, it was a full-scale battle. Neither commander was aware of the mismatch in troop strengths and the outcome of fighting was indecisive (Street 1985:62). On the night of October 8, Bragg became aware of the size of Buell's army and began a withdrawal of his scattered troops toward Tennessee. Buell's troops pursued Bragg for some time, but were never able to catch him. As a result of the Battle of Perryville, 845 Union soldiers were killed and 2851 were wounded, while 510 Confederate soldiers were killed and 2635 were wounded (Harrison 1975:53). Thus ended the last significant Confederate action in Kentucky.

For the remainder of the Civil War, the only engagements in Kentucky consisted of raids and guerrilla activities. Guerrilla attacks and bushwhacking were a severe

problem, especially in the Appalachian Mountains Cultural Landscape, and the occupation forces went to extreme measures to curtail these activities, including the enactment of martial law after July 1863 (Cooling 1997; Harrison 1975:77; McKnight 2006; Sensing 1942).

The most famous raids were undoubtedly those of Colonel (later General) John Hunt Morgan and his cavalry. He entered central Kentucky four separate times after Bragg's retreat and managed to inflict substantial damage to railroads and Union depots, and acquire supplies for the Confederates (Ramage 1986). He left Kentucky for the last time on June 12, 1864, when his men were engaged at Cynthiana and forced to retreat into western Virginia by the Union troops of General Stephen Burbridge (Harrison 1975:74; Penn 1995). Morgan was killed in Tennessee three months later.

Another notable Confederate cavalry leader and raider also entered Kentucky late in the war. In March 1865, General Nathan Bedford Forrest and 2800 men entered Kentucky and moved toward Paducah. The main reason for the raid was to obtain horses. At Paducah, Forrest captured horses and supplies and burned cotton, a steamboat, and a dry dock, but he was unable to overrun Fort Anderson (Allen 1961; Harrison 1975:71). Forest also was involved in a cavalry skirmish at Sacramento, McLean County in December 1861.

Union Occupation of Kentucky

The Union occupation of Kentucky during the Civil War was critical to the Union victory, since it helped hold Kentucky for the Union; helped secure much needed supplies and protect the transportation arteries to move them; and provided safe bases for the recruitment of large numbers of Union soldiers, including after March 1864, African-American troops. In fact, the Union military occupation of Kentucky was the beginning of the end of slavery in Kentucky. Previous to the recruitment, slaves entered Union bases as runaways and as impressed laborers. Over 20,000 African-American men were then legally freed through enlistment, and following the March 1865 Federal Act, the wives and children of these soldiers also were legally freed. By the passage of the 13th Amendment in December 1865, it has been estimated that approximately 70 percent of Kentucky's slaves were already freed through military participation or other federal measures (Lucas 1992).

The Union military occupation of Kentucky began in the summer of 1861, and the northern two-thirds of the state was soon in Union hands. This occupation continued throughout the War. Only during the August-October 1862, Bragg-Kirby Smith invasion of Kentucky was this occupation severely threatened. Following this invasion and John Hunt Morgan's Christmas raid (Dec. 1862 - Jan. 1863), there was a concerted effort by the Union command to strengthen Kentucky's defenses, particularly those around vital transportation routes, supply depots, and other vital centers. Rings of fortifications were constructed or improved around a number of Ohio River urban centers, including Louisville, Covington, Owensboro, and Paducah. Fortifications also were strengthened at the Louisville and Nashville Railroad and Kentucky Central Railroad bridges and at important centers along these railroads, such as Bowling Green, Munfordville, Glasgow, and Paris, and at the capital, in Frankfort. These forts included earthen lunettes, redans

and redoubts, and wooden blockhouses. They were built to more easily defend these points against Confederate raiders and pro-Confederate guerrillas. Fortification improvements normally included larger garrisons. As both the Army of the Cumberland and the Army of the Ohio were supplied through Kentucky during their movements through Tennessee, Alabama, and Georgia, it was vital to keep Kentucky's main transportation routes open.

The Union army also improved its supply system by creating an efficiently organized hierarchy of regional depots. This system utilized both previous depots and newly created ones, such as Camp Nelson. Larger depots were usually located at or near large- to medium-sized cities on important transportation routes, such as Louisville and Bowling Green, but this was not always the case. Camp Nelson was established in a rural area along a rather rough road. Louisa also became a moderate-size center for extreme eastern Kentucky. Smaller subsidiary depots were established at smaller towns, such as Munfordville, London, and Mt. Sterling, or at strategic rural points such as Point Isabel (Camp Burnside) and Cumberland Gap (McBride et al. 2003; Sears 2002). Camp Nelson was the highest order (largest) depot in central and eastern Kentucky and supplied subsidiary depots at Lexington, Crab Orchard, Camp Burnside, and Cumberland Gap. Kentucky's system of depots and their adjacent transportation arteries, whether railroads, roads, or rivers, supplied numerous campaigns and garrisoned troops in Tennessee and the lower South. Camp Nelson, for instance, supplied Maj. General Ambrose Burnside's Knoxville, Tennessee campaign of August-November 1863, and Maj. Brig. Gen. Stephen Burbridge's and Maj. Gen. George Stoneman's Southwestern Virginia campaigns of October 1864 and December 1864, respectively. Louisville and other depots along the Louisville and Nashville Railroad supplied the Army of the Cumberland in their campaigns between Nashville and Atlanta and for their occupation of Tennessee.

Numerous Union recruitment camps were established across the Commonwealth, with the first being at Camp Dick Robinson, Garrard County. Recruitment and training facilities were established at most of the large and moderate-sized depots and here recruits from within Kentucky and pro-Union East Tennessee were trained. While most of these soldiers were sent to frontline action in the Western Theater, thousands stayed within Kentucky and joined other Union troops, primarily from the Midwest, to perform garrison and defensive duty.

Besides protecting depots and transportation networks, these occupation forces also pursued raiders and guerrillas who threatened strategic points and stability. They also attempted to enforce military orders regarding citizen loyalty and interstate commerce. The enactment of these orders sometimes led to tension between the Union Army and civilian population.

The Union Army presence, including a strong system of garrisons, forts, and depots also was necessary for the successful recruitment of African-American troops, one of the most significant aspects of the Civil War in Kentucky. Without the strong presence of the Federal Army, including recruiters and secure garrisons, it is unlikely that large-scale African-American recruitment and enlistment could have occurred, given the strong opposition from local whites. In fact, this opposition delayed the recruitment of African-American troops until February 1864, a year after active recruitment had begun in most other states. First, General Burbridge tried to compensate owners and enlist only

slaves who had their owner's permission, but by June, the Army overturned this policy and began taking all able-bodied men who showed up at the recruitment stations (Berlin 1982:193; Lucas 1992; Sears 2002). By July 1864, 15 U.S. Colored Troops (U.S.C.T.) regiments had been organized and 16,000 men had volunteered. In all, 23,703 Kentucky African Americans served in the Union Army, the second greatest number of African-American soldiers from any state (Berlin 1982). These U.S.C.T. were recruited and trained in heavily fortified recruitment camps at Paducah, Columbus, Owensboro, Bowling Green, Lebanon, Louisville, Covington, Camp Nelson, and Louisa (Lucas 1992). Upon enlistment, these men attained their freedom and were given a chance to fight for the freedom of others. Kentucky's U.S.C.T. fought battles and skirmishes in Virginia, Tennessee, and Kentucky and performed garrison duty at numerous strategic points in Kentucky (Butler 1997; Lucas 1992; Mulligan 1997).

When the African-American soldiers entered the Union camp life, they sometimes brought their families, for whom they were seeking refuge and possibly freedom. Initially, the Union Army did not want these refugees within their encampments, but by late 1864, they changed their policy and accepted these refugees within encampments (Butler 1997; Lucas 1992; Sears 1987, 2002). Finally, the March 1865 Congressional Act extended freedom to the wives and children of U.S.C.T. The recruitment of African-American men and the emancipation of their families, was the beginning of the end of slavery in Kentucky. The use of military recruitment as a means to end slavery in Kentucky was made explicit by Maj. Gen. John Palmer, commander of the District of Kentucky.

Effects on the Civilian Population

Compared to other Southern states, Kentucky survived the Civil War in good shape. Since few major campaigns or large battles took place within the state, it did not experience great physical devastation (Harrison 1975:80). However, many people in the state were greatly affected by the war.

Early in the war, farmers and merchants were hurt by the curtailment of trade with the South. This was particularly hard on hemp and livestock producers, whose primary customers were the planters of the deep South (Alexander 1976). There also were disruptions to regional transportation systems due to war damage or Union Army control. This was particularly true of railroads, but some rivers, such as the Green River, also were effectively shut down during the Civil War (Crocker 1976:76; Harrison 1975:95). Other problems during the early years of the war included a shortage of money, limited credit, and low prices for land, slaves, and livestock (Alexander 1976:232-235).

By 1863, economic conditions had improved as United States Army contracts and northern customers increased demand and prices for Kentucky products. Grain and livestock prices in particular rose, as these were in great demand by the Army. Hemp prices also improved, since it became more widely used in clothing, given the shortage of cotton (Alexander 1976:263). Conditions also improved for merchants, but because of Army restrictions and a corrupt permit system, they continued to suffer hardships (Harrison 1975:99-100).

The wartime condition of Kentucky agriculture, mining, and other industries varied depending on their type and location. For instance, nitre was in demand for gunpowder, particularly in the South, and it was mined heavily in the Appalachian Mountains Cultural Landscape during the Civil War (Fig and Knudsen 1984:68). It was generally extracted by locals, who would sell it to either side. Mammoth Cave, which was in a strategically exposed position, was not mined during the Civil War (Faust 1967:336).

Other industries, such as iron and salt, experienced a boom during the Civil War. Iron furnaces, including Buffalo in Greenup County (Appalachian Mountains Cultural Landscape) and Nelson in Nelson County (Bluegrass Cultural Landscape), were Union suppliers. In other areas, such as the Green River (Pennyrile Cultural Landscape) and the Land Between the Rivers (now Lakes) (Jackson Purchase Cultural Landscape), transportation difficulties inhibited the iron industry (Henry 1976:51). Also, the loss of men and slaves slowed some industries, especially coal mining (Scalf 1966:282).

The loss of the labor force, both free and slave, that occurred during the Civil War was probably the largest single factor in the deterioration of Kentucky's agriculture and industry. In terms of the free population, about 100,000 Kentucky men entered the Union Army and 25,000 to 40,000 entered the Confederate Army during the war. Of these, roughly one-third died of wounds or disease (Harrison 1975:95). By the end of the Civil War, agricultural losses included a 4,000,000-acre decrease in improved acreage and a 25 percent loss of livestock (Harrison 1975:101).

The number of slaves that escaped during the early years of the war is difficult to estimate, but by the end of 1863, many were crossing the Ohio and Mississippi rivers and the Tennessee border to enlist in the Union Army. By this time, the Federal Government was offering freedom to any male slave who enlisted. Recruitment was occurring everywhere at this time, except in Kentucky (Berlin 1982:191).

As noted above, by February 1864, the Federal Government grew tired of giving Kentucky special treatment and began recruiting slaves there as well (Berlin 1982:193). Kentucky slaves eventually enlisted in great numbers and by the summer of 1865, nearly 24,000 had enlisted and been freed (Berlin 1982:194). Also, as noted above, thousands of African-American women and children also entered Union camps and after the March 1865 Congressional Act, they were emancipated as well. These events obviously began the abolition of slavery in Kentucky.

There also were a number of other disruptions. Besides physical destruction and theft caused by both armies, the occupying Federal forces also influenced and disrupted political and social activities. Fearing a growth in power of the so-called "Peace Democrats," the Army virtually controlled the elections of 1862 and 1863 by intimidation (Harrison 1975:82). Also, as previously mentioned, in a step to control bushwhacking and to aid Confederates, martial law was declared in Kentucky in July 1863 (Harrison 1975:84). Bushwhacking continued, however, especially in the Appalachian Mountains Cultural Landscape, where it contributed to long-term animosities and violence (McKnight 2006; Sensing 1942). As Caudill (1979:290) stated, "the war divided the people across every conceivable line and gave rise to hatreds that, in turn, generated ghastly and prolonged feuds." The Civil War ended on April 9, 1865.

POSTBELLUM: READJUSTMENT AND INDUSTRIALIZATION, 1865-1914

During the period from 1865 to 1914, old social and economic systems became obsolete and new ones were introduced that greatly affected Kentucky. The following discussion highlights the major trends documented for this subperiod.

One of these trends was the state's struggle to deal with the emancipation of African Americans and their role in Postbellum society. Other trends, such as those in agriculture, were more gradual, although the introduction of white burley tobacco in the Bluegrass Cultural Landscape and the general popularity of tobacco resulted in important agricultural changes. The traditional agricultural system reached a peak near the end of this subperiod, after which it began to decline, forcing many farmers to turn to industry or migrate to other areas. The Postbellum subperiod also was one of tremendous developments in communication, transportation, production, and consumption, coupled with growth in industry and commerce. New systems of transportation, especially the railroad, resulted in a reorientation of trade patterns, and with increased road construction, the various regions of the state were brought closer together. While these new transportation systems increased communication between the cultural landscapes during this subperiod, regional cultural and economic differences became more pronounced.

At the end of this section, a more detailed treatment of the timber and coal industries will be presented. These industries are discussed separately because of the tremendous economic and cultural effects they have had and continue to have on the environment, lifeways, and culture of many areas of the state.

Demographic Developments

Kentucky's population increased from 1,648,690 in 1870 to 2,289,905 in 1910, an increase of 39 percent in 40 years. Several important demographic trends that occurred during this subperiod are discussed below.

The Postbellum was a period of urbanization throughout most of the United States. In Kentucky, urbanization occurred at a much slower rate than in other parts of the country. Satellite cities developed around the large urban centers, like Louisville and the Covington-Newport area, and many towns and cities grew in size. Initially, urban growth was heavily influenced by the migration of African Americans to cities, but increased opportunities for jobs in manufacturing and commerce drew Euro-Americans to the cities as well. This pattern is reflected by the fact that the population of the state's rural areas increased by only 8.7 percent from 1860 to 1870, while the urban population increased by 62.4 percent. Growth during the 1870s slowed somewhat in the cities and increased in rural areas to the point that both areas had similar growth rates, 27.6 and 24.3 percent, respectively.

Urbanization probably slowed somewhat during the 1870s due to the Panic of 1873. However, it resumed in the following decade, when the urban population increased

by 42 percent. The rural population increased by only 7.4 percent. This trend continued, although at a slightly more gradual rate, throughout this subperiod (and into the next). The rural population grew by only 11.8 percent in the 1890s and by only 3.3 percent in the 1900s, while the urban population increased by 31.1 percent in the last decade of the nineteenth century and by 18.8 percent in the first decade of the twentieth century (U.S. Census 1943).

Increased urbanization led to the growth of residential suburbs in many towns and cities. It also resulted in crowding and a decline in housing conditions in some cities. Tenement houses became more common as large, single family structures were converted to rental units (Ellis 1981; Kemp 1909). These dwellings often housed many families. One tenement in Louisville is reported to have contained 41 rooms that were occupied by 40 families (Kemp 1909).

During the Postbellum, average family size decreased at a faster rate than did the average number of persons that occupied a dwelling. This suggests that throughout this subperiod, increased numbers of non-family members, probably boarders, became members of households. This was especially true in industrial centers, such as those in the Ohio Valley Urban Centers Cultural Landscape. This trend can be illustrated by comparing the difference between the average size of a household and the average size of a family from the 1890 census for Muhlenberg County, a mining area in the Pennyrile Cultural Landscape, and Anderson County, a rural area, and Fayette County (which includes Lexington) in the Bluegrass Cultural Landscape, with that of heavily urbanized Jefferson County. The first three counties had .23, .13, and .26 more persons per household than per family, respectively, while Jefferson County had 1.34 more persons per household than per family, which is more than five times the amounts for the other three counties (U.S. Census 1892). In 1900 and 1910, the average number of persons per dwelling was 1.2 to 1.4 more than the average number of persons per family in the industrial centers of Covington and Newport, but only .4 more in the smaller city of Lexington (U.S. Census 1923).

The Postbellum was a time of change, or potential change, in the areas of sanitation, water procurement, and other municipal services. Kemp (1909), in her survey of tenement houses in Louisville in 1909, found that some families lacked a water source and had to beg water from houses with water, while others used polluted cisterns. The most common source of toilet facilities was a privy vault (86 percent), often shared by many families. Only 8 percent of families had their own privy vault or water closet, and 30 percent of the families shared sanitary facilities with seven or more apartments. Kemp's data illustrate the lack of a simple one-to-one correspondence between a dwelling and a specific household or family.

The unsanitary and unpleasant conditions associated with rapid urban growth led to some legislative reform. For instance, House Bill 398, which went into effect June 15, 1910, outlawed cellar apartments, privy vaults, and cisterns. Works Progress Administration surveys conducted in the late 1930s suggest that these laws were not very effective, especially in lower-income neighborhoods (Ellis 1981).

In addition to new legislation, private organizations were formed to improve living conditions in cities. One example is the Lexington Civic League, which was most

active in the first decade of the twentieth century. Besides efforts to improve education and provide parks and other amenities, the League worked to improve housing conditions and get water hydrants installed in poorer neighborhoods, some of which lacked a reliable water source (Hay 1988). Generally, although cities and larger towns began to establish municipal services during the Postbellum, many households continued to rely on old facilities like wells, cisterns and privies, usually located in the yard not far from a dwelling.

Unlike the tenements Kemp had studied in New York and other East Coast cities, Louisville tenements usually had yards, perhaps because they were often converted single family houses rather than having been specifically built as tenement houses. A photograph from Kemp's (1909:51) survey shows a goat in a yard, documenting that some animals were still kept, and she mentions some craft activity by immigrants in these yards. Kemp noted that some yards contained piles of garbage, although municipal collection was supposedly available three times a week.

Besides a general increase in the size of urban populations, the ethnic composition of the state's population changed during this subperiod. The percentage of the state's population that was African American decreased from 16.8 percent in 1870 to 11.4 percent in 1910, as did the percent of the population that was foreign-born. In 1890, 4 percent of the state's population was foreign-born. This percentage had decreased to 1.7 percent in 1910 (U.S. Census 1892, 1913).

Advertisements and personal representatives were sent to immigration agencies in the U.S. and abroad just after the Civil War, with the hope of bringing in foreign labor and their wealth. Societies such as the Kentucky Industrial and Immigration Association, incorporated in Louisville in 1867, also were established. However, these efforts resulted in the immigration of only 3,500 persons (Traughber 1942). Part of the failure may be blamed on the lack of a strong state bureau of immigration to encourage immigration to Kentucky. Many Kentuckians were not totally committed to large-scale immigration and expressed fears of radicalism, the dangers of polluting their pure "English stock," and other objections in scathing editorials to the newspapers. While the percentage of foreign-born individuals living in the U.S. increased by 20 percent between 1860 and 1870, it declined by 6 percent in Kentucky, a trend that continued throughout the remainder of the nineteenth century (Traughber 1942).

There were important differences by cultural landscapes, with some foreign-born immigrants coming to areas where mines were in operation or railroads were being built. For example, the number of foreign-born increased by 1,158 in the Appalachian Mountains Cultural Landscape, and by 620 in the Knobs region of the Bluegrass Cultural Landscape from 1880 to 1890, while it decreased in all other areas of the state. While there was a general population loss in the Western Coalfield Section of the Pennyrile Cultural Landscape from 1880 to 1890, the foreign-born population of Edmonson, Grayson, McLean, Ohio, and especially Muhlenberg counties increased. In contrast to all other regions, the Western Coalfield Section experienced a small general increase in its foreign-born population between 1870 and 1880, especially in the mining counties of Hopkins and Daviess counties (Traughber 1942).

Several immigrant communities were established during this subperiod. A state immigration board was created in 1880, although it disbanded in 1887 due to a lack of funds. The board and later governmental efforts emphasized the establishment of colonies of immigrant farmers, mostly Swiss or German, but they did not encourage general immigration to the state. Although a greater majority of immigrants did continue to come as individuals, several agricultural communities were established in the 1880s and early 1890s. These include Bernstadt, East Bernstadt, Strassburg, and Langnau in Laurel County; Saaner, Lutherheim, and Highland in Lincoln County; New Austria in Boyle County; Templar Springs in Edmonson County; and other smaller colonies in Christian and Lyon counties (Traughber 1942).

Other immigrants were attracted to jobs in manufacturing in the Ohio Valley Urban Centers (i.e., Louisville and the Covington-Newport area), where Germans comprised about half the foreign-born population. By 1890, 16.5 percent of those employed in manufacturing were foreign-born, even though immigrants comprised only 4 percent of the state's population (U.S. Census 1892). Martin (1988) has suggested that the movement of immigrants into an area may have had a greater effect on a community than the actual numbers of immigrants living in urban contexts would suggest, especially since many were craftsmen and builders. The debates and divisions of the Civil War created animosities between many residents of Kentucky, and although the state had not seen extensive destruction from battles, it had been militarily occupied and a great deal of property had been lost to guerilla bands, appropriation by armies, or neglect.

Relations between slaves and their masters had frequently been disrupted in the early 1860s, when some slave owners began paying wages to their slaves to keep them on plantations (Howard 1983). Many slaves left their owners during the war. Slaves of Confederates were freed if they enrolled in labor battalions, which also extended freedom to their wives and children (Coulter 1966). At least 20,000 Kentucky slaves joined the Union Army (Tapp and Klotter 1977), thereby securing their freedom. This freedom also was extended to their wives and children in March 1865, which increased the number of Kentucky slaves freed by this means to nearly 100,000. Efforts at enlisting slaves were especially strong late in the war, and continued heavily in Kentucky even after the war was over, which was resented by the slave-holding population. President Andrew Johnson estimated that out of the 230,000 Kentucky slaves in 1860, only about 65,000 had not been freed by the fall of 1865 through enlistment or the automatic freeing of slaves of Confederate soldiers. Any remaining slaves were freed in December 1865, when the 13th Amendment was ratified without Kentucky's support.

Kentucky did not undergo Reconstruction, but the Federal government would not seat several elected Congressmen from Kentucky, and the state was included in the activities of the Freedmen's Bureau in December 1865, the only non-Confederate state to receive such attention. Freedmen's Bureau offices were established in Lexington, Maysville, Covington, and Louisville, with smaller offices scattered across the state (Coulter 1966). The Freedmen's Bureau offices in most of Kentucky remained in operation until 1869 and until 1872 in Louisville.

The Bureau created much controversy, especially in its more political operations. However, it did not have to deal with confiscated lands, as it did in Confederate states. Thus, more time and effort could be directed toward providing food and clothing, setting

up schools, and helping to organize labor. By 1869, the Bureau had set up 391 schools for freed slaves. It was less successful in obtaining labor contracts, which were generally negotiated on the local level and were quite variable. Howard (1983) suggests that labor contracts were most successfully implemented on plantations or farms that slaves had not left during the war; securing the return of laborers who had left proved more difficult. Despite labor shortages, wages were generally low for African Americans, which did little to encourage a return to agriculture. The Bureau tried to enforce the payment of back wages to the wives and children of ex-slaves who had enlisted in the Union Army, but these efforts were not very successful and created much hostility from former slave-owners.

Many slaves left the farms of Kentucky for towns and cities, especially Lexington and Louisville, during and just after the Civil War. Some who went to Louisville during the War sought the protection of the Federal Army, and many were issued passes to cross the Ohio River. However, ship captains and the railroads would not always honor these passes without the additional permission of the owner or former owner (Coulter 1966). Others were looking for work away from the plantation, which was not always easy to find, in part because of threats of censure or violence against those who hired African Americans. Despite these problems, the migration to the cities continued, especially when a truly radical reconstruction program, which would have redistributed land to ex-slaves, was not pursued. The years following the Civil War were full of difficult transitions (Lucas 1993).

In the 23 Kentucky cities or towns examined by Traughber (1942), the African-American population increased dramatically between 1860 and 1870, while the Euro-American population grew more slowly, or in some communities, decreased. For example, Lexington's African-American population increased from 3280 in 1860 to 10,745 in 1868, whereas the Euro-American population of Lexington, which was nearly double that of the African-American population in 1860, by 1868 was only 458 persons larger than the African-American population. Similarly, Louisville's African-American population increased by 119 percent and Covington's increased by 304 percent during this time, while the Euro-American populations of these communities increased by 40 and 44 percent, respectively (Traughber 1942:8).

The movement of African Americans from rural settings to towns and cities or out of the state created extreme labor shortages on farms. By 1870, the African-American population of Kentucky was 6 percent less than it had been in 1860. This is in contrast with the states of Indiana and Illinois, whose African-American population more than doubled during this decade (Traughber 1942). Many Kentucky cities initially passed vagrant laws and other "slave codes" or "black codes" to regulate their growing African-American population, and negative impacts also were felt by the established free black community (Thomas 1973). These codes often stipulated that African Americans with no proof of employment could be arrested or forced into farming contracts. By 1872, these codes had largely been overturned.

It is unlikely that many African Americans had much in the way of material goods or savings as they began their new lives. For example, in 1870, only 11 percent of the African Americans in Kentucky had personal property worth $100.00. Although African

Americans comprised 45 percent of the population of Kentucky, they owned only 6 percent of Kentucky's wealth (Tapp and Klotter 1977).

The readjustment of labor arrangements in the South after the war usually involved much experimentation. A real labor shortage, plus the failure to establish a labor system for African Americans, led many landowners to call for foreign labor. These efforts were not very successful, as discussed previously. Also, many African Americans, themselves anxious to secure employment, began to resolve their own labor situation. In Fayette County, for example, local African Americans formed the Intelligence Office, an organization that secured over 3,000 labor contracts in 1869 (Smith 1972). By this time, many African Americans in other parts of the state had resumed work on farms, which reduced calls for foreign labor (Howard 1983).

In much of the South, the usual sequence of labor organization was from wage labor, first in gangs and then more individually, to sharecropping, renting, and other labor arrangements during the late 1860s and early 1870s. Sharecropping by individual households became the norm in many areas of the South, because it satisfied the desires of African Americans for increased autonomy despite a lack of resources, and the desires of landowners to share agricultural risks. Intermediate between wage labor and individual sharecropping was the squad system of production, in which a group of households, often related by kinship, contracted and worked a certain area of land together. The individual sharecropping arrangement usually involved moving formerly clustered slave houses to more dispersed locations or constructing new houses (Prunty 1955). In contrast, the squad system and wage labor was more conducive to continued occupation of the existing clustered slave houses.

Whether a region was a cotton producer or had an agricultural economy based on hemp and tobacco may be an important factor in the nature of the labor arrangements worked out by exslaves. In this regard, Howard (1983:97) has suggested that, unlike much of the South, sharecropping arrangements were not popular in Kentucky, where most exslaves worked for wages. Yet he (1983:128) also has suggested that, like other areas of the South, most exslaves in Kentucky preferred to work and live as individual families, in their own houses on their farms.

In contrast to the pattern of residential dispersal assumed for most of the South, special rural hamlets to house exslaves were constructed on many farms in the Inner Bluegrass Section of the Bluegrass Cultural Landscape (Alvey 1992; Smith 1972). At least 30 of these hamlets were studied by Smith (1972). All were densely nucleated, constructed of a series of contiguous lots, usually long and narrow, with enough room for a garden and some animals, although not large enough for complete subsistence. These lots were usually sold, although they were occasionally given, to African Americans by a landowner/employer. Less frequently, the land was turned over to a developer, who then sold it to the occupants. These hamlets were generally more isolated and had less access to other communities than small hamlets occupied by Euro-Americans (Smith 1972). The nucleated black communities were more similar to the clustered pattern of the earlier slave quarters than to a series of dispersed farm houses, although hamlets were significantly different from the old quarters in that the occupants usually owned the property they lived on and enjoyed a tremendous increase in privacy and autonomy. The clustered hamlets depended on their relationship with the large farms, which needed

many employees in one area, and would perhaps be less viable where landholdings were smaller or agriculture was less intensive.

Other types of African-American communities were founded. One such community is Coe Ridge, located in the foothills of the Cumberland Mountains in Cumberland County. Coe Ridge was settled by newly freed African Americans, on land deeded to them by their former master. It remained somewhat isolated from Euro-American society until the 1950s (Montell 1970).

Cities and towns in Kentucky during the Antebellum subperiod were not very segregated, since most slaves lived in or near the houses of their Euro-American owners (Kellogg 1982; Wright 1985, 1992). After the war, African Americans became concentrated in the lower-rent and less desirable (often low, poorly drained, or semi-industrial) areas of towns. Kemp's survey of tenement houses in Louisville found that approximately 50 percent of these substandard housing units were occupied by African Americans, much higher than the percentage of African Americans in the total population (Kemp 1909). As long as there also were Euro-American families living in these areas (as there were in Louisville and elsewhere), this in itself did not guarantee segregation, although it contributed toward it. Most African Americans may not have desired to move into Euro-American neighborhoods, especially if there were established African-American neighborhoods in the community with good access to work, and higher and drier elevations.

Over time, the size of the African-American population, coupled with uncertainties about economic and social relationships, led to heightened tensions and fears that expressed themselves in informal and formal discrimination in housing. By the turn of the century, separate housing areas for African Americans had developed in most cities (Groves and Muller 1975; Hayes 1918; Kellogg 1982; Taeuber and Taeuber 1965), and formal segregation ordinances were common after 1910 (Rice 1968). In Lexington, as early as 1868, advertisements for newly developed lots specifically stated that the lots would not be sold to African Americans, while other lots were advertised as specifically for the African-American population (Kellogg 1982). In Louisville, Wright (1985, 1992) described a pattern of interspersed clusters of African-American and Euro-American houses between 1880 and 1910. He suggested that total residential segregation was not necessary, since segregation was well-established in most economic and social arenas (Wright 1985:107), a pattern shared by other urban centers as well (Kellogg 1982; Share 1982). However, some African Americans achieved a measure of economic and occupational gain, even accumulating enough wealth to move into better furnished neighborhoods after the turn of the century, which created ambiguities in the social order. The response to these ambiguities was a segregationist ordinance in 1914, which not only forbade African Americans to move into Euro-American neighborhoods, but also forbade Euro-Americans to move into African-American areas. Although this ordinance was overturned by the U.S. Supreme Court in 1917, largely through the efforts of the NAACP, informal sanctions continued, including harassment, and residential segregation increased throughout the Postbellum subperiod (Wright 1985:121, 232). The growing trend of moving away from the center of cities, especially by wealthier Euro-Americans, also tended to increase residential segregation.

Developments in Agriculture

Despite the tremendous amount of readjustment occasioned by emancipation, agriculture in the state generally recovered rapidly after the Civil War. The lesser amount of damage suffered in Kentucky, compared to Virginia and North Carolina, and the fact that the state had an important rail line already in place before the war commenced, the Louisville and Nashville, contributed to its overtaking these states in tobacco production by 1870. By 1870, Kentucky also was first in hemp production, third in the production of mules, fifth in the production of swine, and eighth in the production of corn, wheat, and flax (Axton 1975; Tapp and Klotter 1977). By 1900, the value of farm products produced in Kentucky was $123,000,000, the highest in the South except for Texas (Tapp and Klotter 1977).

Many ex-slaves that lived in Kentucky had spent much of their lives growing and processing hemp, especially in the Bluegrass Cultural Landscape. After the Civil War, with the rapid resumption of cotton planting in the South, the demand for hemp was very high. The high labor needs of the new crop were largely met by free African Americans, although many now lived in town and worked seasonally on the hemp crop. But the demand for hemp declined during the Postbellum subperiod, due to its replacement by iron ties to bale cotton, the reduction in the number of sailing ships that used hemp rope as rigging, and competition from foreign fibers such as jute.

Just as hemp was declining, a new form of tobacco, white burley tobacco, was gaining popularity in the Inner Bluegrass Section of the Bluegrass Cultural Landscape. The origin of this form of tobacco is uncertain, although it may have originated as a mutation in Brown County, Ohio, in 1864 (Axton 1975:68.). Shortly thereafter, it was introduced into Kentucky and other surrounding states (Axton 1975; Clark 1960; Tapp and Klotter 1977). This new form of tobacco, which grew particularly well in the soils of the Bluegrass Cultural Landscape, was milder and more easily flavored than the dark-fired type, making it especially suited for the growing U.S. plug market. Tobacco production in Kentucky increased more than 70 percent from 1870 to 1900, especially in the Bluegrass Cultural Landscape and parts of the Pennyrile and the Jackson Purchase cultural landscapes (Tapp and Klotter 1977).

Other than the introduction of Euro-American burley tobacco and its spread in the Bluegrass Cultural Landscape, there were few other changes in the types of agriculture practiced in the state during this subperiod. Livestock continued to be important for export and home use, although hogs declined in relative importance and sheep declined in both relative importance and in numbers, due to problems with wild dogs (Burroughs 1926; Davis 1927) and a decreased demand for wool. With improvements in transportation during this subperiod, most farms, especially those near a railroad, increasingly participated in production for export. Wheat was an important commercial crop in parts of the Pennyrile Cultural Landscape during this subperiod (Martin 1988). The increased possibilities for commercial agriculture created by the railroad may have resulted in greater differences between farms based on access to transportation networks.

Less fertile areas of the state, such as the Appalachian Mountains Cultural Landscape, the Hilly Eastern Section of the Pennyrile Cultural Landscape, and the eastern

hills of the Jackson Purchase Cultural Landscape, were not dependent on tobacco and probably remained more oriented toward subsistence crops, especially corn and livestock (Burroughs 1924; Davis 1927; Martin 1988). Corn was one of the most important crops grown in Kentucky because of its versatility for human and animal consumption, ease of cultivation and storage, and tolerance of a variety of soil types. Higher than average concentration on corn and sorghum marked the less commercially oriented farms during this subperiod (Davis 1923; Martin 1988). Farming methods probably did not change much during this subperiod. Louisville was a major manufacturer of agricultural implements, which should have ensured a ready supply of tools.

One of the more important Postbellum agricultural developments was soil depletion. Martin (1988) has noted that by 1890, yields were beginning to decline in the Pennyrile Cultural Landscape as lands began to wear out. In some areas, this decline did not become a significant problem until the turn of the century (Burroughs 1924, 1926; Davis 1923, 1927; Sauer 1927). Farm tenancy and farm mortgages increased during this subperiod. Tenancy increased from 26.5 percent of farm operators in 1880 to 33.9 percent in 1900. During this period, the relative frequency of cash renting declined, while share-renting and share cropping increased (U.S. Census 1913). As mentioned above, tenancy was one way to make use of freed slaves that had knowledge and expertise in agriculture but no land and little means of acquiring it. Increased tenancy between 1870 and 1900 was, at least in Kentucky, also attributable to the economics of tobacco production, in which high prices coupled with high labor demands and high land prices often made renting and working small acreage a profitable way to farm. This probably created a very different form of tenancy than in the cotton South.

There were differences between tenant farms and owner-operated farms in Kentucky, as elsewhere. The value and size of owner-occupied farms were much larger than those occupied by tenants. Within each ownership class, there also were consistent differences by ethnicity, with Euro-American farms being worth more than African-American farms. For example, in 1910, the average size of a Euro-American owner-operated farm was 104.7 acres, with an average value of land and buildings of $2,507. The corresponding figures for the average Euro-American tenant farm were about 50 percent less than that of the owner-operated farms (51.5 acres and $1,782, respectively). African-American owner-operated farms were, on average, 43.1 acres, smaller even than the average Euro-American tenant farm, and valued at $1,207 (with buildings), also less than the Euro-American tenant farm. The average African-American tenant farm was 31.4 acres in size and valued at $1,302 (with buildings). African-American tenant farms may have had a higher average value than African-American owner-operated farms, since they would have included buildings and other improvements made by and belonging to a landlord. Based on his research on the Pennyrile Cultural Landscape, Martin (1988:266) suggested that African-American farmers had a better chance of becoming autonomous cash renters, as opposed to share-croppers, when they farmed less desirable and probably less commercial farms, such as those located in the Eastern Section of the Pennyrile Cultural Landscape.

Agricultural deterioration was especially marked during the latter decade of this subperiod in the Appalachian Mountains Cultural Landscape and the Western Coalfield Section of the Pennyrile Cultural Landscape. To some degree, many local persons

refused to participate in the lumber and coal industries, and continued farming much as before. More frequently, farming practices were greatly affected by the extractive industries. For instance, those who had sold timber rights, or whose neighbors had done so, often experienced extreme erosion and loss of fertility on their land. The coal towns themselves often took up much of the flatter, more valuable farm land. Many farmers engaged in part-time employment in the timber and coal industries, and farms suffered from the resulting loss of labor. Also, the large number of individuals who came into these cultural landscapes to survey, negotiate with landowners, and extract coal and timber required food. Although some of this food was brought in by the coal and timber companies, much of it, especially in the early years of these industries, was provided by mountain farmers who altered their farming strategies and sold surpluses that they previously had stored for their own use (Caudill 1963; C. Jones 1985). Increased corn production also was needed for the oxen and other animals sometimes used to haul out the logs (Caudill 1963).

This increased demand for food, coupled with soil erosion from lumbering, caused farmers to increasingly cultivate less fertile land, often on slopes. These soils provided low yields and were worn-out in only one or two years. Livestock in the Appalachian Mountains Cultural Landscape had declined to only 39 percent of its 1880 level by 1930 (Kirby 1987), creating a greater dependence on wage labor and the production of goods, for sale, such as whiskey. Some farmers used money from coal and timber rights to acquire land from other farmers. This resulted in a large number of landless farmers, many of whom became sharecroppers, and increased social stratification in this cultural landscape. Loss of land to other local farmers and sales to timber and coal buyers resulted in a tenancy rate of nearly one-third of all farmers in the Appalachian Mountains Cultural Landscape by 1910, similar to the rest of the state (Caudill 1963).

Besides the introduction of white burley during the Postbellum subperiod, the marketing of tobacco underwent several changes. The system in use throughout most of the nineteenth century was one of direct buying by manufacturers or agents in the barns of farmers. The tobacco was then shipped in hogsheads to marketing agents, most of whom were located in Louisville. This produced a dispersed economic network (much like the earlier factorage systems) but with strong control by Louisville.

In 1890, J. B. Duke began the formation of an international buyers trust under the American Tobacco Company that, through price wars and other means, had assumed monopolistic control over at least 250 manufacturers by 1902 (Axton 1975; Channing 1977). Lower prices, partly due to overproduction and partly because of the trust's control, led to strained economic conditions. This led to much hostility and violence in the early years of the twentieth century, especially in the Jackson Purchase Cultural Landscape and the Plains Section of the Pennyrile Cultural Landscape (Axton 1975; Campbell 1993; Martin 1988). Violence died down by 1908, partly due to public reaction and partly because tobacco prices were rising. Also, the American Tobacco Company trust had been challenged under the Sherman Anti-Trust Law in 1908 and was dismantled in 1911 (Axton 1975). Campbell (1993) argues that more attention is needed to understand the dynamics of burley growers' resistance in the Bluegrass area, which has been overshadowed by the violence experienced in western Kentucky. His study makes

many comparisons to the debt peonage of the deeper, cotton producing regions where widespread tenancy and an exploitive mercantile supply system was in place.

Meanwhile, loose leaf tobacco warehouses, the first of which was established in Lexington in 1904 (Axton 1975; Channing 1977; Clark 1960), began to grow and encourage competitive pricing. Lexington grew as a tobacco marketing center during this subperiod, although most county seats in tobacco-growing counties also built warehouses and experienced growth. Good prices for tobacco, especially in the 1910s, and the introduction of the popular blended cigarette in 1913 (Axton 1975) led to increased production and much profit during these years.

Developments in Commerce and Manufacturing

Like agriculture, commerce and manufacturing also increased after the Civil War. General manufacturing and commercial developments in the state will be discussed first. As noted above, because of the effects lumbering and coal mining had on Kentucky, these industries are discussed in more detail in the following subsection.

Following the end of the Civil War, many persons in Kentucky were anxious to resume businesses and establish new economic links with the rest of the nation. Kentucky's economy, oriented generally to the South, had been heavily disrupted during the war. Following the war, the poverty of the South, its lack of credit and currency, and the rise of new marketing systems to replace the old factorage system meant that Kentucky businesses had to adjust to new conditions. Louisville, which had established itself as the manufacturing center of the South before the war, sent many drummers and traders into the South to protect its trade, especially from Northern businesses that attempted to establish new relations with Southern storekeepers (Clark 1960). Louisville did manage to hold on to its position of prominence in Southern trade, despite its failure to block the Cincinnati to Knoxville rail line. In fact, by 1900, Louisville was the top Southern manufacturing city and the second largest population center in the South (Ellis 1981).

Mass production and a growing desire for consumer goods stimulated retail trade and the growth of most towns and cities during this subperiod. Wage labor increased the purchasing power of most individuals and stimulated industry to produce more goods, especially in the latter part of this subperiod. Coal mining especially stimulated retail trade, although some of this money went directly through the company stores to out-of-state owners or to centers like Lexington and Louisville. The county seats, especially those where agriculture was more commercially oriented, grew in population and retail business during this subperiod. The rural furnishing merchant was an essential part of farm tenancy in the cotton-producing regions of the deep South, initially for African-American tenants but toward the end of the century for Euro-American tenants as well (Ransom and Sutch 1977; Weiner 1985).

City or town dwellers may have had more opportunities to purchase mass-produced goods compared to rural persons, and may have had better access to the latest technological innovations, styles, and new merchandise of the late-nineteenth and early-twentieth century. Yet mail order from companies such as Sears or Montgomery Ward was a major equalizer in terms of access to goods (Schlereth 1980).

In Kentucky at this time, there also was a great deal of interest in increasing manufacturing, improving transportation, diversifying the population, and attracting new wealth to the state. The legislature encouraged such activities by freely granting charters for new operations, and by offering tax exemptions and other favors to new corporations. Kentucky representatives were sent to exhibitions, and brochures that extolled the natural resources of Kentucky were prepared and distributed around the country and abroad. The Geologic Survey of Kentucky was established in 1873 as part of these promotional activities. Increased supplies of coal, plus access to new power sources such as electricity, first used industrially in the 1880s, greatly facilitated manufacturing during this subperiod.

Throughout this subperiod, a sizeable portion of goods manufactured in Kentucky were made from wood or cloth (Martin 1988), as hemp-related manufacturing declined. By 1870, there were only 11 hemp bagging factories in Kentucky, and most of these were in Fayette and Jefferson counties. By 1900, these had all disappeared, although six twine mills were still in operation (Hopkins 1938). In general, Kentucky's record in manufacturing during this subperiod was more representative of a Southern than a Northern state. Most of the factories located in Kentucky were concentrated in the Ohio River counties, and especially in the urban areas like Paducah, Henderson, Owensboro, Louisville, and the Newport-Covington area, which all increased in population and wealth during this subperiod. The three largest manufacturing centers in 1880 were Louisville, with 17,484 hands; Covington, with 2,925 hands; and Newport, with 1,748 hands (U.S. Census 1883). Of the 37,391 individuals who had manufacturing-related jobs in 1880, 60 percent lived in these three cities, with Louisville alone accounting for 47 percent.

By 1910, the total number of people in the state employed in manufacturing had risen to 65,400 persons, up 74 percent from the 1880 level. The three most important products manufactured in Louisville at this time were, in order of value produced, tobacco, distilled liquor, and materials made or repaired by foundries and machine shops, primarily for the railroad industry. Although tobacco-stemming factories grew in the latter part of the nineteenth century in cities such as Owensboro and Henderson, Kentucky continued to specialize in the growing and shipping of tobacco (Axton 1975). In 1910, 19 percent of manufacturing jobs in Kentucky were in lumber-related industries (U.S. Census 1913). Other important Kentucky industries during this subperiod were foundries, printing (especially of newspapers), brick and tile manufacturing, and carriage making, all of which employed over 1,400 persons by 1890 (U.S. Census 1892).

Although industrial activity in Kentucky was concentrated in the Ohio Valley Urban Centers Cultural Landscape, some rural industries continued to thrive during this subperiod. Important rural industries included the timber industry and iron smelting or iron furnaces. These furnaces needed huge quantities of wood for charcoal and were thus usually located in rural areas. Together with coal, iron ore could have contributed to an integrated iron and steel industry in the state. However, problems with low-grade iron ore, the sulphur and ash content of Kentucky coal, low local demand for iron and steel, and slow economic growth during the 1870s hindered the development of this industry at the coal source (Vann Woodward 1951). In the second half of the nineteenth century, the development of Lake Superior iron ore, which was a much higher grade than Kentucky

ore, further reduced the chances for a competitive iron industry in the state. Iron furnaces were much more common in Kentucky before the Civil War; Eubank's (1927) study listed 36 that were founded before 1865 and only nine that were founded after that date.

These later foundries were mostly located in the Red River Valley in Powell County, the Hanging Rock area in Estill County, or the Cumberland River area in Trigg County. The latter two counties were the most prominent iron ore centers. In 1880, there were 22 iron furnaces operating in the state; by 1890, there were only six (U.S. Census 1892).

Some of these works were quite large. The Red River Iron Works was one of the largest of its kind in the 1870s, and over 1,000 workers from the foundry lived in the nearby town of Fitchburg (Burroughs 1926). Some interesting changes in technology were introduced at the Red River Iron Works, where, in 1869, stone-coal furnaces constructed of cast iron and other metals began to replace those of brick and masonry construction.

Major iron works also were constructed in other areas of the state during this subperiod, although they relied on imported materials. In the Ohio Valley Urban Centers Cultural Landscape, the Newport Rolling Mill Co. was organized in 1890 and the Andrews Steel Company was organized in Newport in 1908. Foundries also were a major industrial resource in Louisville, as mentioned previously. In the Appalachian Mountains Cultural Landscape, the American Rolling Mill Company, organized in Ashland in 1869 as the American Rolling Mill Blast Furnace, evolved into a major producer of steel by the early-twentieth century. At least 45 coke ovens were in operation in the Western Coalfield Section of the Pennyrile Cultural Landscape by 1880. However, the coal in this region was even less suitable for coking than coal from the Appalachian Mountains Cultural Landscape, and by 1887, only one of these furnaces was still operating (Burroughs 1924).

In addition to its overall growth, manufacturing changed in other ways during the Postbellum subperiod. Small-scale local manufacturing decreased, because local industries could not compete with the more efficient large-scale commercial manufacturing operations. Because large-scale commercial industries were not that common in Kentucky, this trend had the effect of increasing the number of goods coming into the state. Exceptions to this pattern may be found in the Appalachian Mountains Cultural Landscape and other areas, where transportation problems resulted in a longer continuation of some home and local manufacturing. Thus, local industries in these areas, such as blacksmithing and milling, remained important during this subperiod. For example, there were 341 flour and other grain mills in the state in 1899, and by 1910 the number of mills had increased to 440 (U.S. Census 1913).

Related to the decrease in local industries was an increase in the consolidation of small manufacturing operations. This was part of the larger process by which large corporations were formed during the Postbellum subperiod. Also, the decline of local industries stimulated rural to urban migration. Consolidation may have resulted in a reduction in the diversity of businesses located in small towns and rural areas, and perhaps regional socio-economic variation as well. Consolidation also may have decreased the diversity in manufactured goods produced in small towns and rural areas.

Developments in Communication and Transportation

Many important new inventions promoted communication. Telephones were received enthusiastically in the United States, where over 10 million had been installed by 1914 (Kern 1983). Telephone service was established in Louisville by 1879 and in Lexington by 1882 (Tapp and Klotter 1977). Long-distance telephone was available by 1892 (Kern 1983). These developments may have resulted in a reduction of regional differences and an increase in the spread of new ideas.

Many of the developments in commerce and manufacturing discussed previously were related to changes in transportation, as this subperiod sees the introduction of motorized vehicles (the first Kentucky-owned car was in Harlan in 1899 [Hepner and Whayne 1992]). These changes directly affected a community's access to goods from outside regions and heavily influenced the growth of industry, commerce, and agriculture. Transportation improvements encouraged some communities to grow at a faster rate than others, which may have increased differences between communities. Especially toward the end of this subperiod, improvements in transportation may have extended the hinterlands of some towns and cities, causing cross-roads hamlets to decline. In fact, the continued existence of small hamlets may serve as a ready indicator of relatively underdeveloped transportation networks, compared to areas in which hamlets declined.

Distance was not only reduced by inventions like the telephone, which were especially used in the urban setting, but by developments in transportation. Improvements in long-distance travel and transportation were just as important as local changes. On the local level, mule or horse-drawn street cars on iron rails provided transportation by the 1870s and 1880s. Several lines, such as in Louisville and Covington, were initiated as early as 1864 (Hepner and Whayne 1992). These "horse-car" and later electric tracks usually followed main roads and provided access to newly developing suburban neighborhoods. Cable cars were not important in most cities except for a few years in the late the 1870s and early 1880s. Mule-drawn cars were replaced by the electric streetcar, which was invented in the middle 1880s, perfected in 1888, and spread rapidly in the 1890s (Jackson 1985; Stilgoe 1983). In Kentucky, electric street cars could take passengers on a 18-mile route in Lexington or a 40-mile route in Louisville (Tapp and Klotter 1977). Lines were established in Lexington and Louisville in 1890, the latter being one of the first to operate on electricity in the U.S. (Hepner and Whayne 1992). The electric technology also encouraged the growth of interurban lines, such as between Lexington and Georgetown in 1901 (the first in the state) and soon after to Versailles, and extending out from Louisville (Hepner and Whayne 1992). These lines were important in centralizing retail trade, decreasing the isolation of rural areas, and promoting rural-urban interaction. In fact, some rural residents worried that these lines would bring vices such as "urban consumerism" into the rural areas (Stilgoe 1983:307), which they perhaps did.

The poor condition of Kentucky's roads was not conducive to bicycle travel, although Kentucky did experience the "bicycle craze" around the turn of the century (Harrison 1984). Bicycles cost as much as $150 in 1893, when they were still new, but declined in price to between $3 and $5 by 1902. Whereas the expense of a horse, or a horse and wagon or buggy, denied long-distance transportation to many citizens, the

cheapness of bicycles by the turn of the century earned them a place as "social levellers" (Kern 1983). Bicycles increased the amount of distance a person without a horse could travel per day (from 2 to 3 miles to 10 to 20 miles) and expanded the social mobility of these persons. Bicycles were especially useful within towns and cities and permitted travel between small towns in the flatter parts of the state. The increased interest is demonstrated by the 1894 publication of a map of the best roads for bicycles (Hepener and Whayne 1992). It is unlikely, however, that they ever played a major role in transporting goods within the state.

Communication and transportation improvements led to the growth of residential suburbs and increased the ease by which people could commute to cities from the suburbs. This resulted in the growth of many cities in the early-twentieth century. Whereas cities previously had been "walking" settlements, with the most desirable residential location near the city center, interurban lines and streetcars made movement toward the edges of cities and towns more desirable. The response to this new option was an enthusiasm for suburbs not matched in Europe or any other developed society (Jackson 1985). Suburbs were seen as combining the best aspects of rural life, especially lack of crowding and the opportunity to have a garden and lawn, with the amenities of urban life (Jackson 1985; Kern 1983).

Railroads

After the Civil War, there was an increase in railroad chartering and construction. Railroad building had been underway since the 1830s, but except for the Louisville and Nashville and feeders from the Ohio River to Lexington, few important lines had been completed when railroad building was interrupted by the Civil War. Following the Civil War, construction continued with increased enthusiasm and at a faster pace. Many of these developments are laid out in the transportation chronology constructed by Hepner and Whayne (1992). The state encouraged railroad construction by readily granting charters and by low taxation; over 210 charters had been granted by 1886 (Martin 1988). The power of the larger rail companies, especially the Louisville and Nashville, occasioned some protests of monopoly and abuse.

An 1878 bill that raised taxes on railroads was not well-enforced (Tapp and Klotter 1977) and a Railroad Commission was established in 1880. The Interstate Commerce Commission, established in the late 1880s, standardized gauge sizes. This improved transferability between lines and greatly aided transportation (Clark 1960). Between 1870 and 1900, the mileage of railroad track in Kentucky tripled, bringing markets closer and making goods cheaper, shipping of manufactured goods and raw materials easier, and personal mobility less of an ordeal (Channing 1977; Tapp and Klotter 1977).

Railroads had major effects upon regional/local settlement patterns, economic development, access to material goods, and trade networks. They created entirely new sets of features on the landscape. These "metropolitan corridors," in the terminology of Stilgoe (1983), had their own trackside ecosystem of weedy growth, ditches, embankments, gravel-laid track, and sometimes, hobo jungles. Tracks often were used to string the first telegraph and telephone lines and so influenced access to modern

communication. They also frequently were used as convenient, if dangerous, walkways (Stilgoe 1983).

The construction of a railroad frequently heightened the relative commercial advantage that one community might have over another. Although before the railroads, some communities were more favored by their location adjacent to water or at the intersection of major roads, the poor quality of most Kentucky roads tended to lessen competitive advantages. With the introduction of railroads, towns located on or with access to a rail line may have enjoyed benefits over those that were passed by. This process was well-understood by citizens and by business leaders especially, who lobbied long and hard for railroads, frequently donated land and right-of-ways, issued bonds to fund construction, and in other ways contributed to the building of railroads. For example, citizens of Owensboro and Russellville, who desired a line and connections to Nashville, paid bonds and persisted in support through over fifteen years of failure and reorganizations before seeing their line completed (Dew 1978). In 1870 the Louisville and Nashville began to open routes to eastern Kentucky for coal transportation (Hepner and Whayne 1992).

Railroads also increased the possibilities of leisure travel, especially on the luxury liners. Locally, they also stimulated business at several Kentucky mineral spring resorts. Even when the improved transportation was not sufficient to revive local spas, the easy transportation offered by the railroads provided the spas with an added means to distribute bottled mineral water, as was done at Blue Licks, Crab Orchard, and Drennon Springs (Boisvert 1984). One of the biggest battles in railroad building was between the cities of Louisville and Cincinnati concerning a line between Cincinnati and Knoxville (Channing 1977; Clark 1960; Curry 1969). This competition was especially heated as the two vied for the marketing and handling of the increasing amounts of tobacco produced in the Bluegrass Cultural Landscape during this subperiod (Axton 1975). Before the completion of this line, goods from Cincinnati going south went through Louisville. Therefore, the line between Cincinnati and Knoxville also was desired by business concerns in Lexington and other cities in the Bluegrass Cultural Landscape, who saw themselves in a competitive situation with Louisville and the Louisville and Nashville line. Louisville was initially able to block the charter Cincinnati needed to construct the line, but with federal intervention and persistence, Cincinnati prevailed. The completion of this line in 1880 greatly increased the market connections of the Inner Bluegrass Section of the Bluegrass Cultural Landscape and provided the entire state with improved transportation to the north and east, although its completion lessened the importance of the Lexington to Maysville line. The Inner Bluegrass Section came to have a very dense network of rail connections, although Davis (1927) has suggested that this was largely due to its central location rather than the need to provide transportation for products manufactured or grown in this region.

Other important rail lines that were constructed during this subperiod were the lines connecting the Inner Bluegrass Section with the Appalachian Mountains Cultural Landscape. One of these, the Chesapeake and Ohio Railroad (C & O), took in many smaller lines, such as the Lexington and Big Sandy. Although some areas of the Appalachian Mountains Cultural Landscape had railroads as early as the 1870s, and Ashland and Louisa had rail connection by the early 1880s (Scalf 1966), construction of

the Chesapeake and Ohio was important in opening up this cultural landscape, especially after 1887 (Eller 1982; Thomas 1971). The Louisville and Nashville Railroad also completed rail lines into the Appalachian Mountains Cultural Landscape, reaching Jellico in 1883. By 1888, the railroads had reached Pineville, in Bell County (Eller 1982). Railroad building continued in this cultural landscape well into the twentieth century, as more companies became involved in coal mining and needed railroad lines to bring in supplies and bring out the coal from isolated locales.

Rail lines also increased other connections between cultural landscapes. For example, Paducah was connected to Elizabethtown in the 1870s (Wesler 1984c). The central portion of the Pennyrile Cultural Landscape continued to be an important transportation corridor, as it had previously been via roads (Sauer 1927). Bowling Green especially benefited from its position on the Louisville and Nashville line. Unlike the Appalachian Mountains Cultural Landscape, most of the major lines into the Pennyrile Cultural Landscape were in place by 1880 (Sauer 1927). Besides Louisville, all the major cities located on the Ohio River also were provided with railroads during this subperiod, connecting their agricultural hinterlands with northern manufacturing.

Certain areas of the state were not connected by railroads, and these areas provide comparative settings from which to view the influence of railroads on a community. One such area is located between the Cumberland and Tennessee rivers in the Jackson Purchase Cultural Landscape. Most of the rail lines in this part of Kentucky were feeder lines to the rivers (Davis 1923). Paducah, located not far from this region, did develop into an important rail center, with connections to the Midwest and the South. It is likely that Paducah participated in Midwestern trade networks to a much greater extent than any other Kentucky city. In the Appalachian Mountains Cultural Landscape, many early settlements had been situated along the valley bottoms, where most of the better roads were located. In contrast, many railroads cut over plateaus to reach rich coal seams. In so doing, they provided new connections to some areas and left formerly well-connected valleys somewhat isolated, especially as river traffic declined in importance.

In the Western Coalfield Section of the Pennyrile Cultural Landscape, the number of hamlets (defined as nucleated settlements with over 20 persons and under 151 persons), towns, or cities located along a railroad increased by just over 100 percent during the early-twentieth century, while the number of nucleated settlements along roads or streams increased at a much slower rate (Pickard 1969). As with the Appalachian Mountains Cultural Landscape, many of these settlements were located along rail lines because of their connection to coal. Entirely new communities were often established at important railroad junctions (and were sometimes called "junctions") to provide necessary maintenance for the railroad.

Towns at the intersections of different rail carriers also grew because of the administrative jobs needed for the transfer of freight from one line to another (Martin 1988). For example, in the Inner Bluegrass Section, Lexington, with the Southern, Louisville and Nashville, and Chesapeake and Ohio lines, and Winchester, with the Louisville and Nashville and Chesapeake and Ohio, grew particularly fast (Davis 1927). Business districts within towns that had been oriented to a river or road were often reoriented toward a new rail line. Martin (1988) has suggested that since railroads often avoided the center of towns because of high land prices, a second business center

sometimes developed around a new depot, which in turn became a major center for distributing and handling freight, mail, and passengers. "Shanty towns" often grew up around railroad depots and tracks, mainly to house railroad workers. These towns were often composed of closely spaced and poorly constructed houses, some purposely constructed so they could easily be moved (Stilgoe 1983).

Railroads also changed settlement patterns in that they contributed to the movement of many heavy industries away from the center of the city to its periphery, where concentrated industrial zones often developed. This is in contrast to the Antebellum subperiod, in which industries, often nothing more than "shops," were scattered throughout towns. This settlement pattern was occasioned by absolute economic growth; the need to expand industrial production; the increased usage of coal (often for generating electricity), which polluted the air and required storage; the need for access to good transportation; the increased use of electricity; and a need to locate factories in one story structures that were less prone to fire. These single-function industrial zones were a new part of the landscape and received a great deal of attention from writers and artists of the day (Stilgoe 1983:99-101).

Rivers

The attention given to the development and maintenance of railroads during this subperiod led to the relative neglect of Kentucky's roads and rivers. River towns, such as Smithland in Livingston County and Glasgow in Barren County, experienced a relative decline in terms of their position in the trade and transportation networks during this subperiod. This pattern was not unique to Kentucky. A study conducted in the early 1930s concluded that "traffic on inland rivers and canals largely disappeared between 1870 and 1900" (Nourse 1934:340).

Money that was invested in river transportation was primarily spent on large barges that were towed by stern wheel paddle boats and fast packets, although the bigger steamboats continued to be used as well. Ironically, rivers were used to transport the materials to construct the rail lines, which then often took business away from the river communities. Even when rail service was more expensive, the railroad's speed and lack of seasonal disruptions gave them a tremendous advantage over water transportation. Initially, most river transportation during this subperiod was controlled by private companies chartered by the Kentucky legislature that were supposed to provide service and maintain the river. For example, the Green River was leased to the Green and Barren River Navigation Company from 1868 to 1888. This company built its own boats for commercial use and operated a series of locks and dams on the Green River, charging a toll to non-company vessels. The company shipped tobacco and other agricultural commodities, including timber and rock asphalt, held a U.S. mail franchise, and provided transportation of passengers and incoming freight.

Increased dissatisfaction with the Green and Barren River Navigation Company's monopolistic control over the transportation of goods led to the Federal purchase of navigation rights for both rivers when the Navigation Company's lease expired in 1886. The Federal government (U.S. Army Corps of Engineers) had taken over the Kentucky River in 1879 from the Kentucky River Navigation Company, which had provided

service since 1869 under a lease agreement. In 1879, the Federal government set aside $100,000 for maintenance of the Kentucky River, with an additional $130,000 in 1880. In 1881, Congress set aside $325,000 for the Kentucky, $55,000 for the Big Sandy, $37,000 for the Cumberland, $5,000 for the Tradewater rivers, and a small sum for the Licking River, never a major transportation route (Tapp and Klotter 1977).

Federal commitments to the Green River were more extensive, especially since it was one of the most important, if not the most important source of transportation in the larger Green River Valley area. New lock construction in the late nineteenth century extended navigation on the Green River to Mammoth Cave, on the Barren River to Bowling Green, and allowed navigation on the Rough River (Crocker 1976; Hepner and Whayne 1992). Private boat owners plied the river, often using boats they bought from the old navigation company.

Crocker (1976) has suggested that from 1889 to 1906, shipping on the Green River increased from 193,475 to 342,495 tons. Much of this tonnage was rock asphalt and lumber, but some livestock and tobacco also was shipped. Pickard (1969) cites much higher tonnage: 907,146 tons in 1890, and 591,000 tons in 1928. The river even provided the means for trees to be cut, as boats were rigged as sawmills. Other specialty boats included grocery boats, tinshops, a floating photography studio, mail boats, and passenger and theater boats that often served meals. Passenger travel peaked in the 1920s, with 22,000 passengers in 1922, but had declined to 1,000 passengers by 1932 because of automobiles and improvements to roads (Crocker 1976). Shipping also declined during this subperiod, especially when improved roads made for better connections to rail lines. Anthony (1985) has noted that traffic on the Cumberland River declined in the late 1880s and early 1890s, until only one packet line was running in 1913. Navigation of the Cumberland was improved somewhat in 1892, but mostly south of Kentucky. A dam was completed 26 miles below Burnside in 1911, giving Burnside year-round navigation and connections to rail lines (Martin 1988).

In contrast to the Green River, which benefited from a series of locks and dams, the Big Sandy River received less improvement, despite the pleas of the Big Sandy Valley Improvement Association. Close to $100,000 were appropriated between 1865 and 1871 for the Big Sandy, but the depression of 1873 ended hopes of an extensive lock and dam system on this river. Although a report in 1874-1878 called for a $2,000,000 system of 22 locks and dams to aid in shipping coal and timber on the Big Sandy, all that resulted from this proposal was a moveable needle dam constructed at Louisa in 1897 (Crowe-Carraco 1979). Two new locks were completed on the Big Sandy in 1905 (Hephner and Whayne 1992), Steamboats, flatboats, and barges frequented the Big Sandy during the last quarter of the nineteenth century, as did many log rafts and loose logs. A unique type of sternwheeler, called a “batwings,” which could run on only 30 inches of water, was popular on the Big Sandy River (Crowe-Carraco 1979). As on other rivers, packet lines were organized to carry mail, passengers, and freight, but economic competition, the hazards of the river’s many snags, and loose floating timbers from lumbering meant that many boats were short-lived. Thus, transportation on the Big Sandy was less reliable than on the Green River.

Despite these problems, traffic related to lumbering remained heavy on the Big Sandy throughout the late-nineteenth and into the twentieth century. Logs were floated

down creeks and tributaries, usually loose or in rafts, with the aid of a series of splash dams. These dams were constructed of loose timbers piled together and filled with stone and mud, and were dynamited when enough logs had accumulated behind them, sending a large and violent flood of timbers downstream. Remains of these splash dams, testimony to commercial lumbering, are still observable on many streams (Tom Sussenbach, personal communication 1988). Once the logs reached the Big Sandy, or sometimes not until they reached the Ohio River, they were usually made into rafts. Large strings of rafts often left the mouth of the Big Sandy at Catlettsburg to float to the sawmills at Cincinnati and Louisville on the Ohio. For example, on May 11, 1903, over 1,000 timber rafts assembled at Catlettsburg. Passenger travel and shipping on the Big Sandy grew throughout the subperiod, until the Chesapeake and Ohio reached Pikeville in 1905. In 1900, 28,750 passengers, 200,000 tons of timber, and 300,000 total tons of shipping were transported on the Big Sandy. Only 1,000 passengers, 123,000 tons of timber, and 148,000 tons of shipping were transported in 1905 (Crowe-Carraco 1979:73). Due to the decline in shipping Catlettsburg, and other towns on the Big Sandy may have experienced a decline in population at this time.

The Kentucky River continued to be of major importance, and the administration and supervision of the locks was discussed above. One additional lock was built in 1909. Because of damage to the locks and dams, "loose" timber was prohibited on the Kentucky River in 1910. A final lock was built on the Kentucky in 1912 (Hepner and Whayne 1992).

Despite the general decline in river traffic, the Ohio River continued to be a major source of transportation during this subperiod. The Ohio River received additional federal protection with the 1910 establishment of the River and Harbor Act, which provided modern navigation facilities (Hepner and Whayne 1992). Coal and timber from the Appalachian Mountains Cultural Landscape was frequently shipped down the Ohio for local use, processing, or was transferred to rail connections at Cincinnati or Louisville. The Ohio River Urban Centers of Louisville and Covington-Newport and river cities such as Henderson, Owensboro, Paducah, and Maysville also continued to grow, both because of their role in transportation and because of the industry that grew up along the rivers.

Roads

Roads in Kentucky were perhaps even more neglected than rivers after the Civil War. Sauer (1927) noted that there were few changes in the road networks of the Pennyrile Cultural Landscape from 1820 to 1920, and the same probably could be said for most of the state. The majority of Kentucky roads during this subperiod were private toll roads, maintained by companies that collected tolls from travelers. Most of the major roads were built during the Antebellum subperiod. Kentucky roads suffered during the Civil War and did not receive the repairs they needed after the war because of the diversion of attention to railroads (Allen 1954). Because most roads had only a dirt surface, at best improved with crushed rock (usually limestone or sometimes chert), travel was especially difficult during the wetter months of the year. Most roads were on ridges or in valley floors. Crossing between valleys continued to be a problem, especially in poorly drained areas or areas having soils with high clay content where roads frequently became very slick or washed out. Roads also quickly eroded down to

limestone or shale in many areas, which made for a very bumpy and, in the case of shale, unstable surface. Because of a lack of bridges, many rivers and creeks could not be crossed during times of high water, which added to the difficulty of travel in rural areas. Ferries remained essential to the crossing of the larger creeks and rivers throughout the Postbellum subperiod and into the next subperiod.

Despite poor surfaces and seasonal uncertainties, most parts of the state had road connections to their county seats or important trade centers. These roads were used as they had been in previous subperiods: to drive stock to towns, to haul goods in wagons or on sleds, and for foot or horse travel. Roads were essential to the drummers who connected many rural stores to wholesalers, especially those located in Louisville or Cincinnati. Peddlers also used these roads, often to bring goods directly to houses. Wilhelm (1977) has suggested that peddlers were especially important for distributing goods and news from 1870 to 1930, when many farmers were too poor to maintain accounts at local stores.

Sauer (1927:223) has suggested that the lack of intensive commercial agriculture in the state led to a "tolerance of indifferent roads" and acted as "somewhat of a check to the building of better local lines of transportation." The most important commercial agricultural products in Kentucky at this time, livestock and tobacco, were relatively easy to transport, which probably did not encourage road improvements. In contrast, roads in areas involved in dairy farming, such as in Jefferson County, needed to be smoother, since dairy products were very difficult to transport. Certain parts of the state, especially the more rugged sections of the Appalachian Mountains Cultural Landscape, parts of the Jackson Purchase Cultural Landscape, and the Western Coalfield Section of the Pennyrile Cultural Landscape, consistently lacked good road connections during the Postbellum subperiod (Collins et al. 1996). Because most goods had to be hauled by wagons, terrain was often a restrictive factor. Teamsters, with their large wagons and strong teams of draft mules or horses, were extremely important to the transportation system of the Appalachian Mountains Cultural Landscape. Even with these strong animals, transportation could be cut off in the worst winter weather, and an entire community could depend on the deliveries of several teams (C. Jones 1985). Sleds often replaced wagons in poorer sections of the state, at least for local transportation (Burroughs 1926; Davis 1923).

By 1889, there were 6,910 miles of hard-surfaced roads in Kentucky, of which 5,441 were toll-roads (Harrison 1984). Increased dissatisfaction with road conditions and control by private companies led to cries for "free roads, free markets" in the late 1880s. Violence against the toll gates and houses, which protested rising tolls amidst falling agricultural prices, peaked in 1896 (Hepner and Whayne 1992), greatly reduced the value of the toll companies and contributed toward their purchase by counties. Beginning in 1892, cities were empowered to buy roads within their limits. In 1894, a special tax was levied to help counties assume control of some sections of roads, and in 1896, legislation was enacted that allowed for further control and purchase of roads by counties. The Kentucky Office of Public Roads was formed in 1905, and 1908 legislation encouraged state road building and repair (Hepner and Whayne 1992). By 1913, only 300.5 miles of toll roads existed (Harrison 1984). Counties pursued some improvements in roads, but the fact that only counties, and not the state, could assume control of roads hampered

attempts to build new roads. In 1914, a 5 cent gasoline and automobile license tax was imposed to build roads to connect county seats, and a tax was imposed on property for general road work (Hepner and Whayne 1992).

The introduction of mechanical rock crushers around 1905 led to improved road conditions (Harrison 1984). Asphaltic rock had been in use as early as 1889, and road materials were seen as important enough to justify creation of a road materials testing lab at the University of Kentucky in 1914 (Hepner and Whayer 1992). However, many landowners would not allow roads through their property to be more than 16 feet wide, which hindered the use of some roads (Davis 1923). The use of oil also improved some roads in the early years of the twentieth century, and some cement roads had been built by the 1910s (Harrison 1984). An important innovation during the later years of this subperiod was increased attention to drainage, including the laying of drain culverts, and landscaping and grading with horse-drawn scoops (C. Jones 1985; Pickard 1969).

In 1912, state control of highways was established with the creation of the Kentucky Department of Public Roads, with funds allocated a few years later. By 1914, standards were being set for road construction (Collins et al. 1996; Hepner and Whayne 1992). These monies, coupled with the establishment of Rural Free Delivery in the mid-1890s and Parcel Post in 1913, allowed for increased communication and trade, especially in the mail-order business (Schlereth 1980).

Appalachian Mountains Cultural Landscape: Isolation and Discovery

Because the degree of isolation of this cultural landscape region has been debated by many scholars, advances in transportation need to be taken into consideration when doing research in the Appalachian Mountains Cultural Landscape. Wilhelm (1977) has suggested that the physical isolation of the Appalachian Mountains Cultural Landscape has been exaggerated. Expecting relative isolation compared to other regions, Wilhelm downplayed the role of geography and instead suggested that many mountain farmers rejected participation in extra-local affairs.

Whatever the degree of earlier isolation, areas with timber and coal resources experienced "discovery" during the Postbellum subperiod. On the one hand, industrialists and capitalists involved in the large-scale extraction of timber and coal became increasingly aware of the rich resources in Kentucky (Dunaway 1996; Pudup et al. 1995; Salstrom 1991, 1994). The influx of people into the Appalachian Mountains Cultural Landscape because of these resources occasioned a "discovery" of another sort: the cultural distinctiveness of this region. Between 1870 and 1900, at least 125 short stories and 90 literary sketches of life in the Appalachian Mountains Cultural Landscape were published, largely for outside readers (Batteau 1990; Shapiro 1977, see Horning 2000, 2002 for an archaeologist's treatment of this topic). A variety of interpretations of this cultural landscape were presented, although many alluded to an untouched ancestry or surviving past free from the ills of modern society.

Most people who came to live in and offer assistance to residents of this cultural landscape were from northern cities or, in Kentucky, from the Inner Bluegrass Section. Most were from monied, or at least professional, classes, and many directed their efforts to the Appalachian Mountains Cultural Landscape as part of a retreat from missionary

efforts among Southern African Americans (Cabbell 1985; Klotter 1985; Turner 1985). They frequently emphasized cultural holdovers and concentrated on building "community," collecting ballads, encouraging mountain crafts, and introducing urban Victorian ideas about domestic life. Some narratives and descriptions created by persons involved in these ventures provide direct, although not infrequently biased, observations of the Appalachian Mountains Cultural Landscape during the late-nineteenth and early-twentieth centuries (see Whisnant 1983 for many such sources; also Campbell 1969).

Some of the largest supporters of the settlement schools that were started at this time were coal and timber companies, for whom the attention to "culture" provided a useful screen that directed attention away from the exploitative nature of their relationship with the inhabitants of this region (Whisnant 1983). Unlike the settlement houses of the northern cities, many of the settlement schools in Kentucky had little lasting effect on an area, other than the commercialization of local arts and crafts (Shapiro 1977; Whisnant 1983).

Lumber and Coal Industry in Kentucky

As mentioned previously, one of the biggest changes that occurred in Kentucky during the Postbellum subperiod was the beginning of large-scale lumbering and coal mining. For this reason, and because they have created unique archaeological sites (e.g., mines and associated coal towns) these industries are treated in greater detail in this section.

Lumbering

Local timber had always been an important resource for the residents of Kentucky for building houses and for fuel. It also had been an important source of occasional cash for farmers. Early lumbering activity was on an individual level and small-scale, but beginning in the mid-1870s, persons with an interest in Kentucky timber as a large capital investment began to come into the state and buy timber rights, especially in the Appalachian Mountains Cultural Landscape. Some investors hired Lexington or Ashland businessmen or lawyers, or local county lawyers or officials, to scout-out the best stands of timber and make arrangements with the owners (Caudill 1963). Many out-of-state investors were drawn to Kentucky by exhibits and advertisements, although the timber they bought was often purchased from people who had little interest in promoting the state's economic development. Many initial investors in Kentucky timber were from England. Since American capitalists were pre-occupied with mergers and consolidations of smaller companies in the northern part of the country, they entered the field somewhat late. Sales were often structured around a certain price per tree, generally from .25 to $1.00, which allowed the purchaser to pick the choicest specimens, or sometimes were conducted by a given acreage. Usually it was timber rights that were sold, not the entire property. Many purchases were negotiated years before the trees were removed, and often the tract was not logged until railroads were completed. This meant that many persons sold their timber rights without knowledge of the scale of deforestation or erosion that would take place. By 1890, over 986,286 acres were cumulatively owned by

lumber companies, at an estimated value of $11,921,833 (U.S. Census 1892), and by 1900, some companies owned as many as 95,000 acres (Caudill 1963).

The growth of the timber and coal industries created many changes in Kentucky, besides those that resulted from the removal of these resources. Although lumbering was a fairly simple process, numerous sawmills were needed to shape and prepare the wood for shipment. Initially the logs were floated to mills located at the mouths of streams. By the end of this subperiod, portable steam-powered sawmills were often taken to the trees. By 1910, there were over 30 sawmills in Knox County alone (Eller 1982). Numerous sections of railroad track, often of varying gauges, were laid to carry out the coal and trees, and many splash dams were built on streams. The mines required the building of several industrial features, such as shafts, tipples, sorting and storage facilities, and dump areas (Francaviglia 1988; Hardesty 1988; Reno 1988; Schenian 1987, 1988a; Wallace 1981).

Besides the selling of timber rights and lumbering by those who had bought them, the increase in lumbering meant that many individual owners also stepped-up their efforts to cut and sell their own lumber, usually to the larger companies that had moved into the area. This practice was especially prevalent before railroads were established, with locals cutting the trees and floating them down the creeks and rivers. Lumbering, along with milling, was largely seasonal, dependant not only on river water levels but on rhythms of farming. Ultimately, this system was too irregular and slow to sustain the investments of large capitalists. Once railroads were available, the companies more frequently took control of the logging operations, which led to a tremendous increase in the pace of lumber extraction (Eller 1982) and the establishment of more sawmills and lumber camps or towns. After steady growth through the late 1870s and 1880s, the logging industry witnessed a big boom from the mid-1880s to 1910, much of this company controlled. These developments drew many persons into wage labor and increased the amount of cash available to local residents. The number of persons engaged in "forest industries" in the state rose from 2,497 in 1870 to 8,257 in 1890, when there were at least 595 sawmills, lumber yards, or other forest-related establishments (U.S. Census 1892). Wages at this time were reported by the Census Bureau as averaging 35 dollars a month at a planning mill, 31 dollars a month at other mills, and 35 dollars a month in transporting lumber. This compares with an average wage for Kentucky coal miners of 28 dollars a month at this time (U.S. Census 1892).

Coal Mining

While timber was an important element in the economic development and industrialization of the United States, coal was even more crucial. The mining of coal in the United States has generally been a regional operation, in which several companies in one area share infrastructure facilities (like railroads), form regionally-based associations, and generally act together as one concern regarding prices and disputes with labor or transportation. Also, the nature of coal deposits is such that some variations existed from one coalfield to another. Initially in Kentucky, most of the timber operations were not connected to coal interests. However, at the same time that timber was being harvested in the Appalachian Mountains Cultural Landscape, coal lands were being surveyed. Often in Kentucky, one large company would control several mines in a region.

Coal deposits in Kentucky continued to be mined for local and regional use during the early part of the Postbellum subperiod. In the mid-1860s, mines in the Western Coalfield Section of the Pennyrile Cultural Landscape produced over 100,000 tons, while those in the Appalachian Mountains Cultural Landscape produced less than 50,000 tons (Currens and Smith 1977). At the same time that out-of-state capitalists began to harvest Kentucky timber, the attention of many investors began to focus on the coal deposits in the Appalachian Mountains Cultural Landscape. Although there had been some interest and promotion of this resource earlier in the century, it was not until the mid-1880s that investors began to purchase large tracts of coal lands in the Appalachian Mountains Cultural Landscape. This occurred after railroads had established routes into the region and several years after the coalfields of West Virginia and the Pennyrile Cultural Landscape had been opened.

Small locally owned mines, often called wagon mines, were important in the Western Coalfield Section of the Pennyrile Cultural Landscape. In 1886, there were 43 mines in the Western Coalfield Section and 32 mines in the Appalachian Mountains Cultural Landscape. Small mines existed well into the twentieth century, especially in the Western Coalfield Section.

It was not until 1889 that the tonnage of coal mined in the Appalachian Mountains Cultural Landscape surpassed that of the Western Coalfield Section of the Pennyrile Cultural Landscape. The two Coalfields fluctuated back and forth, on a yearly basis, for the leadership in tonnage until 1913, when mines in the Appalachian Mountains Cultural Landscape took a solid lead. By 1913, mining operations in the Western Coalfield Section were producing over 8.5 million tons, while those in the Appalachian Mountains Cultural Landscape were producing nearly 11 million tons.

The focus of the coal industry in Kentucky was almost exclusively extraction for export, largely by northern firms. Eller (1982:202), in a survey of 140 coal operators from 1880 to 1930, found that only 22 percent were from the Appalachian Mountains Cultural Landscape. The coal from this cultural landscape was well-suited to home use and as an industrial power source. A large percentage of the Pennryile Cultural Landscape coal also was used for home and commercial fuel. In 1899, only .7 percent of the coal mined in Kentucky was manufactured into coke; nine percent was used for local trade, and 88 percent was exported (U.S. Census 1892). Some authors have suggested that Kentucky coal was primarily marketed to the South, although other studies suggest that the importance of Midwestern markets, especially for western Kentucky coal, have been underestimated (Burroughs 1924). Eastern and Northeastern markets were less important because of competition from West Virginia and Pennsylvania coal. No matter the destination, exportation, along with a lack of local governmental control and low levels of taxation of the mining companies, meant that much of the wealth was transported out of the state. The principal beneficiaries, other than the coal companies, were transportation companies, primarily rail lines (Thomas 1971).

Coal was usually purchased in the form of mineral rights, so that the buyers did not have to pay property taxes, although some larger companies also bought large tracts of land outright. This was especially the case with the so-called “captive” mines, owned and operated by large companies that mined the coal partly for their steel mills or other industrial facilities and intended to set up company towns. These purchases, along with

timber purchases, occasioned the need for many surveys, especially since land titles in the Appalachian Mountains Cultural Landscape were sometimes unclear. Most of the early coal land was sold in the late-nineteenth century for .50 to $1.00 an acre, although the price did rise to near $5.00 an acre in some areas by the 1920s (Caudill 1963).

By 1892, more than 60 percent of Harlan, Leslie, Letcher, and Rowan counties, and 80 percent of Bell County had been purchased by coal interests (Eller 1982). By 1906, Consolidated Coal had purchased more than 100,000 acres in Knott, Letcher, and Pike counties, and a few years later, several Pennsylvania firms purchased 175,000 acres in Knott, Letcher, and Magoffin counties (Whisnant 1983). By 1907, John C. C. Mayo, the largest local buyer, held rights to over 700,000 acres (Eller 1982). Caudill (1963) has estimated that by 1910, 75 percent of the remaining timber and at least 85 percent of all minerals in the Appalachian Mountains Cultural Landscape were owned by out-of-state companies.

Coal and Timber Towns

The number of people needed to survey the land, record titles, and begin the physical work of getting out the timber and coal resulted in the growth of some small towns, hamlets, and county seats. The number of hotels, restaurants, and boarding houses increased in many of these communities. As these activities drew many local persons into wage labor, the number of retail establishments also grew. The number of banks increased, largely to serve the needs of the lumber buyers, coal companies, and the growing numbers of local wage earners. In 1889, there were slightly over 5,000 persons working in Kentucky's coal mines. Average wages per day varied from $0.70 for boys under 16 years of age working underground to $1.56 for laborers to $1.75 for miners to $2.44 for foremen or overseers (U.S. Census 1892). Caudill (1963:111) has suggested that a miner's wages largely were spent on "household furnishings, clothing, food, and a few personal effects."

The most obvious change during the Postbellum subperiod was the creation of "timber towns" (Eller 1982:122-3) and coal mining communities. Some existing communities, if they were close to coal reserves or important rail junctions, grew rapidly during this subperiod. The most dramatic example is probably the small town of Cumberland Gap. In the late 1880s, due to the infusion of English capital and the arrival of a Louisville and Nashville branch line, Cumberland Gap grew in several years from a small center of about 60 families and one store into the town of Middlesboro, complete with half a dozen churches, a public library, an opera house, a golf course, and a hotel. Unfortunately, a fire in 1890 and the Depression of 1893, which ruined many English banks, turned the boom into a bust by October 1893. By 1900, its population, which some investors claimed had reached 17,000 (Share 1982), had declined to just over 4,000 persons.

Much of the state's best timber and coal was located in the Appalachian Mountains and Pennyrile cultural landscapes in areas without nucleated settlements, which necessitated the construction of entire communities. There is less known about the timber settlements than the coal towns. Eller (1982) has suggested that the former were similar to the latter, although they were generally smaller and had less substantial

structures. They also may have been organized in a more haphazard manner. Their occupation was probably shorter than that of the coal towns. Although the following discussion focuses on coal towns, many of the issues discussed are also relevant to those studying timber towns.

The labor-intensive nature of coal mining at this time, coupled with the poorly developed transportation networks of the Appalachian Mountains Cultural Landscape and the Western Coalfield Section of the Pennyrile Cultural Landscape, meant that on-site housing at the mine was as crucial as the tipple or other industrial components. Although coal company towns had existed in the Antebellum subperiod, an example from the Appalachian Mountains Cultural Landscape being Peach Orchard, founded in the mid-1840s (see previous section) (Tapp and Klotter 1977), it was not until the coal boom of the late-nineteenth and early-twentieth century that most company mines and towns were founded in this cultural landscape. Eller (1982) has estimated that over 600 coal towns were founded in the Appalachian Mountains Cultural Landscape during this and the next subperiod and that they out-numbered noncoal communities by at least five to one. Many towns that had existed previously, perhaps as a county seat or regional trade center, grew because of mining, then diminished in size once a mine was shut down or moved.

The creation of small coal towns in the Western Coalfield Section of the Pennyrile Cultural Landscape and the Appalachian Mountains Cultural Landscape greatly affected traditional settlement patterns and generally intensified the settlement of the areas where mining was undertaken. Thus, areas that once had been sparsely populated became regional centers, although their population often was dispersed in many small towns and hamlets. Pickard (1969) found that mining towns in the Western Coalfield Section were spaced 2 to 4 miles apart, while nonmining towns were usually 8 to 10 miles apart. The advent of large-scale commercial mining caused many small hamlets and nearby towns to expand.

Other communities were not strictly coal towns but provided services to coal towns and coal companies. Examples of these kinds of support towns in the Appalachian Mountains Cultural Landscape include Neon, Blackey, Hellier, and Jeff (Caudill 1963). Caudill (1963) has noted that houses in these towns, as well in rural areas, often copied the architecture of the coal camps and thus may resemble them. In the Western Coalfield Section of the Pennyrile Cultural Landscape, towns such as Central City, Madisonville, and Morganfield increased in population from 122 to 149 percent between 1890 and 1910 (Martin 1988).

Many coal towns were constructed in less than a year. Sometimes local timber was used without adequate drying, resulting in houses that quickly bowed and sagged. Because the coal companies needed railroads to transport the coal to market, many waited to bring in building materials for the town until rail lines were completed. Generally the earliest towns and those built by the largest and better capitalized companies provided the best housing. Large coal towns include Lynch, Jenkins, Hemphill, Fleming, Benham, and Wheelwright (Caudill 1963; Eller 1982). Because these towns were seen as model communities by their builders, large companies like U.S. Coal and Coke, a subsidiary of U.S. Steel, or the Wisconsin Steel Company, a subsidiary of International Harvester, efforts were sometimes made to document their sequences of construction. For Lynch and Benham, this resulted in over 4,000 photographs being taken of these communities

(curated at Southeast Community College, Cumberland, Kentucky). Tent camps also were not uncommon in the early stages of mining. The coal boom continued into the early-twentieth century, but many small companies could not afford to build housing comparable to that built by the larger companies.

Many authors have commented on the variation that existed between coal company towns, although most also have stressed the "monotonous sameness" that each exhibited. The essential components of a coal town included a railroad line, mine entrance, tipple, gob piles, dump areas, sorting sheds, mine office, small frame houses for the miners, larger frame houses for the mine managers and other officials, at least one store, and a blacksmith shop. Other components that were sometimes, but not always, present included a bank, service shops for the railroad, a doctor's office, a boarding house or hotel for the visiting company officials, wash houses, and in the large towns, a community building or theater, and a school or church. Since the towns were dominated by the coal company, community functions that were often present in the smallest nonmining hamlets were sometimes absent in mining communities of the same size. For example, Corbin (1985) has noted that mining towns with sizable African-American populations often did not have a church for these residents. One definitive feature of mining towns was the lack of a municipal government, city council, and a low number of retail outlets per capita (Pickard 1969).

The company store, a well-known component of the coal town, varied considerably in its operation. It could be built and operated solely by the company, built by the company and leased to an independent operator who paid rent and royalties to the company, or built by an independent operator given sanction by the company. Sometimes, independent stores were built just outside the limits of the company's property, perhaps offering some competition to the company store. A survey of several company and independent stores in West Virginia in the 1910s suggested that they did not usually charge higher than average prices for their goods. However, lack of access to other stores and company policies of issuing script or extending credit through most of the month, and paying cash wages only once or sometimes twice a month, gave many miners few options other than to patronize the company store (Hinrichs 1923). Although a 1898 law made it illegal for companies to force miners to use a company store, the passage of this law suggests that this practice had occurred (Jillson 1922). As noted previously, these stores resulted in less commercial development, or a lower ratio of retail outlets per capita in mining towns, since they drained capital away from local areas.

Laing's (1985) study of period documentary and oral historical records suggests that there may have been some variation by ethnic group in money going back to the stores versus into savings or sent to relatives. From a study of miners in West Virginia, he estimated that the greatest percentage of wages going back to the company store was 72 percent for African-American miners, compared to 51 percent for native-born Euro-Americans and 33 percent for foreign-born Euro-Americans. Boyd's (1992, 1993, 1994) study of company towns in southern West Virginia (similar to eastern Kentucky coal towns) showed that higher prices and lower wages characterized these towns, compared to noncompany towns.

The size of mining towns varied, but usually it was related to the size of the mining operation. Typical mine towns of this subperiod ranged from 700 to 1,400

persons, although some towns built by the largest companies had populations of over 10,000 persons. The towns were usually composed of miners and their families. Although more single men, or married men without their families, were employed in the initial stages of town development, such as for railroad construction or building the houses, coal companies generally preferred miners who were married and had families, because they were less likely to move (Thomas 1971). The populations of the towns and mining regions fluctuated tremendously, depending on the price of coal, access to transportation, and the physical condition of the mines at any given time (Clark 1960). This often lead to the frequent abandonment and reoccupation of sites.

The houses in the coal company towns were almost exclusively of frame construction. They usually had one story and four or five rooms. Duplexes were common in some towns. Although there was considerable diversity between towns, several or sometimes only one floor plan dominated a given company town. The cheapest houses often were constructed of vertical planks with thin strips of wood to cover the cracks between the planks. Insulation in these structures was very poor. Almost all were heated by coal, first in fireplaces and later in stoves, and coal sheds or piles were usually located in the yards. Most houses had small yards for gardens or a few animals, although yard space may have been restricted if the mining population was large in relation to the size of the valley floor. Barns were conspicuously absent compared to other rural residences (Pickard 1969). Most houses did not have indoor plumbing but rather wells, cisterns, and privies. Some large companies installed water hydrants that were shared by the residents of the town.

Since electricity was needed to operate most mines, coal company houses often did have electricity (and electric appliances) before non-mining houses. In this regard, company houses were superior to most houses in non-coal towns or on farms, which was sometimes important in recruiting miners. Many houses in the better company towns also were superior to some non-mine houses in other regards, especially when the nonmine houses were of the plank or "Kentucky box" style (Burroughs 1924; Caudill 1963;Eller 1982).

Rents were generally low and considered by the company as a necessary subsidy to attract labor to the mine (Hinrichs 1923). Rent was an important source of steady income for the coal companies, especially needed when coal prices were low or when strikes or other disputes held up production. Company housing also provided the coal company with an additional sphere of control over the miners. The extent to which miners used company housing versus private housing during this subperiod has yet to be fully examined. Studies that have compared mines in West Virginia and Pennsylvania have found a much higher incidence of living at the mine in West Virginia (79 percent), compared to Pennsylvania (51 percent) (Kirby 1987:87). Kirby (1987:87) has described miners as America's last self-sufficient folk to become "footloose and dependent."

The life expectancy of a coal mine operation gradually decreased over time, partly in response to the increasing scale and technical efficiency of mining. For example, the average duration of a mine started in 1900 was 30 to 40 years, compared to an average of 25 years for one started in 1940 (Pickard 1969:130). Mining towns usually did not outlive the mines themselves, although a strong relationship with or service provided to another community or rural region might enable a mining town to readjust.

Alternatively, a large company might dismantle and reuse the materials from its mining town, or the buildings might be abandoned, with some materials salvaged and reused privately.

Most company towns were located on a rail line near the mine itself. A certain amount of flat land was needed to construct the railroad, industrial components of the mine, and the houses, so terraces and floodplains were common locations for company towns, especially in the Appalachian Mountains Cultural Landscape. The closeness of the housing to the mining operation was often unescapable because of a limited amount of flat land, although this standard arrangement also provided improved supervision and control of miners, less time lost in commuting, assurance of customers for the company store, and assurance of rent from company houses. This feature is integral to all mining communities, not just those in Kentucky, before the spread of the automobile.

In a survey of mining towns in Hopkins and Muhlenberg counties in the Western Coalfield Section of the Pennyrile Cultural Landscape, four general types of intrasite settlement patterns were observed. These were 1) orderly (31 percent), laid out in regular blocks in a grid-like fashion; 2) natural (17 percent), having blocks but following topography; 3) road oriented (51.5 percent), being arranged in a linear fashion along roads (and tracks) rather than in blocks; and 4) fragmented (5 percent), with residential structures located in different areas of town (Pickard 1969). The residential areas usually were located further "down the railroad" from the mine itself, which was usually further up the valley (Pickard 1969:124). Reno (1988), in a study of mining camps in Nevada, found when mining camps and towns were initially set up, they were characterized by a random spatial distribution of structures, but that they became increasingly orderly as all elements of the mine were completed.

As mentioned previously, sometimes a preexisting town was used by a coal company, if it was located near a coal source. This resulted in what Pickard (1969) has called the appended settlement form. These towns, which were more common than newly constructed company towns in Muhlenberg and Hopkins counties, usually had new sections in which the company built a series of houses. Company houses that were built in pre-existing towns are often recognizable because they were built following the same plan and laid out in a more regular pattern than the older residential areas, which had grown more slowly and with less planning. The company also frequently would build its own company store near the company housing. It is generally thought that the mine superintendents or managers, owners (when present), and other mine officials lived in separate areas, often higher up the slopes and away from the railroad and the mine itself. Their houses were thought to be larger and more lavishly appointed than those of most miners.

Several studies have noted that the edges of mining towns often contained the houses, sometimes company built, sometime privately built, of persons only partially articulated with the mine. This group included widows and orphans of miners killed in accidents, miners who had been injured to the extent that they could no longer work in the mines and their families, and retired miners and their families. In general, these people tended to be poorer than the families of active miners (Burroughs 1924; Caudill 1963). Over time, increasing numbers of coal company officials chose not to reside permanently in the coal towns, but to live in nearby urban centers (such as Lexington)

and visit the mines as necessary (Caudill 1963; Eller 1982; Thomas 1971). This trend would reduce the socio-economic variation observed within a coal town and perhaps lead to increased neglect of residential structures.

Many southern African Americans and European immigrants came to live and work in the mining towns of Kentucky, especially those in the Appalachian Mountains Cultural Landscape. This situation is in direct contrast to the rest of the state, where the percentage of the population that was either African American or foreign-born Euro-American decreased over the last quarter of the nineteenth century. While local farmers were drawn to work in the mines, the amount of labor needed to extract the coal far exceeded that of the local population, many of whom did not unanimously embrace mine work.

Mine managers and specialists were not infrequently from Europe, often England or Wales, where they had previous experience in mining. Some accounts stress that mine managers and owners often complained about the unreliability of the local population, many of whom treated mining as a part-time occupation and second to the needs of their farms.

Some mine companies had a policy of mixing different ethnic groups, on the theory that a "judicious mixture" would divide the laboring population and hinder Union organization (Lewis 1987). In the Western Coalfield Section of the Pennyrile Cultural Landscape, part-time local miners were an important labor source. Therefore, large numbers of African Americans were not brought into this region until the strike of 1870 (Pickard 1969). Large numbers of African Americans were not brought into the mines located in the Appalachian Mountains Cultural Landscape until about twenty years later, when many came initially to work on the railroads and stayed to work in the mines. The percentage of miners in Kentucky that were African American was 19.2 percent in 1890, 23.7 percent in 1900, 21.3 percent in 1910, 16.7 percent in 1920, 13.3 percent in 1930, and 10.0 percent in 1940 (Northrup 1985).

Foreign-born immigrants came largely from Europe, especially Germany, Italy, and Eastern Europe. Many of these immigrants were recruited in Europe and given transportation directly from a port city, such as New York, to the mine camps. Most spoke little or no English (Caudill 1963; Eller 1982; Thomas 1971).

Historical studies have suggested that coal towns contained ethnically separate residential areas (Caudill 1963; Corbin 1985), while others have stressed high levels of integration of different ethnic groups (Lewis 1987). Caudill (1963:105) has suggested that many companies provided schools only for Euro-American children. Thomas (1971) has suggested that there was a hierarchy of jobs and wages, with foreign immigrants at the bottom. However, Italians are known to have been employed in housing and mine construction because of their building skills, and Germans seem to have risen to safer and better-paying jobs more quickly than Eastern Europeans, perhaps partly because of their greater fluency in English (Thomas 1971). Lewis (1987) has noted that while African Americans usually were not excluded from any specializations within mining except that of supervisors, more African Americans seemed to have preferred to work underground, where they had greater autonomy and where they were freer to work longer hours and thereby increase their wages (see also Laing 1985).

INDUSTRIAL AND COMMERCIAL CONSOLIDATION: 1915-1945

The period from the beginning of World War I to the end of World War II was marked by a continuation of many trends that had been initiated in the Postbellum subperiod. The following narrative highlights some of these trends. They include mechanization of agriculture and the general decline in farming as a way of living; continued urbanization and an increase in tenement and apartment buildings; major improvements in roads and a decline in river traffic; increases in stores and access to consumer goods; and the continued extraction of natural resources such as timber and coal resources. During this subperiod, wage labor became more common, due partly to the mass production and the economic expansion associated with the World Wars and the fact that more women had entered the work force.

Demographic and Settlement Trends

The state's total population increased during this subperiod, but at a slower rate than the rest of the Southeast. For example, the population of Kentucky increased by 5.5 percent during the 1910s, while the population of the entire Southeast increased by 10 percent. Kentucky's population increased by 8.2 percent during the 1920s, which was still less than the 11.8 percent increase in population recorded for the entire Southeast (Odum 1936:466). Kentucky's slow rate of growth was not due to a lower birth rate than that of other areas. In 1930, the birth rate of rural Euro-Americans in the state was 24.2 births per 1,000 persons, compared to 18.7 for the rural population nationwide. The birth rate for urban Euro-Americans in Kentucky was 20.3, which was very close to the national rate of 19.1. However, birth rates for the small African-American population in Kentucky were low (14.3 for urban African Americans and 15.4 for rural African Americans) (Odum 1936:470). This low birth rate was probably a result of infertility and family limitation (McFalls and Masnick 1981; Wright and Pirie 1984). The low birth rate of African Americans, coupled with out-migration, led to a decrease in the number of African Americans living in the state during this subperiod and slowed the growth of the state's population.

The rural population grew more slowly than the urban population after World War I, as increasing numbers of people left the farm and moved to towns and cities. Population increased only 2.8 percent from 1910 to 1920 in the rural sector, while it increased by 14.1 percent in the urban sector for the same time period. Similarly, population increased by 1.8 percent from 1920 to 1930 in the rural areas, compared to a tremendous increase of 26.1 percent in the urban sector. These trends reversed in the 1930s, partly because of the return of persons who had left rural areas to work in urban jobs and had been laid off. Rural population increased during the 1930s by 10 percent, compared to a slower growth rate for the urban population of 6.3 percent (U.S. Census 1943).

Besides immigrating to cities and towns within the state, many rural Kentuckians left the state during this subperiod to work in other industries, like the automotive

factories in Michigan and Ohio, where they often settled together, creating "little Kentuckies" (Kirby 1987). The combined rates of out-migration from Kentucky and West Virginia during this subperiod were 6 percent of the total population during the 1910s, 7 percent during the 1920s, 4 percent during the 1930s, 11 percent during the 1940s, and 15 percent during the 1950s (Kirby 1987:319).

Because of increased urbanization and improvements in transportation, suburban neighborhoods continued to expand around cities and towns. In the Postbellum subperiod, urban growth was generally accompanied by annexation and expansion of city boundaries and service areas. By the 1930s, many municipal systems could not expand fast enough to provide services to the new residential areas, and small independently-incorporated suburban communities near the boundaries of cities became common. In some cases, this caused the largest centers, like Lexington and Louisville, to decline in size or experience only slow growth, while the surrounding suburban population grew at a faster pace (Share 1982). It is likely that this fragmentation increased the variation in land values, zoning, building codes, and access to basic sanitary and other public services within communities or between cities and their suburbs.

The trend established in the preceding subperiod of large houses being converted to multi-family dwellings continued during this subperiod. New apartment buildings also were built, especially in urban environments. Thus by 1940, 25 percent of urban residences housed multiple families. Not surprisingly, this trend was not as pronounced outside the urban environment. Only 10 percent of rural nonfarm residences and 2 percent of rural farm residences were multi-family dwellings (calculated from U.S. Census 1943). Most of these multi-family dwellings were rented, and the general proportions of residential structures that were rented increased during this subperiod.

From 1930 to 1940, owner-occupied dwellings decreased from 44 percent to 38 percent in the urban setting, from 43 percent to 41 percent in the rural non-farm setting, and from 62 percent to 61 percent in the rural farm setting. The lowest incidence of owner occupancy was among the population of urban African Americans in the large industrial cities. Only 19 percent of dwellings occupied by African Americans in Covington and 18 percent in Louisville were owner occupied (U.S. Census 1943). Increasing home ownership was an important goal of the Federal government during this subperiod, and the Federal Housing Authority (FHA), created in 1934, had a major impact. This assistance, plus new types of inexpensive housing, also aided in home ownership. African Americans, however, continued to be excluded from this trend (Jackson 1985:132).

Despite problems of crowding, lack of municipal standardization, and substandard housing in some urban areas, cities continued to lead in providing basic services. For example, there were over 700 miles of electric lines in Louisville, serving over 64,000 electric meters, by 1925 (Burroughs 1927). At that time there were about 50,000 households living in Louisville. That there were 14,000 more meters than households, suggests that by the mid-1920s most houses and businesses had access to electricity. In contrast, only 2.2 percent of farms in 1920 and 4.3 percent of farms in 1930 had electricity. Indoor plumbing was present in less than 5 percent of rural Kentucky houses in 1939 (Schacter 1949), compared to 80 percent of the houses in Lexington (WPA 1939).

During this subperiod, many cities increased their efforts to provide modern sewage and sanitation systems to as many residents as possible. Lexington installed an up-to-date sanitation system in 1917 (Bell and Watkins 1954) and by the mid-1920s, Louisville had completed water mains to all parts of the city and was extending its sewer system (Burroughs 1927). However, many smaller towns and cities in Kentucky did not modernize sanitation facilities until after World War II (Schacter 1949).

While the total population of the state gradually increased during this subperiod, the African-American population declined from 235,938 in 1920 to 214,031 in 1940. In 1920, African Americans made up 9.8 percent of Kentucky's population. However, they accounted for a much lower percentage of the population of many counties. This is a reduction of more than 6 percent from 1870, when African Americans accounted for 16 percent of the population. The heaviest concentrations of African-American occupation during the Industrial and Commercial Consolidation subperiod were in those areas most heavily involved in commercial production of tobacco. Thus, in 1920, African Americans constituted over one-quarter of the population of Fayette, Bourbon, and Woodford counties in the Bluegrass Cultural Landscape and Christian and Todd counties in the Pennyrile Cultural Landscape was African American (U.S. Census 1923). Seventeen percent of the African-American population of the state lived in Louisville (U.S. Census 1923, 1943).

During the 1930s, much of the African-American mining population left the state, so that by 1940, African Americans made up only 7.4 percent of Kentucky's population. Although the African-American population declined during this subperiod, the trend of increased segregation by ethnicity, discussed in more detail in the preceding subperiod, continued and even increased during this subperiod. This increase in segregation is partially attributable to the flight of upper and middle class Euro-Americans from the city centers to suburban neighborhoods. The foreign-born population living in Kentucky also decreased during this subperiod, from slightly over 40,000 in 1910 to 15,631 in 1940, when foreign-born persons accounted for only 0.5 percent of the state's population (U.S. Census 1943). As discussed in detail in the previous subperiod, efforts to encourage immigration to Kentucky largely had failed. Some larger coal companies did continue to bring foreign-born immigrants into their mining towns after World War I, but not in significant numbers. Most of these persons left the coal mines before, if not during, the Depression. There was a decline in the flow of immigrants into most parts of the country after the outbreak of World War I. A 1921 Immigration Law passed by Congress further reduced their numbers (Caudill 1963). This decrease in immigration not only affected the rate of immigrants to Kentucky but also meant that northern industries now recruited more heavily in the South, stimulating the emigration of native-born Kentuckians.

Developments in Agriculture

In the late 1910s, markets for agricultural products were readily available because of World War I and the food shortages in Europe. As a result, Kentucky agriculture continued to commercialize whenever possible. Studies made by the Kentucky Geological Survey in the early to mid-1920s (Burroughs 1924, 1926; Davis 1923, 1927; Sauer 1927) suggest that the peak efficiency of farming in most of the cultural landscapes

had been reached sometime around the turn of the twentieth century, and that by the 1920s, many farmers were feeling the effects of worn-out land. In some of the less fertile regions, such as the Eden Shale Region of the Outer Bluegrass Section of the Bluegrass Cultural Landscape, much of the Appalachian Mountains Cultural Landscape, and sections of the Pennyrile and Jackson Purchase cultural landscapes, agricultural production had pushed into marginal lands. These lands contained poor agricultural soils that produced low yields. By the mid-1920s, many of these fields had been abandoned and were marked by the secondary-growth of sassafras, persimmon, and other small shrubs (Davis 1927).

While less fertile land was being farmed for the first time in many areas, higher-quality agricultural lands also were being created by draining swamps and low-lying areas. This was especially the case in the Jackson Purchase Cultural Landscape and in Jefferson County in the Bluegrass Cultural Landscape (Burroughs 1926; Davis 1923). For instance, a levee built in Fulton County in 1908 greatly increased agricultural productivity along the Mississippi River. Average farm size for the entire state declined from 85.6 acres in 1910 to 70.8 acres in 1923 and was even smaller by 1940 (Clark 1960). An extensive survey of agriculture in the early 1930s classified farms according to specialization, e.g., cotton, tobacco, diary, or self-subsistence. Almost 29 percent of the farms in Kentucky were classified as self-subsistence, 26.6 percent were classified as tobacco farms, and 19.1 percent were classified as general farms or farms with some commercial orientation (Odum 1936:170).

Cultivation, generally without adequate rotation, led to decreased crop yields in many areas. As a result, a great deal of variation developed, both within and between cultural landscapes, in terms of the percentage of land in cultivation, the types of crops grown, yields per acre, and the economic well-being of farmers. Sauer (1927) noted that this variation had developed over time due to the inherent limits of some soils. A reliance on corn continued to mark the less commercially oriented farms, and tobacco (cotton in the Jackson Purchase Cultural Landscape) was raised by the more commercially oriented farms. Contrasts of wealth were most marked within the more commercially oriented regions; for example, between large landowners and tenant farmers, especially where tobacco or cotton dominated.

Generally, the largest percentage of improved land was in the Bluegrass Cultural Landscape, followed by the Jackson Purchase Cultural Landscape, and the Plains and Western Coalfield sections of the Pennyrile Cultural Landscape. In these landscapes, at least one-half of the land was improved in the mid-1920s, and in the Bluegrass Cultural landscape, over three-quarters of the land was improved. These areas contrast with the Appalachian Mountains Cultural Landscape, where between one-quarter and one-third of the land was improved (Sauer 1927:145).

Farm variation within the Bluegrass Cultural Landscape consisted of alternating rings of greater prosperity and more commercially oriented agriculture, with the Inner Bluegrass Section being the most commercial and the Eden Shale Belt region of the Outer Bluegrass Section being less commercial. Farms in Jefferson and Oldham counties that supplied Louisville with food also continued to have a higher level of commercial production of vegetables, fruit, and dairy products (Davis 1923). Some farms were more specialized in livestock production, such as the beef cattle farms in Bourbon, Clark and

Madison counties or the horse farms in Fayette. These farms often can be distinguished by larger and more numerous barns or sheds, although Davis (1927) noted that in the mid-1920s, agricultural outbuildings were relatively rare in Kentucky compared to farms in the North.

The Jackson Purchase Cultural Landscape was especially marked by strong contrasts, often within short distances, due to a more than average variation in soil types (Davis 1923). Thus research in this cultural landscape has the potential to produce information on the relationship between soil types and farm production (see Raitz and O'Malley 1985 on this issue in the Bluegrass Cultural Landscape). A distinctive physiographic region of the Jackson Purchase Cultural Landscape is what Davis (1923:69) called the Big Bottoms of the Ohio and Mississippi rivers, which "stood out distinctly as an area of different opportunity and distinctive response." African Americans especially were concentrated in the Big Bottoms, frequently on tenant farms that specialized in cotton. Beginning in the Postbellum subperiod and continuing into this subperiod, cotton production in Kentucky became increasingly concentrated in the Mississippi River counties of the Jackson Purchase Cultural Landscape. Cotton had been grown in 37 Kentucky counties in 1880. In 1909, Fulton County produced 97.7 percent of the state's cotton (Davis 1923). A special report of the Census Bureau identified 669 farms in Fulton County, 583 in Hickman County, 478 in Calloway County, 197 in Marshall County, 150 in Graves County, 100 in Carlisle County, two in McCracken County, and one in Ballard County that were growing cotton in 1940. Of these, only Fulton County had a large number of farms that produced over five bales of cotton, suggesting a higher degree of specialization in cotton for farms in this county than in the other counties in Kentucky.

In contrast to the productive soil of the bottoms, which supported a very commercialized agricultural system, less than 30 percent of the acreage of a given farm was worth cultivating in eastern Marshall and Calloway counties. Davis (1923) noted that this area was the poorest, most isolated, and most sparsely populated of the region.

Both Sauer (1927) and Martin (1988) have noted that it is difficult to characterize the Pennyrile Cultural Landscape, since it contains so much variation. The Eastern Section of this cultural landscape is characterized by less commercial agriculture and poor transportation, while high levels of tobacco production and tenancy characterized the Plains Section (Martin 1988; Sauer 1927). In the Western Coalfield Section, mining and lumbering increased the commercial potential of agriculture but also contributed to over-production and poor land management.

Conditions in the Western Coalfield Section were further aggravated by the return of migrants during the Depression. Some of those who returned may have hoped to work in the mines, but the mines were not hiring and most were forced to become sharecroppers or to farm with relatives. Returning immigrants, as well as those laid-off by the local mining and timber industries, often attempted to cultivate worn-out and marginal soils. This situation, coupled with the already poor state of agriculture at the time, created conditions of extreme poverty and malnutrition (Caudill 1963).

Some areas of the Western Coalfield Section, such as along the Ohio River in Henderson and Union counties, contained very fertile soils that were used to grow

commercial crops like wheat or to raise hogs for market (Burroughs 1924). Farms in these areas were much larger than farms that specialized in tobacco or cotton, and they represent a different type of commercial agriculture. For example, these farms probably participated in mechanization before farms in other areas of the state.

Tobacco

Blended cigarettes were introduced just before World War I and gained tremendous popularity, both at home and abroad, during the war (Axton 1975). As a result, tobacco prices were very high from 1915 until 1919, which encouraged more farmers to plant tobacco, especially white burley. Sauer (1927) noted that during this subperiod, crop choice had less to do with topography and soil type than market access, especially with respect to tobacco. In 1919, when the price of white burley was 34 cents a pound (an increase of more than 21 cents from 1916), tobacco accounted for almost one-third of the state's total crop income (Axton 1975:101).

The high prices meant that small tobacco plots still would return profits, which did little to discourage the subdivision of farms. Subdivision was held in check somewhat in the Inner Bluegrass Section of the Bluegrass Cultural Landscape because of the efforts of wealthy farmers to keep large estates intact. This occurred despite the fact that land prices rose by 269 percent in the Inner Bluegrass Section from 1915 to 1919 (Davis 1927:63). Property values rose in most tobacco producing areas at a similar rate. Some properties increased in value, not because they contained good farm land, but because they had good access to roads and tobacco markets (Davis 1923). High prices increased the value of tobacco lands to the point where many persons could not afford to own the property they farmed. Given the high prices paid for tobacco, renters as well as owners made money on tobacco during this subperiod.

The tobacco boom of the 1910s ended in 1920 due to bad weather and over-production. As a result, many farms failed. In 1921, the Burley Association was formed to try to stabilize tobacco production and by 1926, the market again improved (Axton 1975). However, the Depression of 1929 brought traumatic declines in prices for leaf tobacco. The Depression not only hurt tobacco farmers but all farmers who were commercially oriented. For example, farm income in the Pennyrile Cultural Landscape dropped to one-third of its 1929 level by 1932 (Martin 1988). The commercialization of agriculture during this and the preceding subperiod also took its toll during the Depression. A survey by Lewis Gray (1933) in the early 1930s reported that three-fifths of the population in the Appalachian Mountains Cultural Landscape was employed off the farm. A federal survey in the 1930s by the Farm Security Administration revealed that over one-half of Kentucky counties relied heavily on imported foods at a time when cash was very scarce (Clark 1960).

New Deal Policies and Increasing Wage Labor

New Deal policies of the 1930s, such as the Agricultural Adjustment Act, brought some relief but also introduced important changes. This act, often called the "AAA," was the first Federal regulation or allotment for tobacco, cotton, and other produce, including hogs, which were still very important to Kentucky agriculture (Clark 1960). The AAA

provided payments to farmers for taking acreage out of cultivation or reducing stock, thereby attempting to ease pressures on land and increase prices. It also had the effect of creating large-scale evictions of tenant farmers, most of whom did not share in the distribution of subsidies. According to Kirby (1987), there is some evidence that evictions were not as common in tobacco areas, since tobacco was more labor intensive than cotton, and landholdings were generally much smaller. "Therefore tobacco farmers and planters were much more inclined to share subsidies to keep reliable tenants" (Kirby 1987:65). The first tobacco allotments were in 1934 and were small, usually ranging from .5 to 5 acres (Kirby 1987:344). Tobacco acreage in Kentucky was reduced by one-third or more by the AAA (Axton 1975).

Some progress was made in agricultural improvements in the 1930s due to these Federal programs, especially with regards to diversifying and rebuilding livestock herds. By 1940, the Depression and the poor state of the coal and timber industry and agriculture combined to make the average income in Kentucky only 59 percent of the average U.S. income. The value of goods produced by more than one-half of Kentucky farms was less than 400 dollars (Schacter 1949). Major agricultural gains were made during World War II, as farm income rose from an average of 640 dollars per family in 1940 to 1,860 dollars per family in 1946. However, the resurgence of the mining industry interrupted agricultural improvements, especially in the Appalachian Mountains Cultural Landscape, where Caudill (1963) noted that agricultural gains made in livestock production were quickly lost as many farmers returned to wage labor in the mines.

Other changes also led to a reduction in the number of persons engaged in farming in Kentucky, which declined from 70 percent of the population in 1920 to 55 percent in 1940 (Kirby 1987). One of these changes was mechanization. Agricultural mechanization was not a major force in the South until after World War II, although some mechanization took place in the late 1930s and early 1940s. Kentucky farmers were slow to participate in this trend, partly because tobacco proved particularly resistive to mechanization, partly because the terrain in some parts of the state did not lend itself to use of machines, and partly because farmers in some areas totally lacked the necessary capital. For example, in Johnson County in the Appalachian Mountains Cultural Landscape, there was not one tractor in use in 1940, and farming continued to be on a subsistence level (Kirby 1987).

Tractors were usually the first major mechanized items to be introduced on Kentucky farms. In 1920, 0.7 percent of the farms in the state had a tractor. The number of farms with tractors rose to 1.9 percent in 1925, 2.8 percent in 1930, and 4.4 percent in 1940. Farm owners were almost twice as likely to have a tractor than tenant farmers in 1920. By 1930, 3.4 percent of tenant farmers, compared to 4.8 percent of owners, had tractors. The reduction in the difference between the two groups perhaps reflects the changing nature of tenancy by the end of this subperiod (see following subsection). Farms run by managers, not an owner or a tenant, were especially likely to have a tractor. In 1930, 23.5 percent of manager-run farms had at least one tractor and by 1940, 39.5 percent of manager-run farms had at least one tractor (U.S. Census 1943).

A trend that occurred toward the end of this subperiod was that large numbers of farmers became involved in wage labor. The percentage of farmers who worked off their farm for wages or income had reached 36 percent by 1929, with an average of 99 days of

labor being spent off the farm. Although the percentage of operators working off the farms had declined to 31 percent by 1940, the average number of days of off-farm work had climbed to 134 (U.S. Census 1943). The proportion of those doing off-farm work was especially high for cash renters (55.9 percent). It also was generally higher for all tenants (36 percent) than owners (28 percent). Wage labor probably increased the volume and variety of material goods that came into rural sites, both in terms of increased cash and in terms of increased exposure to new goods in the work place.

Changes in Tenancy

As discussed above, tenancy became a very common arrangement during the Postbellum subperiod, stimulated by the lack of land owned by African Americans and by the high prices for tobacco, which drove up land values. Tenancy continued to increase during the Industrial and Commercial Consolidation subperiod, from 33 percent in 1920 to 38 percent of all farms by 1940 (U.S. Census 1943). These rates are low compared to rates of 56 percent for the Southeast in general and 72 percent for a cotton state like Mississippi in 1930 (Odum 1936:382). As before, many African Americans were tenant farmers. Thirty-two percent of Euro-American farmers in Kentucky were tenants in 1920, compared to 57.6 percent of African-American farmers. The percentage of Euro-American farmers that were tenants had risen to 35.1 percent in 1930, while the percentage of African-American farmers had declined to 51.9 percent (calculated from the U.S. Census 1923, 1933). As noted in the Postbellum subperiod, the hierarchy of farm value, as recorded in the census, was from Euro-American owners to Euro-American tenants to African-American tenants to African-American owners.

There are some indications that, by the end of this subperiod, tenancy was changing in several ways. As more farm owners became wage laborers, often on a part-time basis, there was an increased demand for tenants. However, the industrial growth that attracted farm owners to wage labor also attracted tenant farmers. This, and the high prices for tobacco, suggests that tenants often had more resources and were less dependant on landlords than they had been in earlier subperiods. For example, while the percentage of tenants that rented for cash was 10 percent and 11 percent in 1920 and 1930, respectively, it had doubled to 24 percent by 1940 (U.S. Census 1933, 1943). These cash tenants often did not live on their rented land, as most tenants had in the past, but instead rented scattered parcels of land to supplement other plots, some of which they might own (Sundquist 1953). Thus, the close relationship between a landlord and tenant, sometimes described as benevolent paternalism and sometimes more in terms of exploitative debt peonage (Ransom and Sutch 1977), was in a state of change, with farm land rented more frequently as a straight commodity.

Trends in Industry and Commerce

The manufacturing of local non-mass produced goods declined during this subperiod, largely because of the inability of local companies to compete with mass-produced goods. Improvements in transportation allowed manufacturers of mass-produced products to reach a much greater market. One important example is flour

and grist mills, which declined from 533 in the state in 1919 to only 163 by 1927, a decline of 70 percent in 8 years (U.S. Census 1933).

Clays were mined in several areas of the state for use in local brick and pipe making: the Western Coalfield Section of the Pennyrile Cultural Landscape, portions of the Knobs in the Outer Bluegrass Section of the Bluegrass Cultural Landscape, and portions of the Jackson Purchase Cultural Landscape. Because of competition from foreign clays, only those clay deposits located near a railroad could be profitably mined (Davis 1923). Some local potteries continued during this subperiod, although their numbers generally declined; the only large-scale pottery in operation by 1923 was located in Paducah (Davis 1923). Thus, local ceramics probably diminished in importance during this subperiod, as did many other local products.

In contrast to the general decline in home manufacturing, one local industry, home-distilling, increased its production. Small-scale whiskey-making had long been an established activity in rural areas. Just before Prohibition, whiskey distilling led all other industries in Kentucky in cash returns (Clark 1960). Prohibition meant the loss of from 6,000 to 8,000 jobs in Louisville alone (Wesler 1984c). Some distilleries had closed earlier as well, because of local county options on alcohol, which began in 1912. By 1919, when Prohibition was established nationally, many Kentucky counties were already dry.

Whiskey-making did not completely cease in the dry areas or in the rest of the state in 1919, and in fact, home-production increased. The response of home-producers to Prohibition can be seen in the average size of stills confiscated in the South, which increased from 3.7 gallons in 1920, to 10 gallons in 1921, to 15 gallons in 1923, to 20 gallons in 1924, and to 50 gallons in 1929. Not surprisingly, still size had declined to 14.3 gallons by 1942, nine years after the end of Prohibition (Kirby 1987:210). Home whiskey-making was especially prominent in the Appalachian Mountains Cultural Landscape (Pace and Gardner 1985), which supplied both local needs and produced small sums of cash, although whiskey frequently was traded. The mining population also created a larger-than-average market for home-made whiskey in the Appalachian Mountains Cultural Landscape and in the Western Coalfield Section of the Pennyrile Cultural Landscape. Sauer (1927) noted large numbers of stills in the less commercially oriented areas of the Pennyrile Cultural Landscape in the mid-1920s.

Caudill (1963) has suggested that the Depression, coupled with the poor state of agriculture in the Appalachian Mountains Cultural Landscape, led to a situation where some farmers depended on whiskey-making for subsistence, not just additional cash. This pressured these farmers into making larger quantities of whiskey with less corn, which caused them to rely on the addition of sugar and other methods to increase yields, especially as corn yields per acre decreased. The result was cheaper and more dangerous grades of home-made whiskey and an increase in battles to protect stills from law enforcement agents. Between 20 and 50 stills per 100,000 inhabitants were recovered by federal agents in Kentucky by 1930, with higher levels found only in Tennessee, Georgia, South Carolina, North Carolina, and Virginia (Kirby 1987; Odum 1936:568). A great deal of violence was engendered by the attempts of law enforcement personnel to stop the home production of whiskey (Channing 1977; Clark 1960).

By 1935 Prohibition had ended in Kentucky, two years after it had ended nationally, enabling commercial distilleries to resume their trade. However, the local county option continued, and by 1950, 90 out of 120 counties in Kentucky were dry (Clark 1960). Thus, markets for home-made whiskey were maintained in the dry counties. Continued poverty and a depressed agricultural economy also encouraged the continuation of home production.

Pace and Gardner (1985) have suggested that the most important factor in the location of private stills was access to roads or other transportation arteries and not seclusion, although secluded spots were preferred if they also were accessible. Seclusion may have become more important during Prohibition, when many rural farmers responded to the shutdown of the large distilleries by expanding their own operations.

Manufacturing and Industrial Production

The increased potential for farmers to engage in wage labor was made possible by industrial and commercial growth. The trend of industrial consolidation that started in the Postbellum subperiod continued during this subperiod. For example, the number of persons employed in manufacturing increased from 37,391 in 1880 to 70,718 in 1940, and the value of the goods produced increased from ca. 75 million to ca. 481 million dollars. At the same time, the number of establishments declined from 5,328 to 2,188. Consolidation was even more extreme than this decline suggests, since these 2,188 establishments were owned by only 1,371 firms (U.S. Census 1883 and 1933). The Depression contributed to this process, as many smaller companies could not survive such a disruption. Martin (1988) estimated a 50 percent reduction in the number of establishments in the Pennyrile Cultural Landscape because of the Depression.

Industrial production in the state during this subperiod continued to be concentrated in the Ohio Valley Urban Centers Cultural Landscape, especially Louisville. The Louisville Industrial Foundation was established in 1916 to promote industrial growth, which in the healthy post-World War I economy grew from 152 establishments in 1922 to 892 establishments in 1926 (Burroughs 1927; Share 1982). The major industries in Louisville during this subperiod continued to be tobacco manufacturers, slaughtering houses and meat packing plants, liquor distilleries, leather tanneries, clothing factories, foundries, and machine shops (U.S. Census Bureau 1883 and 1923). Nationwide, cigarette consumption jumped 75 percent between 1939 and 1945, largely due to World War II. As a result, the Kentucky tobacco manufacturing industry, already healthy in 1939, experienced tremendous growth.

An abundance of coal for fuel, along with access to good river and rail transportation, allowed Owensboro to become the second largest manufacturing center in the state by the mid-1920s. Its population went from 3,437 in 1870 to 17,424 in 1920, and industries located in Owensboro included tobacco processing factories, packing houses, assorted mills, machine shops, carriage industries, and related forges. Henderson also was a manufacturing center, but to a smaller degree than Owensboro (Burroughs 1924). No other towns in the state experienced industrial growth comparable to these cities. Sauer (1927) noted that other towns in the Pennyrile Cultural Landscape grew at a much slower rate at this time, which suggests that they were nearing their commercial

potential, although Hopkinsville and Bowling Green continued to prosper. Border towns, like Campbellsville, which had access to trade from the Bluegrass Cultural Landscape, also tended to experience greater prosperity than other communities during this subperiod (Sauer 1927). Towns in the Appalachian Mountains Cultural Landscape continued to lack industrial and economic diversification, largely because of the control of primary resources by outside capitalists whose main interest was extraction and not local development (Caudill 1963; Eller 1982:228; Thomas 1971).

By 1940, the 70,718 persons employed in manufacturing statewide produced over 480 million dollars worth of goods. However, 584, or about one-third of the state's manufacturing establishments, were located in Jefferson County (550 were in Louisville proper). The only other localities with over 50 establishments were Kenton County, with 80 establishments (69 of which were in Covington), and Fayette County, with 58 establishments (32 of which were in Lexington). Jefferson County's (primarily Louisville's) manufacturing facilities employed 44 percent of Kentuckians who worked in manufacturing, compared to Kenton County's 3 percent and Fayette County's 1 percent. Also, while Louisville contained nearly one-third of the manufacturing establishments and employed 44 percent of the people who worked in these establishments, it produced 63 percent of the industrial value of the state (U.S. Census 1943).

Owensboro was still an important manufacturing center in 1940, with 48 manufacturing establishments, as was Paducah with 43, Newport with 26, and Ashland with 24. The percentage of the population in manufacturing for cities with over 10,000 people (the only class of settlement for which this information is available) (U.S. Census 1943) was the following:

Ashland	11.0 percent	Lexington	0.6 percent
Bowling Green	2.0 percent	Louisville	9.2 percent
Covington	2.4 percent	Middlesboro	5.7 percent
Frankfort	10.4 percent	Newport	3.5 percent
Henderson	6.3 percent	Owensboro	8.5 percent
Hopkinsville	3.1 percent	Paducah	7.3 percent

Ashland had some manufacturing establishments; the percentage of its population involved in manufacturing was 11 percent, which was the highest percentage of any city in the state. In contrast to Ashland, only 0.6 percent of Lexington's population was involved in manufacturing, even though Lexington contained a large number of manufacturing establishments.

Another important trend during this subperiod was the increase in the participation of women in manufacturing and other industries, which involved work outside of the home. Although women had worked as wage laborers for some time, especially in nursing, teaching, domestic services, and some professional services, the manufacturing sector will be highlighted in this discussion because it is one that grew rapidly during this subperiod. This increase in wage labor by women was an important

change in the household, both in terms of bringing in additional money and in altering household routines and organization.

The percentage of the manufacturing labor force that was female rose from 9.4 percent in 1880, to 14.5 percent in 1915, to 21 percent in 1930, to 26 percent in 1940 (calculated from U.S. Census Bureau 1883, 1933, and 1943). Most of these jobs were in cities. In 1910 in those areas of the state with populations of over 10,000, women comprised 19 percent of the manufacturing labor force compared to 7.6 percent in the rest of the state (U.S. Census 1913). Women not only participated in manufacturing but also in the retail sector. Thus, by 1940, 26 percent of wholesale and retail jobs were occupied by women.

Not only did greater numbers of women work in manufacturing in urban rather than in rural settings, women also worked more commonly in all occupations in the urban setting. For example, in 1920 when 16.3 percent of women in the state were in the labor force, 35 percent of the women living in Louisville worked outside the home. In 1940, 17.6 percent of women statewide were in the labor force, compared to 32.3 percent of women in Louisville.

The highest percentage (45.7 percent) of women in Louisville who worked were African American women. There is evidence to suggest that the pattern of increased participation by women in the labor force during this subperiod (and the Postbellum as well) mostly affected Euro-American women, and that large numbers of African-American women had worked outside the home all along. For example, Woodman (1977), in a study of wage labor in seven southern cities in 1870 and 1880, found that in 1880, 73 percent of single African-American women were in the labor force compared to 24 percent of single Euro-American women. The same trend existed for married women, although the percentages in the labor force were lower (35 percent of African-American married women compared to 7.3 percent of Euro-American married women). Overall, regardless of marital status, 55 percent of African-American women and 18 percent of Euro-American women were in the labor force. Thus, there may have been important long-standing differences in the organization and operation of African-American and Euro-American households.

Burroughs (1924) noted that a higher than average number of women were employed in the cigar factories in Madisonville when agricultural prices or coal prices were down. This suggests that this work was intended to supplement the family wage economy (Tilly and Scott 1976) when male earnings were lower than normal. From 1880 to 1940, the percentage of married women who were employed in gainful occupations only increased from 4 to 6 percent (U.S. Census 1923 and 1943). Wages in the South remained well below wages in other parts of the country, despite some increases in the early 1930s in association with the National Industry Recovery Act. Minimum wage provisions were instituted in 1938, at a base level of 25 cents an hour, which had more of an effect on industries in the South than on other parts of the country (Wright 1986).

Growth of Retail Trade and Consumer Goods

Because of developments in manufacturing, such as improvements in making and using plastics and other synthetic materials, and in the retailing of manufactured goods,

more mass-produced goods were acquired by Kentuckians. Nationwide, per-capita outlays for new stores and warehouses grew rapidly during the 1920s. The number of persons employed in retailing nearly doubled between 1910 and 1930, rising 2.5 times faster than most production indexes of the period (Nourse 1934:378-388). More research on the growth of the retail trade in Kentucky is needed. Martin's (1988) research on the Pennyrile Cultural Landscape suggests that despite the Depression, stores increased by one-third during the 1930s in this cultural landscape. Although many of these were small general stores located in small towns and cross-roads hamlets, the number of specialty stores also increased.

Another development that occurred during this subperiod was the introduction of the large chain store. Chain stores were an outgrowth of the large department store, which had grown during the Postbellum subperiod partly because of increased access to customers using streetcars (Jackson 1985). Department stores continued to grow during this subperiod as well. Martin (1988) has suggested that the presence of chain stores in an area is a good indication of its retail market, since these large businesses were very selective in their location. In the Pennyrile Cultural Landscape, there were tremendous differences in the number of chain stores by county and the proportion they represented of all stores. These differences reflect the level of commercial activity and cash income available for retail sales in a particular area. For example, in 1940, Daviess County had 32 chain stores, which made up one-twelfth of the total number of stores in the county. In contrast, Ohio County had only one chain store, out of a total of 212 (Martin 1988:121). Besides increasing the volume of goods available to consumers, chain stores may have increased the number of goods available to local residents from distant manufacturers. However, to the extent that these stores centralized and monopolized consumption, they may have contributed to a decrease in the diversity of available material goods.

Nationally, per-capita income rose from under 300 dollars per year to almost 400 dollars between 1910 and 1930, after adjustments for price levels. Farmers participated less in this increase than any other group, because of low prices for their goods during the 1920s (Levan et al. 1934:17, 29). Levan et al.'s (1934) study of income in the early 1930s found that farmers tended to save and reinvest larger portions of their income than nonfarmers, and spent less on consumer items.

Spending on consumer items was not as closely correlated with income for farmers as it was for nonfarmers, which suggests that there was less variation in consumption patterns for farmers (Levan et al. 1934). Kentucky's income in 1929 ranked 43 out of 48 states for the farm population and 41 out of 49 states for the nonfarm population. Kentucky ranked high in savings and low in spending in the "other living" category (Levan et al. 1934:75). Overall, Levan et al.'s study found great inequality in spending patterns, with the wealthiest 10 percent of the population spending 30 percent of all outlays and 50 percent of all money in the "other living" category.

Communication and Transportation

Access to mass communication continued to increase during this subperiod. Many of the New Deal programs, like the Works Progress Administration (WPA)

projects or Civilian Conservation Corps (CCC) camps, resulted in improved communication between different parts of the state. Although the use of telephones continued to increase during this subperiod, there was a great deal of variation in the degree of access to telephone service enjoyed by residents of each of the five cultural landscapes. The ratio of inhabitants per telephone in 1933 ranged from 13.9 in the Bluegrass Cultural Landscape and 17.1 in the Pennyrile Cultural Landscape, to 54.3 in the Appalachian Mountains Cultural Landscape (Odum 1936:366). Cities were especially well-provided with these new inventions. For instance, by 1925, there was a telephone for every six persons in Louisville (calculated from Burroughs 1927). In 1940, the percentage of farms with telephones in the entire state was 15.8 percent, which was down from 25 percent in 1930. This decrease is probably due to the proliferation of small tenant farms during this subperiod. Although data on telephones by farm tenure is not available for 1930, it is for 1940, when 19.1 percent of owners, compared to 8.8 percent of tenant farmers, had a telephone. The highest incidence of telephones on farms was for farm managers, 59 percent of whom had a telephone (U.S. Census 1943). This may be due to their position as an administrator for a farm owner, which encouraged the need for better communication.

Public transportation also improved dramatically during this subperiod. By the late 1920s, Louisville had 10 interurban electric trolley car lines and several bus lines (Burroughs 1927). By the end of the subperiod, most electric trolley lines had been abandoned and often paved over because of the growth of the automobile and expanded taxi and bus service. City streets continued to be improved and sometimes paved. Even small cities like Danville, or some of the better-supported mining towns, had poured concrete streets by the early 1920s (Harrison 1984; Share 1982). However, many small towns, including many county seats, saw little improvement in their streets until after World War II.

Railroad growth during this subperiod was not spectacular, since most of the lines had been laid in the earlier subperiod. New lines continued to be built in the Appalachian Mountains Cultural Landscape, as coal mining penetrated further into the mountains. Railroads continued to be the most important source of shipping freight, and cities at the intersection of major lines (e.g., Lexington), or major lines and rivers (e.g., Covington-Newport area, Bowling Green, or Paducah) continued to grow. Interurban rail and bus service that radiated out from cities did much to stimulate and extend the hinterlands of regional retail centers like Lexington (Davis 1927). Although automotive travel and transportation of freight by trucks grew in importance, it was not until well after World War II and the development of interstate highways that rail connections lost their dominance in long-distance shipping of freight.

The most dramatic change during this subperiod is the growth of automobile and truck traffic, and with it, improvements in roads. Although automobiles had been available during the previous subperiod, the automobile did not become a major force in transportation until assembly line production and increased incomes enabled large numbers of people to buy them. By the early 1930s, there was one car for every 6.9 persons in the Bluegrass Cultural Landscape, one car for every 11.3 persons in the Pennyrile Cultural Landscape and one car for every 20.4 persons in the Appalachian Mountains Cultural Landscape (Odum 1936:366). The spread of cars led to an increase

in touring and in tourist-related growth by the end of this subperiod, beginning the growth in the service industry that accelerated after World War II.

In 1916, Congress passed the Federal Road Aid Act, which became the basis of federal/state partnerships in road construction. This required the identification of seven percent of roads to be federally funded. In Kentucky, the Agriculture Roads Agency merged with the Office of Public Roads to create a new department to handle this and other road-related tasks. In 1920, the legislature began to tax gasoline and horsepower, and created a Highway Commission. The Department of State Roads and Highways designated a 4,000 mile-primary road system (Collins et al. 1996).

Kentucky roads in 1918 totaled 57,916 miles, only 13,900 miles of which had any surface (Clark 1960). Davis (1923:141) estimated that small hamlets were generally located every 3.5 to 4 miles in the Jackson Purchase Cultural Landscape, closer than in the other cultural landscapes, because of the poor roads there. In 1920, the Kentucky Road Law established a system of projected highways connecting county seats and enabled the state to receive Federal aid. The increase in traffic associated with the spread of the automobile in the 1920s resulted in a much faster rate of road wear, so that new surfaces were needed (Sauer 1927). Construction of all-weather (paved) roads increased in the 1920s, although progress was slow. The new roads, which together with automobiles provided a true leap in transportation and convenience, reduced provincialism and regional differences, although Clark (1960) notes that they also made it easier for people to leave the state. Road building was not evenly distributed across the state, but highly concentrated in the area often called the Golden Triangle, between Lexington, Louisville, and the Covington-Cincinnati area, with drastically reduced efforts in the more rugged Appalachian region and more distant western Kentucky (Collins et al. 1996). Overall, Kentucky was slow to build roads compared to neighboring states, having in 1944 only 61 miles of high-type surface roads per square miles, compared to 117 for West Virginia, 77 for Tennessee, or 267 for Ohio (Collins et al. 1996:4).

Many people, especially older individuals, moved to be closer to new roads. As Sauer (1927:145) has noted, while in many states large numbers of people migrated from farms to towns and cities, in rural Kentucky, many chose to move from farms "to the pike." They could still have a garden and a few animals on several acres, but also could use the improved roads to commute to outside jobs or take advantage of the services and stores in nearby towns and cities. Thus, small farms and rural residences began to proliferate along roads.

Automobiles also affected settlement patterns in urban areas. Streetcar suburbs usually were built in finger-like patterns, with houses clustered within one-half to one mile of the streetcar lines. With automobiles, the space left between these suburban communities could be filled-in. Freedom from the streetcar line also resulted in an increase in lot size and a decrease in population density. The use of trucks for the transportation of local freight freed businesses from the center city or peripheral industrial zones and prompted the relocation of many businesses near the new residential suburbs. Thus, most suburbanites no longer found it necessary to commute into the city center (Jackson 1985).

The flurry of road-building activity not only stimulated economic growth by improving transportation, but it created many jobs in mining and shipping rock asphalt (some out-of-state) and gravel, and in road construction (Channing 1977). The use of these roads and trucks to haul tobacco resulted in increased business for loose-leaf warehouses (Axton 1975). Later, in the late 1940s, the expansion of the "farm to market" roads also increased the communication and accessibility of many rural areas and greatly spurred economic growth and wage labor.

River traffic declined tremendously during this subperiod, often adding the final blow to small river towns that had declined somewhat during the Postbellum subperiod, especially those that lacked rail service. A new lock was completed on the Cumberland River in 1916, an area that still relied heavily on river travel and transportation. Mail service continued on the Cumberland until 1934, and the gasoline-powered boats used in this service also delivered small amounts of freight to stores and individuals, large amounts of parcel post from mail-order catalogs, and provided informal passenger service. The Ohio Valley Urban Centers Cultural Landscape continued to benefit by having both rail and water transportation during this subperiod, both in trade and in manufacturing. Paducah also developed into an important center for building barges, and at least 50 gasoline powered packets operated out of Paducah in the 1920s (Davis 1923). In general, river traffic never recovered from the Depression, and since the 1930s, there has been little in the way of federal or state efforts to improve river navigation in Kentucky.

Lumbering and Coal Mining

The lumbering and mining industries remained very important during this subperiod. Although much of the best timber had already been removed by 1910, the post-World War I housing boom occasioned more buying and cutting. For example, a subsidiary of Ford Motor Company bought over one-half of Leslie County between 1915 and 1924 because of its timber (Caudill 1963). Lumbering methods also became more mechanized, with the use of overhead cables, giant handsaws, and shay locomotives. These new methods increased the destruction of the local landscape, and whole mountain sides were often cleared and left to erode (Eller 1982:103).

It was during this subperiod that public reaction to the level of destruction of forests began to grow. In response, several National Forests were established in the East in the 1910s (Eller 1982:119). The E. O. Robinson Mountain Fund was established in the early 1920s to promote reforestation in Kentucky. In 1923, approximately 15,000 acres in Breathitt, Knott, and Perry counties were conveyed by this fund to the University of Kentucky for agricultural experiment work, teaching, and practical demonstration of reforestation (Overstreet 1984). The Cumberland National Forest, now called the Daniel Boone National Forest, was founded in the mid-1930s. Its boundaries have changed and grown considerably since then. The creation of these forests usually meant the abandonment and sometimes demolition of farms and houses. Selective lumbering and other forest activities often continued. These forests also introduced a host of new management-related activities, and many new buildings for office, storage, and recreational use were constructed. The New Deal programs such as the WPA or CCC often participated in the building of these structures and sites.

Despite the World War I housing boom, the timber industry generally declined in Kentucky, partly because most of the best trees had already been cut. As a result, many lumber camps were abandoned and fewer new lumbering sites were established. Also, towns that had grown up around the lumber industry, such as Catlettsburg, probably declined in population. Perhaps by this time, many persons had either become so accustomed to wage labor or had experienced such a level of deterioration in their farm land that they could not completely return to farming, and thus provided a ready labor source for the developing mines.

The period from the mid-1910s through the mid-1920s was a time of prosperity for both coal companies and miners in Kentucky. By the 1920s, there were at least 33 coal camps or towns in Letcher County, 37 in Perry County, 40 in Pike County, and 25 in Harlan County (Caudill 1963). Shifflett (1991) estimates that by 1925, there were over 500 coal towns throughout Appalachia. One important change in many mining town homes was an increase in labor-saving devices, such as electric washing machines and ice-boxes. Living conditions had improved dramatically by the 1920s, when surveys of union versus nonunion towns found little difference between the two (Hinrichs 1923). Also, some of the larger coal communities discussed in the Postbellum section, like Benham and Jenkins, were founded during the first part of this subperiod. These towns included very up-to-date residences and gave greater attention to public facilities like theaters or schools.

The prosperity of the 1910s and 1920s ended in 1927, however, when there was a sharp drop in the price of coal. Coal mining also was severely hurt by the Depression of 1929, and many small mines failed. Production declined by 10 million tons between 1929 and 1930 and continued to decline for the next several years (Currens and Smith 1977:33). Many small mines and mining towns may have been abandoned or taken over by larger companies. This suggestion is supported by the fact that the number of mines in the state declined from 742 in 1919 to 478 by 1939, while total persons engaged in mining stayed about the same: 43,347 in 1919 compared to 49,072 in 1939. In 1929, before the Depression, the number of persons involved in mining had been even higher at 57,912 (U.S. Census 1943).

Many large coal companies, hopeful of rapid economic recovery, extended credit at the company stores to help miners stay in the company towns and wait for resumption of mining. Over time, these extensions further hurt many coal companies, causing additional failures. Also, some coal companies failed because they had distributed a large percentage of their profits to shareholders, leaving insufficient reserves for weathering an extended economic depression (Caudill 1963). One result of this situation was frustration and hostility between the miners and the coal companies, which encouraged unionization. Attempts at unionizing previously had been unsuccessful in the Kentucky mines (Hinrichs 1923). Although wages were somewhat low in Kentucky compared to other mines, the mine companies often argued that they had no choice but to pay low wages because of the high costs of transporting coal out of the region. The tight control of the companies and the increase in the standard of living in most mining towns from the late 1910s through 1927 had hindered efforts to unionize Kentucky coal miners. During the Depression, however, lay-offs, lower wages, the use of a piecework system under conditions of low prices, and the increased dangers that resulted from cutbacks on

maintenance, all encouraged miners in Kentucky to unionize (Caudill 1963; Eller 1982; Hinrichs 1923; Thomas 1971).

By the end of the 1930s, mining began to resume in the Appalachian Mountains Cultural Landscape, where it was spurred by the oncoming war. A need for rifles also caused a flurry of timbering in the early 1940s (Caudill 1963). However, the stable labor force of the 1920s had largely dispersed, and coal companies increasingly turned to mechanization. The duckbill loader, introduced in 1937 (Caudill 1963), was very efficient and an important step toward automation. The new roads built by the WPA, CCC, and the state, and the availability of motor trucks, also greatly changed the nature of mining. These operations, which depended on new equipment like the duckbill loader and electric drills for mining coal and trucks for transporting it, resulted in a new and different kind of mining. Before, mines had been tied to the location of railroads and the location of miner's housing had been tied to the mines. Now mines could be dispersed to reach coal seams that were previously inaccessible or too small to be considered workable. The improvements in transportation and lower labor demands also meant that housing could be much more dispersed than in the previous subperiod, and scattered rural houses (but not farms) increased rapidly in mining areas (Caudill 1963; Pickard 1969).

The frenzy of new mining and new money also resulted in town growth during the 1940s, although these new patterns of mining were not much more successful than the earlier company towns in terms of returns to local city and county governments, support of school and social services, and taxation (Caudill 1963). These changes also had an effect on the organization of mining. While many large companies continued their production, the technological changes also made it more feasible for small operators to develop mines, often for as little as a 1,500 dollar investment (Caudill 1963). Many of these small mines were family operations that relied on the participation of female family members (Kirby 1987), who worked beside hired nonfamily personnel as needed.

This subperiod saw the introduction of large scale strip-mining, which greatly altered both the way that mining was conducted and the physical landscape. Strip mining using steam shovels and other heavy equipment was underway in the Western Coalfield Section of the Pennyrile Cultural Landscape by 1922, when figures for tonnage by types of mining were first kept. In that year, 98,164 tons of coal had been surface mined, compared to 8,118,385 tons from underground mines. By 1930, the surface tonnage in the Western Coalfield Section had tripled to 309,454 tons. The first recorded surface mining in the Appalachian Mountains Cultural Landscape was in 1928, when 18,100 tons were mined in this manner, compared to the 45,670,645 that were mined underground (Currens and Smith 1977:33). Surface mining continued to grow in the Western Coalfield Section and the Appalachian Mountains Cultural Landscape, although by 1975, the tonnage from surface mining was only 342,923,574, a small amount compared to the 2,147,737,048 tons mined underground. The largest strip-mining operations in the Western Coalfield Section were in Muhlenberg, Hopkins, and Ohio counties. The largest strip-mining operations in the Appalachian Mountains Cultural Landscape were in Pike, Perry, and Breathitt counties (Currens and Smith 1977:8-10).

Not only were fewer miners needed, but strip-mining operations were more dispersed on the landscape than underground mines. These trends, coupled with the growth of the automobile, which allowed miners to commute to the mines, contributed to

the decline of the nucleated company town. Company towns also declined because mining companies became less and less interested in providing housing and other facilities for miners, especially as mining became less labor intensive.

As they came to rely more heavy equipment, coal companies frequently located in larger towns and urban centers were they could more easily buy and repair equipment, which further contributed to the decline of smaller communities. Railroad junctions also declined as new repair techniques reduced the need for maintenance (Pickard 1969). One counterbalancing trend was that as mine companies gave up company housing, many miners were given the opportunity to buy the houses that they had rented for years. This process was facilitated in the 1940s and 1950s as welfare payments, disability payments, and pensions gave miners additional sources of cash.

RECORDED HISTORICAL ARCHAEOLOGICAL SITES

This section presents a review of the number and types of historical archaeological sites documented in Kentucky (Table 8.1). It should be noted that Table 8.2 does not include numbers of sites within the Ohio Valley Urban Centers Cultural Landscape. This is because the archaeological site inventory does not include the variable "cultural landscape" as it is used in this chapter, but information is provided on the number of sites recorded in the corresponding county. Thus, all sites in Jefferson County are considered part of the Louisville Ohio Valley Urban Center, and all sites in Kenton, Campbell, and Boone counties are considered within the Northern Kentucky Ohio Valley Urban Center subset.

Prior to 1987, there were only 2,485 historic archaeological sites documented in Kentucky. Since 1987, 3,571 historic archaeological sites have been recorded, this represents almost a 150 percent increase in the number of historic sites documented in Kentucky in the last 20 years. The most dramatic increase in site recordation occurred in the Eastern Pennyrile Section where only five historic archaeological sites had been documented in 1987. This section now contains 253 sites. But the greatest absolute gains were in the Appalachian Mountains Cultural Landscape with 1,044 and 894 sites added to the site inventory in Coalfields and Foothills Sections, respectively, since 1987. A large number of historic archaeological sites also were documented in the Western Coalfields Section (n=900) during this time period.

With a caveat that the size of the cultural landscapes and sections are not constant, so that one might expect larger ones (more or larger counties) to have more recorded sites, one can make some observations about the distribution of recorded sites by cultural landscape. The Appalachian Mountains Cultural Landscape continues to contain the most historical archaeological sites (Table 8.1), with the Ohio Valley Urban Centers containing the fewest (n=121 sites in Louisville [Jefferson County] and n=177 in Northern Kentucky [Kenton, Campbell, and Boone counties]). An argument can be made that these are just four counties, and so why expect as many sites as the large multi-county cultural landscapes? But, in terms of the proportion of the population of the state that historically resided in these counties, and numbers of sites that this population density would have created, the number of recorded sites seems relatively low.

Except for Eastern Section of the Pennyrile Cultural Landscape, industrial (or expanded industrial) and residential sites account for at least 50 percent of the recorded sites in each cultural landscape. Within the Eastern Section the percentages of these two site types have declined relative to 1987, as more different types of sites have been recognized and recorded by professional archaeologists. While cemeteries made up less than 1 percent of the recorded sites in 1987, they now account for from to 3 to 7 percent of the sites within each cultural landscape (Table 8.1). There also has been as sharp increase in the number of military sites recorded. The number of military sites increased from 3 to 46; Louisville is the only area where no military sites have been recorded.

As in 1987, the Inner Bluegrass Section has a low percentage of sites in the residential category and a higher percentage of sites in nonresidential categories, relative to the other cultural landscapes, indicating greater diversity of recorded sites in this

Table 8.1. Site Types by Cultural Landscape.

	Purchase				Pennyrile				Ohio Valley Urban				Bluegrass				Appalachian				
	Jackson		W. Coalfield		Plain		Eastern		Louisville		N. Ky		Inner		Outer		Coalfields		Foothills		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Open Habitation w/out mound(s	100	22.9	243	22	106	24	100	39.5	23	19.0	32	18.1	171	28.7	113	19.7	79	7.1	107	8.7	1074
Isolated Find	1	0.2	7	0.6	2	0.5							1	0.2	1	0.2			1	0.1	13
Rockshelter			17	1.5			6	2.4	1	0.8				0		0	135	12.1	239	19.4	398
Cave			6	0.5	5	1.1							1	0.2	1	0.2	1	0.1	4	.32	18
Quarry			1	0.1									2	0.3	1	0.2	1	0.1	10	.81	15
Stone Mound			2	0.2							1	0.6	3	0.5	2	0.3	1	0.1	4	.32	13
Earth Mound	1	0.2	2	0.2							1	0.6	1	0.2	2	0.3	2	0.2			9
Mound Complex	1	0.2													1	0.2			2	0.2	4
Petroglyph/Pictograph	1	0.2	3	0.3		0	1	0.4							1	0.2	1	0.1	1	0.1	8
Non-Mound Earthwork					1	0.2							1	0.2					2	0.2	4
Workshop					1	0.2							1	0.2	2	0.3	1	0.1	1	0.1	6
Isolated Burial													2	0.3			4	0.4	2	0.2	8
Cemetery	15	3.4	54	4.9	18	4.1	11	4.4	8	6.6	11	6.2	10	1.7	19	3.3	67	6.0	39	3.2	252
Specialized Activity Site	2	0.5	6	0.5	12	2.7	1	0.4	2	1.7	4	2.3	5	0.8	2	0.3	25	2.2	38	3.1	97
Open Habitation w/ Mound(s	3	0.7	1	0.1			1	0.4			1	0.6	3	0.5	1	0.2	1	0.1	1	0.1	12
Historic Farm/Residence	242	55.4	613	55.4	236	53	107	42.3	74	61.2	92	52.0	286	48.0	348	60.5	660	59.1	603	49.0	3261
Industrial	6	1.4	19	1.7	13	2.9	9	3.6	5	4.1	1	0.6	27	4.5	27	4.7	46	4.1	96	7.8	249
Military	4	0.9	3	0.3	2	0.5	5	2.0			11	6.2	13	2.2	3	0.5	3	0.3	2	0.2	46
Other	61	14.0	130	11.7	47	10.6	12	4.7	8	6.6	23	13.0	69	11.6	51	8.9	89	8.0	79	6.4	569
Total	437	100.0	1107	100.0	443	100.0	253	100.0	121	100.0	177	100.0	596	100.0	575	100.0	1116	100.0	1231	100.0	6056
Since 1987	143		207		179		5		na		na			124		207		72	377		

Table 8.2. Detailed breakout of Sites with Site Type of Rockshelter, Military, Industrial, and Other.

	Jackson	Pennyrile			Ohio Valley Urban		Bluegrass		Appalachian		
	Purchase	Western Coalfield	Plain	Eastern	Louisville	N Kentucky	Inner	Outer	Coalfields	Foothills	Total
Revolutionary War	1						16	1			18
Civil War	3	2	4	3		10	14		9	2	47
Farm/Residence	26	21	15	8	1	2	17	22	38	40	190
Tavern/Hotel		1	1				1		2		5
Church	1	3	4		1			2	2	1	14
Cemetery				2			1		1	3	7
Stone Wall							2			1	3
Winery								1			1
Store		1	1		1		1				4
Blacksmith Shop					1		3	1		1	6
Fire Tower										1	1
Tar Kiln				1				2		17	20
Brick Kiln or Feature	3	1						1	1	1	7
Lime Kiln		3	1	2			1				7
Iron Furnace								20		2	22
Logging Site		2							6	18	26
Coal Mine	1	4		4				1	26	10	46
Silver Mine								1	1		2
Gin, Mill/ Water Work	1	2	5	2	1	1	11	1	4	1	29
Nitre Mining Site				1					14	110	125
Quarry							2		2	2	6
Still		6							53	64	123
Distillery			1		1		1				3
Water Collection		1								1	2
Oil/Gas		3						3	1	9	16
Charcoal Kiln										16	16
Canal									1		1
Vehicle Storage									1		1
Boat		1									1
Bridge/Culvert		1	2	1			1	1	1	3	10
Railroad Related		1		2			6		1	2	12
Government/Service		3	2	1	1		1	1	1		10
Urban Community/Residence					1		3	1		1	6
Education	1	3	1				3	3	4	3	18
Play Area/Recreation/Picnic	1								3	1	5
Industrial Storage									1	1	2
Rural Community			2				1	2			5
Unknown	3								5		8
Campsite				1					12	21	34
Pictograph, Petroglyph	1		1						3	1	6
Total	48	79	42	29	14	20	98	67	250	364	1011

region (Table 8.1). This pattern of greater site type diversity also has been documented in the Outer Bluegrass Section, the Coalfields and Foothills sections of the Appalachian Mountains Cultural Landscape

As in 1987, during the past 20 years, few industrial sites (n=17) have been documented in the Western Coalfield Section of the Pennyrile Cultural Landscape (< 1 percent). This is somewhat surprising, given that this region should contain many coal-related resources.

Table 8.2 shows sites that had been classified as rockshelters, military, industrial, and other types. Not surprisingly, many of the rockshelter sites contained the remains of stills and nitre mining. Moreover, tar kilns, charcoal ricks, and logging and coal mining sites have been identified in the Appalachian Cultural Landscape, and several iron furnaces have been reported for the Outer Bluegrass Section. Military sites tend to be pioneer stations and Civil War sites, especially in the Inner Bluegrass Section. Table 8.2 also demonstrates that archaeologists have documented a wide range of historic sites, from landscape features, such as stone fences and railroad beds, to recreation areas, fire towers, and abandoned rural communities.

JACKSON PURCHASE CULTURAL LANDSCAPE

Several projects have been undertaken in Livingston County within the city limits of Smithland. They include the Gower House (15Lv178), the Bush-Dahlem House (15Lv218), and Fort Smith/Fort Starr (15Lv207). The Gower House is an early nineteenth century tavern/residential site (Carstens 1989, 1993; Carstens et al. 1997; Quertermous 2001; Rivers 1998, 2000, 2004). Investigation of the Gower House has focused on the middens in the side and back yard, and has identified the location of a detached kitchen. The large number of oyster shells recovered from the midden is indicative of some of the fare served by the tavern. Not far from the Gower House is the Bush-Dahlem House. Excavations at this site have been limited, but they have provided information on the stratigraphy and distribution of deposits in the yard (Livingston Central High School Archaeology Class 2002).

The Civil War site of Fort Smith and Fort Starr, a Federal gun emplacement in Smithland, have been the focus of several projects (Ball 2004a; Carstens 1998; Quertermous 1999). These investigations have provided information on the construction and layout of both forts.

Limited investigations also have been conducted at Columbus-Belmont State Battlefield Park (15Hi173) (Sussenbach and McBride 1991). This site was a Confederate fortification and encampment. The project did not locate significant Civil War deposits, but did document the presence of a late nineteenth to early twentieth century African-American residential occupation.

In the early to mid-1980s, Wesler (1982, 1983, 1984a, 1984b, 1984c, 1987) conducted archaeological investigations at Whitehaven (15McN65), an upper class residence in McCracken County built during the Civil War and occupied into the mid-twentieth century, and the Moore House (15Ba108), a mid-nineteenth century to present-day domestic residence in Ballard County. Wesler's work on artifact patterning at both sites has contributed to studies of socioeconomic status, functional pattern recognition and use, and the spatial distribution of material culture. Welser (1993) also undertook limited excavations at the Tilghman House in Paducah. In comparison to Whitehaven and Moore, the Tilghman House artifact assemblage contained more personal items, such as buttons.

Carstens' research on Fort Jefferson, George Rogers Clark's 1780-1781 fort, has been ongoing since 1980. The short occupation span of this military and civilian fort, and its importance in American history make it an extremely valuable archaeological site. A significant library of archival materials, consisting of over 5,000 primary documents, contains data on a variety of topics, such as the size and composition of the fort's population, the role of the fort in the American Revolution, activities conducted at the fort, subsistence patterns, social status and military discipline, and material culture items sent to the fort (Carstens 2004a, 2004b). Efforts to locate Fort Jefferson, including remote sensing, environmental reconstruction, map scaling, and magnetometer survey, have been inconclusive. The documents that have been assembled on this site, however, provide a context for the study of early American forts throughout the Ohio Valley (Carstens 1984,

1986, 1987, 1990, 1995, 2004a, 2004b; Carstens and Carstens 2004; Carstens and Dowdy 1996; Kellie et al. 2004; Lucy and Carstens 1998; Potter and Carstens 1986; Stein et al. 1983).

Other projects that have generated information on historical archaeological sites in this cultural landscape include Schock and Langford's (1978) investigation of a nineteenth century domestic site at Sassafras Ridge in Fulton County. A pit feature was documented that may have been used to smoke meat; it may also have been used for refuse disposal.

Three studies have generated information on small nineteenth century communities in this cultural landscape. The first is Dickson and Campbell's (1979) survey of the Reelfoot Lake National Wildlife Refuge and Lake Isom National Wildlife Refuge. Although only two historical sites were documented, one of these is the extinct community of Bondurant (15Fu304B). This small railroad community, which included seven houses, a former cotton gin site, a sawmill site, and three other sites of unknown function, dates from the late nineteenth century to about 1930. The second is Schenian's (1985) study of a portion of the Bayou de Chien drainage during which she collected archival and secondary historical information on three small nineteenth century communities. Two of these towns, Hickman and Moscow, were established in the 1820s as river transport centers. The third, Water Valley, was established in the 1870s on the Illinois Central Railroad line. Finally, in their survey of the Mississippi River bottoms and bluffs, Fitting et al. (1976) recovered historic materials that may be associated with the original town of Columbus. A study of churches in the Jackson Purchase has been undertaken by Wesler (2007), with students documenting Catholic (South-Price 2007) as well as Baptist church sites (Gibson 2007; Parrish-Lamb 2007).

Historical research and reconnaissance, as well as limited excavation, have expanded our knowledge of two industries in the Jackson Purchase Cultural Landscape. Hockensmith (1996a, 1999, 2004c, 2004d) documented the Rudd lime kiln complex, which was located along upper and lower sites on the banks of the Cumberland River in Livingston County, and Hockensmith and Black (1998, 2004a, 2004b; also Hockensmith 2004b, 2005b, 2007b) have researched the Paducah brick industry.

PENNYRILE CULTURAL LANDSCAPE

WESTERN COALFIELD SECTION

Some the earliest historic archaeology in this section took place at Fort William (15Bn48), a Civil War site in Glasgow (Barren County) (Schock 1978a, 1978b). Fieldwork at this site focused upon locating the magazine and associated tunnel entrances and provided information regarding the construction of walls and placement of guns.

Rural farmsteads are one of the more common site types in this section (Table 8.1). Among those that have been investigated are sites 15Ha327 and 15Ha328 (Schock and Alexander's 1981), Site 15He656 (Fiegel 1988), Hazelwood Homestead (15He748), and Bill Monroe Family Homestead (15Oh224) (Prybylski 2001). Extensive historical archaeological work also was carried out at a nineteenth century farm residence in Meade County (Otto and Gilbert 1982, 1984). One of the major conclusions of this study was that although the documentary record demonstrated that the site occupants grew increasingly wealthy over time, the archaeological record suggested that they did not invest their wealth in material culture items.

The Brown site (15He683) in Henderson County is one the most intensively excavated farmsteads in this section, and one of the first African-American sites to be investigated. Archaeological work conducted at this site indicates that this African-American farmstead was occupied from the mid-1870s to the mid-1910s (Wagner 1995; Wagner et al. 1992). Its owner was a Civil war veteran who was listed in the 1870 census as a farm laborer, but was able to buy 39.66 acres of land in 1878. There was nothing in the archaeological record, however, to indicate that this site was ever occupied by African-Americans, and the site is more similar to farmsteads occupied by lower status whites than to those occupied by slaves. The faunal remains revealed a dominance of pork, which is consistent with the Upland South dietary pattern.

Architectural features and artifacts (primarily nails) were analyzed to determine the layout of the house (one to two rooms expanded over time with a porch). Based on this research, it was suggested that the house was of frame construction. Socio-economic status indicators, such as a ceramic cost index, were fairly low, suggesting that the family that occupied this residence was relatively poor. This suggestion is supported by archival data (census records, suits, and deeds showing a second mortgage). The documents indicated that while the family was prosperous in the 1880s, their fortunes declined over time. The decline may have been related to the late nineteenth century tobacco wars, which resulted in the blacklisting of many African-American farmers who then had difficulty selling their crops (see discussion of tobacco wars in Culture History section) (Wagner 1995; Wagner et al. 1992).

Examination of the Priest site (15He873) in Henderson County may have documented the presence of an African-American slave cabin, represented by a small outbuilding or structure with a pit cellar located near the main house (Versluis 2004). Census research indicated that Priest had four slave houses. A variety of domestic artifacts were recovered from the pit cellar. Though the site appears to have been

occupied into the Postbellum period, the mean ceramic date for the pit cellar was 1840. The presence of a clamp or scove brick kiln (15He873) on Priest's property, suggests that bricks were most likely made for on-site use (Versluis 2004).

Though no cemeteries have been excavated in this section, several located on the Wendell Fort Regional Training Center have been mapped (Mabelitini 2007; Stahlgren 2005b).

PLAINS SECTION

Some of the earliest historic archaeological work in this section took place at the Shaker Community of South Union (15Lo321) in Logan County. Schendera's (1974) study of this community included a discussion of surface collections from five different areas around the Center House complex, and Mansberger and Deiss (1990) delineated a large limestone privy, pits, postholes, a shallow trench, and brick and stone drainage features. The most extensive work at this site was conducted between 1991 and 1995 (Fiegel 1995). This study, which included documentary research, survey, and limited excavation, recorded numerous buildings or activity areas within the Shaker complex. Information on a number of structures that once were present at this site was obtained from a review of Shaker journals. Data derived from this research was used to determine the spatial extent of this community (Fiegel 1995).

Another early historic archaeological project undertaken in this section was Schock and Lanford's (1985) investigations of the Moose Miller site, a residential (15Ht111) and barn (15Ht112) site in Horse Cave (Hart County). This study determined that the barn, which had been built in the early twentieth century, had been constructed with wooden pegs, and had a prepared clay floor. Other site-specific studies include monitoring of construction for a pipeline at the Floyd Collins site (15Ed11) in Mammoth Cave National Park (Edmonson County), which identified the location of a nineteenth century house site (DiBlasi 1988); and an ethnographic study of a late nineteenth century to present farm house in Logan County (Janzen 1986a, 1986b).

A mid-nineteenth to early twentieth century farm complex (15Ch569) within the confines of Fort Campbell, Christian County, was investigated. Foundation piers from several residences and other structures were documented (McNutt 2004).

A rural site in Logan County, the John Arnold Farmstead (15Lo168) was owned by a prosperous slave owning farmer, John Arnold, from the 1790s to 1840s (Andrews et al. 2004). The main house was likely a log dog-trot structure, with stick and mud chimneys. A second structure, interpreted as a detached kitchen/possible slave quarter, had a more substantial chimney, likely of brick, with a stone foundation. Midden deposits and features were documented. Analyses of the artifacts showed extensive purchasing of up-to-date ceramics, supporting a conclusion that the occupants in this frontier setting were not isolated from national markets. The calculation of ceramic cost index values suggests they kept up with national consumer trends, such as buying expensive tea wares, possibly to signal their participation in the more genteel dining patterns of the early nineteenth century. High quality furnishings and clothing also are

suggested by the assemblage. Faunal and ethnobotanical analysis (Coughlin 2004; Rossen 1995a) showed a rich and varied diet, with some decline in the use of wild game over time.

Taverns were an important component of most rural communities. Investigation of the Baber Hotel (15Mcl137) in McLean County documented intact midden deposits, refuse pits or cellars, wells, and posts (McBride and Fenton 1996). The artifact assemblage from this mid-nineteenth century tavern was especially rich in early to mid-nineteenth century decorated ceramics. The presence of smoking pipes and drinking vessels reflects the tavern's role as a social and civic center, where important meetings were held. Analysis of the ethnobotanical remains (Rossen 1995b) revealed the presence of a number of typical fruit trees or shrubs and species, such as Osage orange and American holly, which are not typical to the area. The presence of these plants is suggestive of extensive landscaping of the yard around the hotel building.

In addition to the Baber Hotel, limited excavations have been conducted at Bell's Tavern (15Bn109) in Park City. This study identified intact deposits and outbuildings associated with this mid-nineteenth century tavern (Seiter and Stottman 2007; Stottman 1999b).

The only major project undertaken within a large urban context in this section or the entire Pennryile Cultural Landscape consisted of an investigation of five lots along Center Street in Bowling Green (15Wa116 and 15Wa117) (Stottman and Stahlgren 2006). Analysis of the recovered artifacts and the spatial distribution of documented features (privies, cellars, trash pits, postholes, and foundations) focused on understanding changes in lot use over time, and the relationship of the Center Street area to the development of Bowling Green. In the early nineteenth century, as Bowling Green grew, the area along Center Street was platted into lots. Residential development in the area, however, was slow, and it remained quite rural into the 1840s, being comprised of several urban farmsteads. Although only around ten acres in size, the farmstead investigated during the course of this study was laid out much like larger plantations, consisting of a main house with domestic outbuildings in close proximity and slave/servant quarters located beyond that.

By the 1870s, land speculators began buying urban farmsteads in the Center Street area, as there was renewed interest in residential expansion in Bowling Green. Several of the middle and working class families that lived along Center Street were employed at the nearby Louisville and Nashville Railroad facility. During this time, smaller urban house lots became more defined on the landscape, as evidenced by fence posts, trash pits, and privies documented at sites 15Wa116 and 15Wa117. With the development of the Shake Rag African-American neighborhood, the Center Street area primarily became African American rental property, as middle and working class families moved up in status and to other neighborhoods. In the late nineteenth and early twentieth centuries, property owners subdivided their land into smaller lots, with one lot having as many as six houses. Sites 15Wa116 and 15Wa117 represent good examples of the research potential of urban deposits, even when the function of the house lots has changed through time, as they contain a record of these changes.

The only project in this section that has contributed to the study of African-American slave life was the limited investigation of the Forest Home site (15Wa103) in Warren County. This work documented the remains of a pit cellar and other deposits that may be the remains of one and perhaps two slave quarters (Stottman 1996a).

Industrial sites documented in this section include lime kilns in Logan County (Hockensmith 2007a), and a lithographic stone quarry in Meade County (Hockensmith and Coy 1995). This section is not well-represented in terms of cemetery studies. The McCutchen-Downy cemetery in Simpson County is the only mortuary site that has been investigated. It was mapped and two of the graves were excavated (Best and Applegate 2004; Davis et al. 2005).

EASTERN

Of the three sections that comprise the Pennyrile Cultural Landscape, the Eastern Section contains the fewest sites (Table 8.1). Not surprisingly, there also have not been a large number of historic archaeological sites investigated in this section, with almost all of this work being conducted since 1987). Some of the earliest work undertaken in this section was Fiegel's (1989, 1991; Fiegel and Henderson 1987) investigation of the Luther-Richards Farm (15Ru12 and 15Ru43) in Russell County. This project combined oral historical, archaeological, and architectural information to interpret a late-nineteenth farm complex that contained 16 standing outbuildings. Through an examination of the spatial distribution of artifacts, it was possible to delineate several activity areas (Fiegel 1989, 1991). The relationship between nail size and construction method also was explored, and it was suggested that greater rates of deterioration of smaller nails compared to larger ones, and different nail size requirements according to hardness of the wood, need to be considered when using nail data to interpret construction methods.

Other rural historic residence sites investigated in this section include Site 15Ad77 in Adair County (Bradbury 1996), the Abe Carter Farmstead (15Da33) in Daviess County (Creasman 1993), and the Cowan Farmstead (15Pu234) in Pulaski County (Huser and Lynch 2005). Investigation of Site 15Ad77 suggested that it contained the foundation remains of an early to mid-nineteenth century log cabin and possibly an associated outbuilding. The Abe Carter site contained the remains of an outbuilding that may have been used as a smokehouse. The artifacts, which dated from ca. 1840 to 1940, suggested a lower to middle socioeconomic status for the family that lived at this site (Creasman 1993). The Cowan Farmstead (15Pu234) contained a nineteenth century domestic residence, with only a few associated features, and a cemetery with six grave shafts: Robert Cowan and five unmarked graves (Huser and Lynch 2005).

Mill Springs Battlefield (15Wn2, 15Wn24, 15Wn73, and 15Pu131) is the only Civil War-related site investigated in this section (Miller and Walsh 1993). Two areas within the battlefield were metal detected to locate ammunition and other materials that could be used to interpret troop movements during the battle (Miller 1994). The results point to some relationship between the recovered remains and the location of battle lines

or positioning of troops. Miller notes, however, that these conclusions should not be considered definitive, since only one area was surveyed completely and another was only sampled.

A few industrial sites have been documented in this section. They include lime kilns recorded in Green County (Hockensmith 2004a); an early-twentieth century mill and wheel abutment in Pulaski County (Deiss 1987); and steam engine repair shop operated by the Cincinnati, New Orleans, and Texas Pacific Railroad in Pulaski County (Barrier and Haag 2005; Beverly 2005).

The only cemetery study that has been undertaken in this section was conducted in the mid-1990s at a small family or community cemetery in Metcalf County (Nancy Ross-Stallings 1996). Of the 18 grave shafts identified, only three were excavated. Analysis of the remains suggested a diet low in sugar but high in gritty materials. The organization of this cemetery was similar to that of the Upland South Folk cemetery pattern, with possible influence of Scotch-Irish traditions.

OHIO VALLEY URBAN CENTERS

By
M. Jay Stottman

LOUISVILLE

Historical archaeology in the Louisville area has largely been focused on plantations, farmsteads, and urban neighborhoods. Historic plantation sites that have been investigated include Locust Grove (15Jf541), Farmington (15Jf574), and Riverside (15Jf531). In the 1960s and 1970s, three different institutions (University of Louisville [Granger 1986; Granger and Mocas 1970; McGraw 1971], the Louisville Baptist Seminary [DuVall 1977], and Center College [DuVall 1977]) worked at Locust Grove. All of these projects were geared toward aiding the restoration or reconstruction of outbuildings, such as the springhouse (Granger 1986; Granger and Mocas 1970; McGraw 1971), ice house (DuVall 1977), or kitchen (DuVall 1977). Subsequent work also focused on outbuilding identification and reconstruction, but expanded to examine the lives of the slaves who lived at Locust Grove. From the mid-1980s to late 1990s, the University of Louisville excavated three slave cabins (Young 1995), a barn (Diblasi 1997), and small outbuildings (DiBlasi 1997; Tillett 1998).

Amy L. Young's (1995a, 1995b, also Young et al. 1995, 1998) work focused on slavery at Locust Grove, and it represents the first extensive investigations of slavery in this cultural landscape. Young's research was conducted within the context of the Upper South Plantation model, which distinguishes the mixed farming economy, and smaller land and slave holdings of Kentucky plantations from those commonly found in the Deep South. Utilization of this model resulted in a more nuanced understanding of the condition of slaves who worked and lived at Locust Grove (Young 1995b). Slaves living in Kentucky and elsewhere appear to have developed their own culture and community, which helped reduce risk through the supplementation of the minimal housing, food, and health care provided by slave owners. Slaves were able to raise their own livestock and gardens, and store surplus food in pit cellars. The slaves at Locust Grove strengthened their community bonds by maintaining close ties to African traditions and religion as evidenced by the presence of charms and other religious artifacts (Young 1995a, 1995b; Young et al. 1995, 1998). Research conducted at Locust Grove has provided a solid foundation for slave studies in Kentucky, which has been augmented by research at other plantations (e.g., Farmington and Riverside). Taken together, this research points to the presence of a broader slave community beyond individual plantations in the Upper South.

In 1975, another restoration project of a former plantation estate, Farmington, provided the impetus for archaeological work, this time, a survey. Like the earlier work at Locust Grove, this study focused upon the identification of outbuildings (Wilson 1975). In addition to the survey, examination of a variety of historic documents was used to develop a detailed description of Farmington as a nineteenth century hemp plantation (Ottesen 1985). Ottesen's (1985) reconstruction of Farmington provides information on the numerous outbuildings that were once present at this site and agricultural activities

that took place there. These studies helped guide subsequent investigations of the summer kitchen and a slave cabin (McBride and Bellhorn 1992; Slider 1998; Stahlgren and Stottman 2007).

Investigation of a small cabin on the periphery of the domestic outbuilding complex at Farmington led to a better understanding of slave housing architecture on plantations in Jefferson County and the transition of such buildings from initial use by plantation owner, to a slave quarter, to a tenant house (Slider 1998). Artifacts recovered from the slave quarter, such as a pierced coin marked with an "x", suggest that the Farmington slaves, like those at Locust Grove, participated in a distinct African-American subculture that involved interaction with other slaves and freed African-Americans (Stahlgren and Stottman 2007). Furthermore, archaeological research at Farmington has been conducted within the context of present-day politics of race relations and the interpretation of slavery for the public at this site (Stahlgren and Stottman 2007).

Excavations undertaken at Riverside, the Farnsley-Moremen Landing, a small Antebellum plantation and large Postbellum farm, have assisted in the identification and reconstruction of outbuildings including the detached kitchen, wash house, slave/tenant house, and barn (W. McBride and K. McBride 1989; Stottman and Watt-Roy 2000; Stottman and Prybylski 2005). This research also has examined changes in the spatial arrangement of domestic outbuildings from the 1830s to 1930s, as their placement shifted from the front of the house facing the Ohio River to the rear of the house, which had better vehicular access. Excavation of the detached kitchen found that the building was a timber-framed structure situated on a wood post foundation. This architectural style was likely used on many Upper South plantations, but few, if any, standing examples are known to exist in Kentucky (Stottman and Watts-Roy 2000). Artifacts recovered from the detached kitchen and the slave/tenant house, such as an "x" marked spoon handle and pierced George Washington commemorative token, suggest that at Riverside, like at Farmington, slaves participated in a distinct subculture that involved interaction with other slaves and freed African-Americans.

The ca. 1880-1930 washhouse represents one of the few archaeologically investigated buildings of this type in Kentucky (Stottman and Prybylski 2005). An extensive drainage system, a cistern, an outdoor kettle hearth, and a cesspool are among the features associated with this structure. Though primarily constructed to protect a water cistern, it is quite likely that a variety of work activities were undertaken within this structure. Most washing and soapmaking activities took place in the yard adjacent to the building.

All of the archaeological research at Riverside was conducted within the context of public archaeology, where the general public had the opportunity to participate in the research through a variety of public events and a field trip program for school children. Archaeology has become a central part of Riverside's identity as a museum, which has helped make the site a symbol of pride for the surrounding community (Stahlgren and Stottman 2007).

The enslavement of African Americans was the focus of an archaeological investigation of slave houses at another well-known Louisville area plantation, Oxmoor

(15Jf647) (Young 1997). This study demonstrated that the site has the potential to add to the large body of data on plantations and slavery in the Louisville area.

Historic archaeological research associated with this cultural landscape also has been conducted at farmsteads. The farmsteads of the wealthy, as well as the emerging middle class of the mid- to late nineteenth century, have been the subject of historic archaeological research in the Louisville area. Extensive surveys were conducted at the Stony Brook house (15Jf676) (Stallings and Ross-Stallings 1999) and at Romara Place (15Jf709) (Stottman 2004), and limited excavations were conducted at a slave cabin at the Vulcan Rudy House (15Jf685) (Stottman 2001). Excavation of the Conrad/Dravo farmstead (15Jf676) focused on the lives of slaves owned by a middle class farmer and potter (Bader 1997). This farmstead was the home of Valentine Conrad, a redware potter in the small community of Jeffersontown (Bader 1997). The highly decorative redware ceramics and wasters recovered from this site demonstrate that highly styled redwares more common at Atlantic coast sites were produced and sold in Kentucky during the early nineteenth century. These investigations revealed much about the structure and spatial layout of wealthy and middle class farmsteads, which appear to have replicated their larger plantation counterparts. They likely represent the demise of the plantation system in the area, as plantations were divided up into individual farmsteads for heirs after the 1850s.

At the Johnson Bates Farmstead (15Jf538), an extensive investigation of several outbuildings was conducted (O'Malley 1987a). This work focused on the lives and consumption patterns of middle class farmers who lived on the periphery of a large city. Another rural farmstead house that has been investigated is the Villier site (15Jf110) in Jefferson County (Robinson and Smith 1979). Excavation of this site documented several features, including a cistern, a well, and two trash pits, and resulted in the recovery of a large artifact assemblage.

Rural residences, such the Hall-Standiford site (15Jf571), a late nineteenth century tenant house located on the property of Railroad magnet E. D. Standiford, have been examined archaeologically in the Louisville area (Stottman et al. 1992). Examination of this site provided important information on the lives of tenant families that were often part of large Postbellum farms owned by prominent businessmen. Analysis of the recovered artifacts suggested that tenant families were relatively poor compared to others living in the Louisville area.

An extensive survey of the Walton House (15Jf696), an early twentieth century suburban residence in the community of Anchorage, contributed to research on early twentieth century technological changes and suburban developments that took place along Jefferson County's interurban rail lines (Stottman et al. 2004).

Another major thrust of historical archaeological research in Louisville was the identification of historical archaeological sites located within the city park system (Granger 1983, 1984a; Stottman and Granger 1992). This program identified a variety of archaeological resources preserved within Louisville's urban parks, including George Rogers Clark Park, the location of Mulberry Hill, the Clark family home; Eva Bandman Park, where the remains of an urban houselot were found; and Thurston Park, the location of the Point Neighborhood (15Jf592-599). None of the resources identified were

assigned archaeological site numbers at the time, but the projects demonstrated that Louisville's urban environment had the potential for archaeological research, as several of the parks (e.g., the Point Neighborhood) later became the subject of more extensive archaeological excavations (see below).

Urban archaeology projects conducted in Louisville have been undertaken at a variety of sites, such as residential sites and neighborhoods, commercial districts, industrial sites, and religious sites. During the 1980s, initial attempts at urban archaeology suggested that Louisville's central commercial district had a low potential to contain intact archaeological deposits. These projects included limited excavations and monitoring at the Galleria, Louisville Science Museum, and the Jefferson County Court House (Granger 1983; Otto and Granger 1982). Based on this work, it was thought that most evidence of Louisville's earliest settlement and waterfront/commercial district had been destroyed by years of development. Extensive excavation of the Louisville Convention Center site (15Jf646) in 1995 and more limited excavation of the Muhammad Ali Center site (15Jf697) in 2003, however, have shown that in some areas, intact significant historic features are preserved below considerable demolition debris and overburden (Bader 2003; Stottman 1995a, 1998, 2000a).

Three residential lots that contained brick and wood-lined privies and a cesspool feature were examined at the Convention Center site (Stottman 1995a, 2000a). Analysis of the artifacts discarded by the residents of three different households shows that their historically documented economic status match the index values of their respective ceramics. Faunal and botanical remains also point to economic disparity among these three households, such as the lower class preference for pork and wild game compared to the middle class household preference for beef. Chicken and other fowl were eaten in large quantities by all late nineteenth century households, and the presence of purple cherry and tomato demonstrates the increasing popularity of these plants.

There were, however, some inconsistencies in the Convention Center data. For instance, the wealthiest household had relatively low ceramic index values compared to other wealthy household index values in Kentucky and nationally. Also, the lower class households had purchased some upper class type items, such as teawares. The middle class household preferred the latest fashion in ceramics, while the wealthier household did not. These inconsistencies demonstrate some of the problems with economic scaling and indicate that a variety of factors need to be considered when interpreting economic indexes, including curated dishes, household make-up, and personal preference. Also, increased access to goods could make some high status items more available to lower classes through the sale of damaged goods (scratch and dent). The data from the Convention Center site led to a better understanding of consumerism in urban areas, where a variety of factors need to be considered beyond economic capabilities. Residents of cities likely had better access to goods and to a greater variety of markets, such as cast-off dishes from wholesalers, than those living in more rural areas. As such, economic indices may make them appear to have had a higher standard of living than they actually did. Recognition of differences that the urban and rural poor had in regard to access to goods has the potential to contribute to regional and interregional studies of consumer patterns.

At the Muhammad Ali Center site (15Jf697), several early wood-lined privies and a brick-lined privy associated with a mid- to late nineteenth century wholesale pharmacy were found (Bader 2003). Data from the pharmacy privy provided insights into Louisville's prominence as a regional wholesale drug supplier during the late nineteenth to early twentieth century. Analysis of whole bottles recovered from the privy documented the variety and quantity of pharmaceuticals produced by the company. Coupled with the discovery of an original formulary book from the company, the bottle assemblage provides a glimpse at the types of treatments that drug companies marketed to the public for the wide range of ailments that inflicted nineteenth-century America. The archival and archaeological data also show how the wholesale drug distribution system worked, with regional companies, like the Robinson Pharmacy, distributing ingredients to local druggists who used formulary books to make the drugs. In some cases, wholesale druggists produced specific patented products, as evidenced by some bottles recovered from the Robinson privy.

The archaeological investigations of Louisville's historic neighborhoods have focused on understanding residential and commercial lots (McBride 1993; Stottman 1995b; Stottman and Granger 1993; Stottman and Watts-Roy 1995). A neighborhood scale of analysis provided data on a cross-section of Louisville's nineteenth century population with regards to a variety of research topics, including sanitation, socio-economic status, consumerism, race, ethnicity, and health. Research at 15 lots in Highland Park (15Jf607-623, a late nineteenth to early twentieth century neighborhood, found distinct racial and class differences with respect to privy vault construction (Stottman 1995b; Stottman and Granger 1993). The construction of privy vaults in the Highland Park neighborhood was unregulated, which led to a high degree of variability. Vaults identified in the African-American section of the neighborhood were poorly constructed, shallower, and typically made with salvaged materials, while those constructed in the white section tended to be better constructed, deeper, and conformed more to the standards of construction used within the city limits of Louisville. This study points to the presence of distinct socioeconomic differences based on race during the late nineteenth to earl twentieth century, a time of intense racial segregation in Louisville (Stottman 1995b).

Research at 10 lots in Russell (15Jf600-606 and 15Jf624-626), a mid-nineteenth to early twentieth century neighborhood, examined issues related to identity through religious motifs, ethnic markers, and socioeconomic status (McBride 1993a; Stottman and Watts-Roy 1995). Excavation of a lot owned by an Irish Catholic widow produced artifacts indicative of her background, including items with religious motifs. A lot that contained a drug store owned by German immigrants produced many ethnic related artifacts, such as German porcelain and decorative motifs. It also yielded a set of a set of dishes featuring a swastika. These ceramics were found in a 1930s context and it is possible that they were discarded since the meaning of the swastika and its desirability for consumers, particularly German immigrants, changed during the course of World War II. Socioeconomic status was examined by comparing the material remains of a wealthy widow with those associated with a middle-class family. The disparity between theses two families reflected in the historic documents was much greater than that indicated by the archaeological record. It is possible that that the middle-class family was able to live beyond their economic capability by renting small houses on the back of their lot to

African-Americans (Stottman and Watts-Roy 1995). Numerous beverage and medicine bottles recovered from the project area reflected late nineteenth to early twentieth century changes in consumer demand from local to national brands.

Data from privies excavated at the Convention Center, Highland Park, and Russell was used to examine sanitation through privy vault deposition, vault architecture, and associated artifacts (Stottman 1996b, 2000b). It was found that privies became the place to not only dispose of waste, but also any unwanted items. Other privy deposits, such as extensive cinder and ash layers that date to the early 1900s, are related to broader sanitation initiatives by the city of Louisville. These deposits were likely related to Louisville's trash separation policy, which left the disposal of cinder and ash up to the property owner. Abandoned privies and cisterns became convenient places to dispose of these materials.

Privy vault architecture was examined in the context of sanitary perceptions of the time and the extent to which it conformed to laws that regulated privy construction. It was found that Louisville's privy construction laws were based on an out of sight-out of mind philosophy. The archaeological record showed that most property owners conformed to these laws by constructing their privies to the city's specifications. It also showed that some privy vault builders took liberties with the law, such as with the requirement to brick the sides and bottom of the vault, as some builders used loose bonding and no floor, which allowed privy contents to wash into the water table. As would be expected, residents of communities lying outside of the Louisville's jurisdiction were not required to construct privies that conformed to these specifications. But surprisingly, since they were not as deep, these privies were often more sanitary than those constructed within the Louisville city limits. Artifacts recovered from privies throughout Jefferson County reflected the focus on sanitation at the time, which emphasized the color white. This corresponded to the rise in popularity of undecorated white granite at the end of the nineteenth century.

Eight city blocks were examined in the Point Neighborhood (15Jf592-599), which was occupied from the late 1700s to late 1800s. Extensive investigation of this neighborhood documented well-preserved residential, commercial, and industrial sites (Esarey 1992; McKelway 1995). A wide range of features were identified, including privies, wells, cisterns, foundations, walkways, fence posts, and trash pits. Limited excavations also were conducted at a single house lot in Parkland (15Jf572), a late nineteenth to early twentieth century neighborhood located in southern Louisville (Stottman et al. 1991). A privy and a cistern were investigated in association with this project, and a large amount of artifacts were recovered. These artifacts represent three distinct periods of the lot's history: its development (1870s to 1910s); main period of occupation (1910s to 1950s); and its demolition (late 1900s).

Other urban communities studied archaeologically included former river towns that have since become neighborhoods of Louisville. A survey of the Portland Wharf site (15Jf418) encompassed six city blocks and the wharf from the original town of Portland, founded in 1811 (Stottman and Prybylski 2004). The survey documented intact house foundations, privies, cisterns, roads, and sidewalks. Across the Portland Canal from Portland, excavations conducted at the former town of Shippingport (15Jf702),

established in 1806, documented building foundations, privies, cisterns, and trash middens dating from the early to late nineteenth century (Bader and French 2004).

Other types of properties that have been investigated in Louisville include industrial, religious, commercial and military sites, and cemeteries. Excavation of the Thomas Pottery (15Jf599) (Esarey 1992; McKelway 1995) and the Lewis Pottery (15Jf658) (Stradling et al. 1998; Stradling and Stradling 2001) have provided a glimpse of Louisville's nineteenth-century pottery industry. On the outskirts of Louisville, the excavation of Ward's Mill contributed to our understanding of core/periphery relationships within the local economy (Granger 1984a). McBride et al. (1988) conducted survey and background research on Fisher's Mill (15Jf551), a nineteenth and early-twentieth century grist mill in Jefferson County.

Extensive excavations conducted underneath the Cathedral of the Assumption in central Louisville produced important information about life at the church in the mid-nineteenth century (Mansberger 1990, 1995). Excavations at the Old Stone Bank (15Bu537), an early nineteenth century bank building in the nearby town of Shepherdsville, identified intact deposits from the town's early settlement (Stottman 1999a).

Historic archaeological research was conducted at Fort Duffield (15Hd465), a Civil War fortification located near the community of Westpoint, just southwest of Louisville in Hardin County (O'Malley 1999b). This study examined the earthworks and soldier's huts, which were part of a series of fortifications built by the Union to defend Louisville. Investigations undertake by the University of Louisville at Greenwood, Eastern, and Western cemeteries provided important information about cemetery layout, operations, and the reuse of graves (DiBlasi 1995; DiBlasi and Urban 1993).

A considerable amount of historical archaeological research has been conducted at the Fort Knox Military Reservation located just southwest of Louisville in Hardin and Meade Counties. Most of the work at Fort Knox has focused on identifying sites at the survey level. However, several more intensive research projects have been conducted. A documentary and archaeological investigation of the former town of Pitts Point, founded in the 1830s, represents one of the few attempts to examine an entire nineteenth century rural town (O'Malley 1996a). A number of lots were investigated, which included some above-ground structural remains.

Significant research also has been conducted at mill sites located within the boundaries of Fort Knox. This research included an extensive review of the documentary record and an archaeological survey of the milling industry (Holmberg 1991; O'Malley 1996b). Much of this research focused on Garnet's Mill (15Md185) and Owenton's Mill (15Md164) (see also Wheaton 1987 for limited testing at Garnettsville). This research provided a detailed summary of the milling industry in the region, including grist, saw, and textile mills.

NORTHERN KENTUCKY

The number of historical archaeological sites identified in the Covington-Newport and Northern Kentucky area has increased greatly over the last 15 years due to cultural resource management projects associated with airport expansion and road improvements. While a large number of historical sites have been identified, few have been extensively investigated and only a few projects have generated significant data to address research questions. Historical archaeological projects that have been conducted in the Covington-Newport area primarily focused on rural farmsteads and plantations, Civil War fortifications and urban centers.

Rural habitation sites that have been excavated in this region include the William Rouse site (15Be499), a mid-nineteenth century farmstead with a log house (Breetzke and Warminiski 2001); Site 15Cp56, an early to mid nineteenth century log house; the Orth Family farmstead (15Cp57), a late nineteenth to early twentieth century farmstead (Purtill et al. 2001; Weed et al. 2005); Sites 15Be310 and 15BE311, mid-nineteenth century African-American house sites (Edging 1987); and the Dinsmore Homestead (15Be345), a nineteenth century farmstead (McBride 1991; McBride and McBride 1994). The latter contains the remains of early to late nineteenth century features, midden, and a tenant house (McBride 1991; McBride and McBride 1994). Investigation of these sites has contributed to the growing body of data on the development of farmsteads and rural residences from the early nineteenth to early twentieth centuries. In particular, Site 15Cp56, one of the few early nineteenth century residences investigated in the Northern Kentucky area, demonstrates that many of these sites are rather ephemeral archaeologically and thus difficult to locate.

Maplewood (15Be483) is the ca. 1850 plantation of Archibald Gaines (McBride and Stottman 2007). Maplewood has gained some notoriety because of its association with the Margaret Garner story, made famous in the book *Beloved* by Toni Morrison and subsequent motion picture. Garner was likely a slave at Maplewood prior to her escape and subsequent capture in Cincinnati. Investigation of this site documented features associated with Antebellum domestic outbuildings, possibly slave houses and a kitchen, and foundations of the Gaines house.

Several projects have focused on the system of forts and batteries that were constructed to protect Cincinnati during the Civil War. The first investigation of these fortifications was conducted by the Behringer-Crawford Museum, which examined Civil War earthworks in Covington's Devou Park (Harper et al. 1981). This study was designed to collect information on site structure and verify information from period diaries and other sources about site use and a nearby military road. In 1994, the museum conducted an extensive survey of the entire fortification system, examining 28 fort and battery locations. Of these, nine contained intact archaeological remains, such as earthworks, rifle trenches, and powder magazines that warranted the assignment of a site number. They include Battery Coombs (15Ke116), Battery Bates (15Ke102), Battery Perry (15Ke123), Battery Hooper (15Ke120), Battery Hatch (15Ke124), McCrae Battery (15Ke122), Fort Whittlesey (15Cp55), Battery Holt (15Cp49), and Battery Shaler

(15Cp50) (Kreinbrink 1981, 1996). Additional work conducted at Battery Hooper in 2005 focused on excavation of the powder magazine (Kreinbrink 2006).

Several urban archaeological projects have been conducted in the Covington-Newport area. Limited excavations at the site of the U.S. Courthouse in Covington documented several features, such as wells and cisterns (Joseph and Yallop 1998). Kreinbrink (1993) conducted limited excavations at the Kenton County Courthouse in Independence, Kentucky. A foundation and cellar and midden deposits were located.

In 1986, investigation of industrial, commercial, and residential lots within a three-block area adjacent to the Ohio River resulted in the excavation of a large number of features, and generated important information on the development of the Queensgate area of Covington (Genheimer 1987). The primary focus of this study was use of this neighborhood from the late 1820s to the mid-twentieth century. Of the 80 features documented at this site, at least 26 were classified as residential or commercial privies or cisterns. Others consisted of industrial features associated with the Covington Pottery and Hemingray Glass factory. Analysis of the recovered botanical (Gremillion 1987) and faunal (Murphy 1987a) remains indicated that a wide variety of species had been utilized by the inhabitants of this area, while remains collected from the industrial components generated information on glass and ceramic production in northern Kentucky.

To the south of the Queensgate research area, Genheimer (1993) excavated a mid-nineteenth century upper middle class houselot (118 East 11th Street). A stone-lined privy that contained deposits dating from 1850-1864 was documented at this site.

The data collected from these projects was used to examine several urban research topics, such as privy depositional patterns, sanitation, consumerism, and pottery manufacturing (Genheimer 1988b, 1995, 2000, 2003). As part of this research, Genheimer (1995) used artifact functional patterning to examine privy vault deposition. In northern Kentucky, he found that privy deposits, as with other sealed refuse deposits or urban domestic artifact middens, were dominated by kitchen-related artifacts. However, the Ohio Valley Urban Privy Pattern exhibited significantly lower percentages of architecture group artifacts than most other domestic contexts. While the observed patterns are closely tied to local context, the methodology employed should be applicable in other urban settings. Genheimer (2000) also examined consumerism on a city scale of analysis rather than on an individual site or neighborhood scale of analysis. Through an examination of the geographical origin of artifacts recovered from privies, such as bottles and ceramic vessels, he attempted to understand Covington's historical identity as a southern city with northern consumption habits.

There have not been many cemetery projects in this section. Bybee (2003a) excavated a cemetery in Campbell County. Though the skeletal remains from the 15 interments were too fragmentary to contribute to our understanding of nineteenth century health, analysis of the coffin hardware and personal items helped date the burials to ca. 1830 to 1900. The layout of this cemetery conforms to the typical Upland South folk pattern. Aside from the work mentioned above in Covington, little industrial archaeology has been conducted. Kreinbrink (1998) has provided an overview of the rise and decline of the mill industry, which was very important in the rural and regional economy.

BLUEGRASS

INNER BLUEGRASS

Pioneer stations are an important site type in this section, since the Bluegrass Cultural Landscape was the locus of the earliest Euro-American settlement in Kentucky. These types of sites are somewhat more common the Inner Bluegrass Section than the Outer Bluegrass Section. O'Malley's (1985, 1987b) study of historic stations was one of the first to systematically examine these types of sites. While they are generally individual residences, they also consist of clusters of households who banded together for protection from Native American raids. Through extensive documentary research, she identified 158 stations, and conducted fieldwork at 61 of them. Based on the results of this study, O'Malley (1987b) provided detailed description of the location, structure, size, and composition of stations, and assigned them to chronological periods that are similar to Hudson's (1969) colonization stages. Since this publication, O'Malley has undertaken more intensive investigations at Todd's Station (15Fa167) and Boone's Station (15Fa218) in Fayette County; Grant's Station (15Bb76) in Bourbon County; and at McGary's Station (15Me48) in Mercer County (O'Malley 1999a, 2002b; O'Malley and Hudson 1993). She also developed an historic context for (O'Malley 2002a, 2006) for McConnell Springs (15Fa237) another important early settlement site in Lexington. This work has provided additional information on the spatial organization of stations and resulted in the recovery of frontier period artifacts.

Station or fort sites that have been more intensively investigated are Logan's Fort (15Lo168), Fort Boonesborough (15Ma123), and Constant's Station (15Ck461). Limited excavations at Logan's Fort (McBride and McBride 2000a) in Lincoln County resulted in the recovery of late eighteenth century artifacts and documentation of a cellar feature. Recovery of the skeletal remains of William Hudson helped verify that the cellar was located within the fort. Documentary accounts of the attack on the fort detail the death of Hudson. He had been scalped (cut marks were observed on his skull), and his body buried under the floor of one of the fort cabins.

Fort Boonesborough, which is located in Madison County, is probably the most famous of all Kentucky pioneer sites. Supplemented by detailed archival research, a survey and limited excavations were conducted during the fall of 1987 (O'Malley 1989a) in an effort to find the remains of the fort. This investigation resulted in the collection of eighteenth century artifacts and the identification of several features, including large postholes, at least one limestone chimney base, and a hearth containing a great deal of faunal remains. Several other historical archaeological sites associated with the settlement at Boonesborough, such as scattered residences, a tobacco barn, a stagecoach stop, a historic station, a sulphur well, and a freshwater spring, also were investigated during this project (O'Malley 1989a).

Kreinbrink has conducted excavations at a site in Clark County that is most likely Constant's Station (Hutchinson and Kreinbrink 2005). Late eighteenth century artifacts were recovered and archaeological remains include piers and a chimney base from the

main house. This matches historical accounts that the house was on piers, since during an attack by Native Americans, some of the settlers reached safety only by coming into the house through an opening in the floor.

Farmsteads and plantation sites are the single most common category of sites investigated in this section, as they are in most sections. An unusually large amount of work has been conducted in association with the widening of U.S. 27/68 (Paris Pike) between Lexington and Paris, Kentucky, and other highway projects. Since so many projects have been conducted, this discussion will be arranged by county.

Beginning in northern Bourbon County, a number of historic farmsteads or farm residences were investigated in association with the realignment of U.S. 68 north of Paris. Of these, Neal's Old House (15Bb131), Current's Inn (15Bb133), T. Champ's Inn (15Bb137), and Site 15Bb132 contained intact deposits with beginning dates ranging from the 1810s to 1830s (Bundy 2006). The T. Champ's Inn site, in particular, yielded an especially rich artifact assemblage, with areas of stratified deposits, and several early nineteenth century features.

Not far south of Paris, along Paris Pike, the Wright House (15Bb127) site was investigated as part of the widening and realignment of this historic road (Barber 2005). The extensive changes to the 1840s house that took place in the 1880s were linked with an important household event: the remarriage of the owner at that time. The project generated information concerning several outbuildings, walkways, and activity areas (attesting to the heavy use of the yard), and recovered a rich assemblage of domestic artifacts and faunal remains. The high proportion of flatware ceramic vessels corresponded with the high proportion of high value meat cuts, with little wild game present. The botanical assemblage was especially interesting, showing a high level of diversity and the presence of many fruits, herbs and spices, and ornamentals.

Further south along Paris Pike was the site of William McConnell's Homestead (15Bb75). This site was an early homestead, rather than a "station" in any defensive sense, even though it may have been called this (Day and Clay 2002; Day 2007). The excavations focused on the main house, and comparisons were made to the architecture of several standing structures. The interior layout of this house compared favorably to those located in southeast Pennsylvania and to those with northern Irish architecture influences. Outbuilding foundations also were investigated. The artifact assemblage was most similar to domestic sites, not to tavern sites, which typically have higher ratios of smoking pipes and drinking glasses. The dominance of pig bones in the faunal assemblage was related to the Upland South dietary pattern. Surprisingly, deer was not present within the wild game component of the faunal assemblage. The ceramic analysis indicated a fairly high status assemblage, with many flatware vessels, adherence to the latest trends, and high market participation. Overall, this site contributes to our understanding of the transition from frontier settlement to mid-nineteenth century middle class farm life.

Ready access to consumer goods and active participation in commercial consumer markets also was documented at the Martin House (15Ck478). This site is located within the Lower Howard's Creek Nature Preserve in Clark County, and is probably more remote and removed from the transportation routes today than it was when settled and

tied in to river-oriented commerce and transportation. The house is part of a complex of early industrial sites (mill and bourbon factory) that were surveyed (Thomason and Barber 2006), but only the house received more intensive investigations (Rotman and Thomason 2003). The faunal assemblage showed a substantial contribution from wild game compared to the Wright site, but as with many sites, pork was a strong contributor to the diet.

The Armstrong Farmstead (15Fa185) contained remains of at least two houses, a spring house, and several midden areas (Barber 2005). The layout of the domestic complex was unusual, with two houses that may have overlapped in time. The house occupied by the site owners may have been the smaller of the two structures. Detailed documentary research revealed complex household composition, with boarders present at some times. The family also owned slaves. While the slaves may have occupied the second structure, it is also possible that the slave quarters were located outside the project area. Analysis of the materials recovered from a trash pit and the midden situated between the two structures pointed to a variety of domestic activities including children's play, sewing, and smoking. The sewing related artifacts were especially interesting since the documentary research indicated that Mary Armstrong was a tailor. This area also may have contained some sort of shed building, though no definite structural remains were located.

The documentary research on the Armstrong Farmstead also helped illuminate the farming strategy of the family, which focused more on raising swine than many neighboring farms that focused on cattle. This site, like all the others investigated along Paris Pike, showed the influence of being on a major highway, with ready market access to consumer goods. Interestingly, there was little difference in the material culture found at the two structures. Much of the family meat was likely purchased, as suggested by analysis of the faunal remains. Most of the ceramic forms found were flatware, which also suggests preparation of cuts, such as roasts or steaks, in contrasts to stews or soups. As has been documented at several other sites, pork accounted for a larger portion of the diet than beef. The presence of corn, wheat, oats, and rye in the botanical assemblage points to local processing versus purchase of milled flours (Bonzani 2005). The botanical assemblage also contained Old World weeds (Bonzani 2005).

Another site examined in advance of a highway project in Fayette County is Site 15Fa228, which was located along U.S. 25 north of Lexington (Picklesimer et al. 2004). This site, which may be associated with the James McNeil family in the 1830s, was found to contain midden deposits and foundation remains that may date from the early nineteenth century. Ceramics, nails, and other artifacts yielded a mean date of 1834). A similarly short occupation was documented at Site 15Fa280, a domestic residence that may have been occupied by the J. H. Williams family in the 1840s to 1870s (Wampler et al. 2005).

Late nineteenth to early twentieth century rural farmstead deposits also were documented at the Barker site (15Fa220) (O'Malley and Hudson 1993). Another domestic site to receive limited excavation is the Degaris site (15Sc154) in Scott County (Sharp and Jefferies 1986).

Limited investigation of the Keene family estate (15Fa287) in Fayette County documented midden deposits around the Keene house and an artifact concentration spanning the early nineteenth to twentieth century. The latter contained a large amount of kitchen artifacts dating from the 1820s to 1860s (Madsen et al. 2004). Work also was conducted at the Elijah Foley House (15Fa231), a nineteenth century historic farm residence situated on the southern end of Fayette County (Stottman and Hockensmith 1998).

Several farmsteads have been excavated in Franklin County. The Parrent site (15Fr138) is a mid- to late nineteenth century site occupied by Charles Parrent (likely a schoolteacher) and his family. Limited excavation documented intact midden but no features, such as foundations, trash pits, or privies. Analysis of the domestic artifacts suggested a fairly frugal household economy (Stallings 2003). Yet the presence of more expensive tea wares, suggested participation in the genteel dining and tea-taking rituals popular in the nineteenth century.

Much more extensive excavations were conducted at the Lemuel Taylor farmstead (15Fr96) north of Frankfort (Andrews 1997). The site dates from the 1870s to the 1930s. The farmstead consisted of a house with a barn/blacksmith shop to the north and a stock barn to the south. Analysis of the artifacts associated with the shop pointed to general blacksmithing activities, such as tool repair, horseshoeing, wagon repair, tinkering, and the manufacturing of architectural hardware. The hilly nature of the farm was mitigated by a complex system of rock walls, dams and terraces, which helped create more usable land. Like the assemblage from the Parrent site, the artifact assemblage from the Taylor farmstead is suggestive of frugality and unpretentiousness. It was composed mostly of undecorated ceramics, with no sets represented, and a very low proportion of serving vessels (which typically correspond to higher status assemblages). Glass vessels were scarce, with few fancy tablewares and a low number of bottles (typically frequent on late nineteenth century sites). The faunal assemblage was composed largely of cheaper cuts of pork, supplemented by wild game. In contrast to the artifact assemblage, the agricultural census indicated that the Taylors' productivity was higher than most neighboring farms.

Investigation of the Joel Frazer house (15Hr42) in Harrison County documented that it was occupied from ca. 1815 to 1850, and was used as a hospital and for storage during the Civil War (Allgood 2004; Mabelitini 2008). Intact remains of the foundation of a six-room brick house, two cellars, and midden deposits were found at this site. Based on changes in ceramic decorative styles and types, Frazer's socioeconomic fortunes improved from the early to mid-nineteenth century. The earlier deposits contained less expensive wares, such as undecorated creamware. Most of the vessels were shell-edge decorated wares, which were the cheapest decorative tableware for most of the nineteenth century. The mid-nineteenth century assemblage exhibited an overall increase in vessel forms. This assemblage also contained more expensive wares, such as matched sets of overglaze painted English porcelain teawares and tablewares. The domestic occupation of the house ended between 1848 and 1850 when Dr. Frazer purchased the much fancier Joel Frazer house that still stands nearby. The house later functioned as the Union Army hospital associated with Camp Frazer from December 2, 1861 to July 17, 1862, when it was burned by Confederate General John Hunt Morgan's

troops during the First Battle of Cynthiana. A portion of the house may have remained standing and was used for storage by the Quartermaster of the 45th Ohio Volunteer Infantry, who burned it on September 2, 1862).

The William Whitley House (15Li55) in Lincoln County is an important early farm residence. Investigations conducted at this site have documented a number of architectural and landscape features, such as scaffolding posts and a cart path, and an ashy midden (O'Malley 2000; Linebaugh and Loughlin 2003; Winter and Henry 2006). The latter likely dates from the late nineteenth century and points to use of the basement fireplace at this time. Units excavated below the floor of the gift shop identified intact midden deposits from the 1830s.

Also located in Lincoln County, the Vardeman House (15Li188) was a late eighteenth to mid-nineteenth century farmstead (Madsen et al. 2005; Sussenbach 2000). The site contained an intact sheet midden, subsurface features (many posts and seven trash pits) associated with the John, Morgan, and Jeremiah Vardeman families. Even though no structural features associated with the main house were located, the distribution or artifacts (especially window glass and nails) and soil chemistry, along with some fence posts, was used to hypothesize the house's location, its eastern orientation, and the boundaries of the house yard. The material culture assemblage, combined with documentary data, confirmed the family's high socio-economic position within Lincoln County. Analysis of the ceramics highlighted their ability to acquire locally produced and imported commercial goods, which reflected their participation in the Georgian consumer movement (Deetz 1977). The high percentage of pig bones in the site faunal assemblage was related to the Upland South Pattern.

One of the more famous plantations in Fayette County is Ashland (15Fa206), which was owned by Henry Clay. Originally over 500 acres in size, today it consists of 19 acres managed and interpreted by the Henry Clay Memorial Foundation. The site includes the main house and several outbuildings. Surveys of this property in the early 1990s and early 2000s documented rich midden deposits in the back yard, the original ground surface and brick skirting around the front of the house, and a limestone-lined below-ground storage structure, much like a nearby standing ice house (McBride and McBride 1991b; McBride and Miller 2003). The remains of several nineteenth century barns also were documented. Two horse burials (one pre-term and the other about one year old at the time of death) were associated with one of the barns. The location of the barns not far from the house, and to the side and front of the house, is unusual. The lack of outbuildings located to the rear of the house is very interesting and unusual compared to typical plantations in the South, and may relate to Henry Clay's ideas about English landscapes. Family correspondence includes mention that the area behind the house was not to be used for farming; it was seen as a pleasure ground.

Among the features excavated at this site were two privies: one was a 16 foot deep privy vault with a standing brick privy structure; the other was an earlier stone-lined privy that was abandoned when the main house was rebuilt in the 1850s. The ceramic assemblage from the later privy included many European porcelains and a wide range of specialized serving vessels that are typically related to large dinners and social events, and very formalized dining. Analysis of a sample of these artifacts indicated that the assemblage contained a variety of expensive ceramics (ceramic cost index values of 3.49

or 3.29) for the earliest levels (McBride 1993b; McBride and Esarey 1995). The stone-lined privy vault contained a very dense assemblage of artifacts that may relate to housecleaning in preparation for the rebuilding of the house, or the turnover of ownership to Henry Clay's son James Brown Clay following Henry Clay's death in 1852. Like the assemblage from the later privy, the assemblage from this privy is composed of very expensive ceramics, glassware, and personal artifacts (McBride and Miller 2003).

The storage tank and repair access chamber of the Springfield gas works in the front yard was documented in the late 1990s (Linebaugh et al. 2000; O'Malley et al. 1999). Excavation of this feature and historical research provided insight into the introduction of gas lighting, as Ashland was one of the first houses in Lexington to have this modern convenience.

Henry Clay and his heirs owned between 50 and 60 slaves, and the 1860 slave census indicated Ashland included six slave houses. Their location had not been known until the archaeological survey located remains near the present formal garden. Only a small portion of these houses have survived due to impacts from installation of this garden in the 1950s. Although no intact foundation walls or piers have survived, several shallow storage cellars, such as were common underneath slave structures, have been excavated and a wide range of artifacts recovered (McBride and Miller 2003).

Waveland (15Fa177) is another mid-nineteenth century plantation site that has been documented in Fayette County. The project resulted in the excavation of several trash pits and a midden area located between the slave quarters and the smokehouse. This midden contained a large amount dietary remains, especially faunal remains. The predominance of ribs and pig knuckles suggests that the slaves consumed poorer cuts of meat (Pollack and Hockensmith 1985; Walters 1985). A comparative analysis of the ceramics from Waveland and Liberty Hall (see below) resulted in a lower status assignment for the Waveland assemblage, which was largely recovered from the vicinity of the slave quarters (Henderson 1985).

Another high-status nineteenth century site, Chaumiere Du Prairie (Fayette County), was excavated by Livingston (1983a). These excavations located several early nineteenth century structures and resulted in a collection of over 10,000 artifacts. The lavish consumption recorded historically for the residents of this site makes this collection a particularly important one.

Kinkeadtown (15Fa214) was a Postbellum neighborhood in Lexington developed by George Kinkead in 1868 for African-American families (O'Malley 1990a, 1996c, 2003). In its first decades, the neighborhood was occupied by working class families who typically owned their homes. As Lexington grew, this semi-rural neighborhood became fully urbanized, many of the lots were subdivided, and more houses were occupied as rentals. Excavation of 12 house lots focused on backyard middens and features, such as trash pits and privies. The high number of decorated ceramics, with some evidence of matching sets, and large quantity of fancier glasswares, was interpreted as reflecting the household aspirations. The acquisition of these goods by working class Kinkeadtown households indicates that they strove to obtain many of the same things as their middle class neighbors.

Another Postbellum Lexington neighborhood that has received archaeological attention is Davis Bottoms (15Fa284) (Haney 2004; Faberson 2006). Although the neighborhood is predominantly white today, its 1867 roots indicate that it originated as a largely African-American neighborhood. Documentary research shows a similar trend to that documented at Kinkeadtown, with a shift away from home ownership to house rental by the early twentieth century.

Other projects undertaken in Lexington include the excavation of six residential lots that were occupied from the 1790s to the mid-twentieth century (K. McBride and W. S. McBride 1989; O'Malley 1987c; Rossen 1992). The six lots were private residences for a variety of persons, including a free black woman, local craftsmen and their families, and physicians and their families in the late eighteenth and nineteenth century. By the twentieth century, these properties had become boarding houses and office buildings.

Only a few blocks away from these urban lots was the 17 acre urban estate of U.S. Senator John Pope (15Fa205). In 1810, Pope commissioned architect Benjamin Henry Latrobe, often called the first professional architect of the U.S., to design his Lexington home. Latrobe designed many famous buildings, including the U.S. Capitol. The Pope Villa is one of only three Latrobe residences extant in the U.S. Archaeological investigations undertaken at this site generated information on how the original portico was constructed (McBride 1992a; McBride and McBride 1991a). It also provided important information about many other architectural aspects of the house, and documented a sequence of changes at the Villa. One of the more interesting findings was how, over time, the Pope Villa was altered to resemble more typical Kentucky houses, and to move away from Pope's classical influenced design. For example, stew pots and a large bake oven shown in Latrobe's plans were not built. Instead, the house was initially fitted with a large cooking fireplace, and eventually a detached kitchen.

Another urban residence investigated within this section is Liberty Hall (15Fr369), a house museum located in downtown Frankfort (Franklin County). Investigation of Liberty Hall, built in 1796, yielded information on a number of outbuildings and architectural features, and resulted in the collection of over 31,000 artifacts (Fay 1983, 1986; Hockensmith 2007b).

Several public or institutional buildings have been investigated in Franklin and other counties in this section. Deiss's (1988) investigation of the Frankfort Public Square (15Fr140) resulted in the excavation of a late-eighteenth to mid-nineteenth century jail. The jail had been partly converted in the mid-nineteenth century to a privy. Over 34,000 artifacts were recovered, and they, along with the excavated features, were used to examine the changing scale and focus of this governmental site during the nineteenth and twentieth centuries. Another, but more limited investigation of a jail site in Frankfort, is DiBlasi's (1983) work at the Frankfort Workhouse (15Fr83), which was constructed on top of a portion of the Old Frankfort Cemetery (15Fr154) (see below).

Another institutional site investigated archaeologically is Bethel Academy (Jessamine County), a 1790s to 1820 school (Livingston 1983b). This research not only generated information about the structure of the building, including a nearby brick kiln thought to have been used to fire the bricks for the structure, but produced a large quantity of artifacts.

Commercial buildings investigated in this section include taverns and hotels. Higbee Tavern (15Fa222), is an early nineteenth-century tavern that was intensively investigated in southern Fayette County, not far from Lexington (Day 2004). The main tavern building and several outbuildings, including a possible slave quarter, were delineated, and several domestic features were recorded. The large archaeological assemblage provided insights into the cuisine consumed by tavern guests, tavern material culture, and tavern life. Among the more interesting findings, data indicated that while guests consumed a lot of pork, as was expected, they also ate a wide array of wild game. Moreover, based on the presence of many sewing artifacts, clothing repair may have been a service provided by taverns (Day 2004). Not surprisingly, the artifact assemblage contained a large number of smoking pipes and drinking vessels. Limited excavations also were conducted at the Young-Brown Hotel (15Bb128) in North Middleton, Bourbon County (Miller 2004), the Crab Orchard Hotel in Lincoln County (Miller and Henderson 2004), and the Russell Tavern (15Js144) in Jessamine County (Bybee 1998).

Shaker Village at Pleasant Hill (15Me55-59) is an important rural site in Kentucky that represents more of a complete community than a farm or plantation site. This settlement and South Union Shaker Village (see Pennyrile Section) represent the Shaker presence in Kentucky. The Pleasant Hill community, which was founded in 1805 and closed in 1923, was the third largest Shaker village in the United States, with a peak population near 500 in the mid-nineteenth century. Archaeological investigations of this community have included surveys of outlying fields and sections of the main village, and more complete excavation of several buildings. This work has shown that the main village contains a high density of building remains, but the midden deposits located near the major existing buildings have relatively low artifact densities. This is most likely due to the Shakers' emphasis on cleanliness and order (McBride 1995). This focus on order also can be seen in the way the village was laid out in rows of buildings that correspond to the cardinal directions, and in the manner that the Shakers built separate buildings for most activities or to house every species of farm animal.

This research also shed light on the Shakers' pioneering spirit. For example, a wash house (for laundry in the West Lot) contained a series of innovative features. The building was situated in such a way as to facilitate water flowing into it from a nearby spring, and out through a stone-lined drain. The presence of a "wash mill shed" likely represents the Shakers' attempts to develop labor-saving devices to ease the tedious process of washing clothes for large numbers of people (New England Shakers patented a mechanical commercial washing machine in 1858). The wash house also contained the bottom course of a series of "arches" or "furnaces" built around the central fireplace. These furnaces may be related to the use of the wash house as a sort of light industrial production center, where products such as candles, preserves, and perhaps smoking pipes were manufactured (McBride 1995). Archaeological research also relocated the remains of the oval fence that demarcated the outdoor worship area, Holy Sinai's Plain.

Several historic cemeteries have been investigated within the Inner Bluegrass Section. At the Eastern State Hospital site (15Fa289) in Lexington, 11 interments were recovered (Favret 2006). Of these, 10 individuals were buried in a mass grave and one person was in a single grave. They likely date from 1840 to 1869). Clothing items suggest that they were buried in personal clothing rather than institutional uniforms.

Skeletal analysis suggested that several had performed much physical labor, and one person had suffered from rickets. A high number of caries were evident in the teeth.

During investigations at the State Military Monument in the Frankfort Cemetery, five veterans of the Mexican-American War were relocated and exhumed (Stottman and Pollack 2006). The variety of coffin and casket types that were identified provided information about nineteenth century burial practices from the late 1840s to 1880s. Analysis of the human remains led to some insights into the lives of soldiers during the nineteenth century. For example, some of the soldiers dealt with multiple bouts of malnutrition and disease, and they undertook heavy labor.

The largest cemetery studies in the Bluegrass, and in the entire state, were conducted at the Old Frankfort Cemetery (15Fr154) in Franklin County (Favret 2005; Killoran et al. 2003; Miller 2007; Pollack and Killoran 2006; Wetzel 2007), and the Holmes-Vardeman-Stephenson Cemetery in Lincoln County (15Li106) (Linebaugh 2003; Linebaugh and Phillips 2001). Though there is a not a great deal of archival information on the Old Frankfort Cemetery, what records there are suggest that it was primarily used by poor and lower middle class Euro-Americans and African Americans as a neighborhood cemetery. Subsequent development of the cemetery area, beginning in the 1870s and continuing into the twentieth century, effectively removed it from the landscape and public memory. With little documentary data, coffin hardware and personal items found in the graves were key to its dating. Based on the artifacts recovered, the 242 interments documented at this site date from ca. 1815 to about 1860. Almost two-thirds of the individuals interred within this cemetery were of African American heritage and one-third were of Euro-American heritage.

While all of the individuals were interred in wooden boxes, intrasite differences were observed in the construction of the stone-lined vaults within which the boxes were placed, as well as coffin hardware and the types of artifacts interred with the dead. These differences reflect the socioeconomic status of these individuals within Frankfort. Within this cemetery, large limestone slabs were used to line about one-quarter of the graves. The use of stone ranged from just one or two slabs to a grave being completely lined and covered with stone. Sometimes the upper portion of the coffin was laid on stone or brick. Use of stone to create burial vaults reflects a greater investment of labor in the construction of the graves of some individuals, which may reflect that individual's socioeconomic status.

Socioeconomic differences also may be reflected by the presence of coffins that were lined with fabric, as evidenced by the presence of tacks; other coffin hardware, such as handles; and the recovery of jewelry, such as rings. Surprisingly, the use of tacks and the presence of a ring appears to have been more common among African-Americans than Euro-Americans, with two-thirds of the tacks and rings being recovered from African-American graves. Perhaps these individuals represent freed African-Americans who were somewhat better off than other African-Americans living in Frankfort.

Skeletal remains exhibited a number of pathologies, suggesting many of the persons lived under stressful conditions. Analysis of both teeth and skeletal remains suggest that many of the children were structurally small for their age, and had experienced periods of stress during their maturation.

The Holmes-Vardeman-Stephenson Cemetery was much smaller but still substantial; it served as a family cemetery from the 1830s to the 1940s. Analysis of the skeletal remains of 69 individuals revealed high infant and child mortality, relatively brief life duration and high death rates for women in childbearing years, shorter stature and higher dental caries for women, and a moderate prevalence of disease (Linebaugh 2003; Linebaugh and Phillips 2001).

Industrial sites have been investigated in this landscape. A pottery kiln was excavated by Genheimer (1988a) in Frankfort, where he documented the presence of a distinctive pumpkin-colored redware. In the mid 1980s, O'Malley (1986b, 1987a) investigated the early-nineteenth Ingels Pottery (15Bb102) in Bourbon County. James Ingels, who acquired Grant's Station in the late eighteenth century, operated a redware pottery from 1810 (or earlier) to at least 1820. O'Malley's study has provided important data on the types of vessels manufactured by local redware potters and the range of variation that might be expected.

Mills were a crucial component of nineteenth century communities, and provided a range of services beyond processing of raw materials: they were often community centers. Amos and O'Malley (1991) documented several mills in Fayette County. Early milling and other industrial sites have been documented in Lower Howard's Creek (15Ck478) in Clark County (Barber 2004; Thomason and Barber 2006). Janzen (1981) excavated five early nineteenth century mills at the Shaker Village of Pleasant Hill (15Me55–59) in Mercer County. Other mills documented in this section include the Kentucky Mills site (15Js115), a gristmill located in downtown Nicholasville (Stallings and Ross-Stallings 1992); Evans Mill (15Fa103) on Raven's Run in Fayette County (O'Malley 1999c); a very large commercial hemp mill in Frankfort, known as the Kentucky River Mills (15Fr120) (Day et al. 2000); and a grist and sawmilling complex in Franklin County (Hockensmith 1998b).

Gunpowder mills or factories are another type of processing mill investigated within the Inner Bluegrass Section. O'Malley (2006) investigated the Trotter Gunpowder mill (15Fa137) at McConnell Springs in Lexington. This work included documentation of physical remains of the packing and drying house, and extensive archival research (see also George 1986; O'Dell 1995; O'Dell and Johnson 1998). Another site type that has been investigated is railroads. The rail bed for the Lexington and Ohio in Frankfort was documented by Hockensmith (1997a).

Civil War studies are well represented in the Inner Bluegrass Section. Schock (2002) recorded the earthworks overlooking the Kentucky River at Boonesboro (15Ck281). Investigated battlefields in this section include Perryville (Clay 1994) and Richmond (15Ma306) (McBride and Stottman 2000). In the latter case, battle lines were delineated.

Research also has been conducted at two Civil War depots: Camp Dick Robinson (15Gd87) in Garrard County, and Camp Nelson (15Js78, 15Js96, 15Js97, 15Js112, and 15Js164) in Jessamine County. At Camp Dick Robinson, Civil War era features, such as linear trash pits (slip trench privies) and postholes were found. A relatively small amount of artifacts, consisting primarily of architectural debris such as nails and brick fragments,

were recovered from the privies (Anderson and Faberson 2006). Other artifacts found include a large amount of animal bone, mainly pig and cow, and Civil War ammunition.

Camp Nelson in Jessamine County was a large U.S. Army supply depot, recruitment and training camp, and hospital that was occupied from 1863 to 1866). It is most significant as Kentucky's largest recruitment camp for African-American Troops (known at the time as U.S. Colored Troops, or U.S.C.T.) and as a refugee camp for their wives and children. Camp Nelson has been the subject of archaeological research since 1976 (Bartnik 1976), with surveys were conducted in the late 1980s (Janzen 1987; Schock 1987) and limited excavations conducted in the early 1990s (McBride and Sharp 1991). More extensive excavations were conducted in the late 1990s (W. McBride 2005; McBride et al. 2000, 2001, 2003). This work focused on the Headquarters-Mess Houses (15Js96), Owen's House and Post Office (15Js97), and the camp's machine shop (15Js112). Subsequent work has been conducted at Fort Putnum and Fort Jones (W. McBride 2005; McBride et al. 2006), the camp's prison (all part of 15Js78) (Mabelitini and McBride 2007), and an African-American refugee encampment (15Js164) (McBride and McBride 2006).

The archaeology and archival research revealed the complexity and evolution of this combined military and civilian community. For instance, the Owens' House and Post Office complex consisted of a commercial district with stores, saloons/bars, and a hotel or tavern. Ceramics and glassware, faunal material, and military items suggested that the Owens' House was used by officers and higher-level civilian employees, while the two unnamed establishments were a store and saloon for enlisted men and lower-class employees.

Archaeological excavations combined with archival research at the Headquarters-Mess Houses illustrated the changes in the camp after African-American men began to enlist in the U.S. Army. Features and artifacts from the former employee mess houses indicated that these structures housed African-American soldiers, and sometimes their families. An undocumented tent encampment for African-American troops (and likely women and children) was discovered just south of the mess houses. The presence of these tents suggest a housing shortage for troops, as Camp Nelson became the largest enlistment and training center for U.S.C.T. Artifacts and faunal/botanical remains from the mess houses and encampment gave insights into the material culture and foodways of this population. Glass beads, dress buttons, hair barrettes, and dolls indicated the presence of women and children. Gun parts and ammunition suggested a mix of outdated (.69 cal.) muskets and modern weapons (.58 cal. rifles, breech loaders, and repeaters). The ceramics and glassware suggested some social differentiation with the encampment. Though most mess houses yielded plain, low-quality wares, two yielded medium- to high-quality wares, suggesting the presence of officers or supervisory employees. Food remains suggest that the soldiers consumed lower quality pork and beef cuts, and this area contained the only concentration of beans and lentils found at Camp Nelson.

Another aspect of this site was the Headquarters itself. Archaeology combined with documents suggests that the "new" Headquarters was designed and built to reinforce the power and authority of the army. The recruitment of U.S.C.T. troops was very unpopular with Kentucky whites and many whites in the military. The design and layout of buildings, sidewalks, and an ornamental fountain at the Headquarters, which were determined through

archaeological and historical research, utilized religious overtones. The cruciform shape of the headquarters, and the water and symmetry of buildings reinforce this sense of righteousness and authority. Unlike most sites at Camp Nelson, the Headquarters was kept relatively neat, with the only refuse midden being located far to the rear of the structure. Table glass and ceramics from the Headquarters midden and foundation were very expensive, even more so than the serving wares associated with the Owens' House, suggesting the use of different wares to enhance separation and to display high status and rank.

Following the passage of the 13th Amendment in December 1865 and the subsequent freeing of slaves in Kentucky, many African-Americans stayed in the rural areas where they had lived as slaves. One prominent settlement type developed in the Bluegrass: rural hamlets located close to a farm where the slaves may have worked, or where they now rented land or worked as farm laborers (Smith 1972; Smith and Raitz 1974). Sites that have been investigated include Hall (15Js163) in Jessamine County (McBride 1997), Woodridgetown in Woodford County (McBride and O'Shaughnessy 1994), Peanickle in Anderson County (15An108) (Stahlgren and Witte 2004), Cadentown in Fayette County (Linebaugh 2004; Schneider 2004), and Little Georgetown (15Fa278) in Fayette County (Wampler 2005). Most of these investigations have not been very intensive, but they have created the beginnings of a database of potentially comparable material culture and background information on these sites.

OUTER BLUEGRASS

Some of the earliest work in this section was undertaken in the mid-1980s. One study was O'Malley's (1987d, 1987f, 1988) survey of several early residences in the town of Washington in Mason County. Shovel probes placed in the vicinity of these residences suggested the presence of well-preserved late-eighteenth century and early-nineteenth century deposits. This study also generated information on topics such as sanitation, water procurement, trash disposal, and outbuilding location. During the course of this study, O'Malley (1988) also investigated a jail in Washington. Another investigation of a jail was undertaken in Augusta, where a series of architectural features related to the historic jail were documented (Stottman 1999c).

Compared to the Inner Bluegrass Section, very limited work has been conducted at historic stations in the Outer Bluegrass. O'Malley's (1996d) survey of the purported location of Squire Boone's Station (15Sh47) in Shelby County resulted in the recovery of period metal artifacts, but no other material or structural remains were found. Fiegel (1998) located a site in Fleming County that may be Fleming's Station (15Fl92). He found wrought nails and creamware on the site, but more detailed deed research is needed to verify the connection to John Fleming's station.

Slightly more research has been conducted on Antebellum farm sites in this cultural landscape. Limited excavations were conducted at Federal Hill (My Old Kentucky Home) (15Ne62) in Bardstown, Nelson County (McBride 1993). This work documented intact midden deposits in the western yard and to the west of the kitchen,

despite the fact that many areas of the site have been compromised by park landscaping activities. The fieldwork, combined with oral history, suggests that the slave quarters may be located within the present golf course.

At the Duckworth Farm (15Bh212), an Antebellum site in Bath County, two residential structures (a house and a possible slave cabin) and a barn were excavated (Peres 2002a; Pullins 2005; Pullins and O'Connor 2007). The three structures were all organized around an intensively used activity area. The main house was found to have been constructed in the earthfast style, which is somewhat unusual for nineteenth century Kentucky. If the cabin was occupied by slaves, its proximity to the main house represents an interesting variant of the more typical pattern of the spatial separation of slave and master housing. Interpretations about the lives of the slaves, however, were limited, as the material culture assemblage was very small. The low number of nails associated with the barn suggests that it was likely timber-framed. An unusual feature found within this barn was a stone-lined cellar. A large pit feature may have been associated with sugar production, which was documented for the family in the 1850 agricultural census.

A more prosperous site, the Hardin Farmstead (15On55 and 15On57) was investigated in Owen County. The layout of this site was consistent with that of an Upland South farmstead. Analysis of the ceramics recovered (Andrews and Fenton 2001; Andrews and Sandefur 2002) reflected the family's participation in dining rituals, such as the tea ceremony, and their proximity to Monterey, which facilitated their participation in the local consumer economy. The rapid changes in consumerism during the nineteenth century, as the availability of goods increased and as it became increasingly important to display appropriate social knowledge as part of social status negotiations, was not lost on the Hardin family. They appear to have been able to achieve financial success and attain a higher socioeconomic position than most farmstead families, by combining slave ownership and possibly the breeding of slaves, with other agricultural pursuits. This study is unusual in that the authors were able to make a contribution to our understanding of slavery despite the fact that archaeological deposits generated by slaves could not be confirmed at the site.

A very unique and important slave site in Kentucky that has received archaeological investigation is the Anderson slave pen in Mason County (15Ms112) (Kreinbrink 2001, 2004). Documentary research established that owner John Anderson was a major dealer in the trade in slaves from Kentucky to Natchez. Since the structure was only used as a holding pen for several years in the 1830s, and had other functions before and after, it is hard to associate artifacts found at the site with the slave activities, though many of the cooking and serving artifacts recovered may have been related to provisioning slaves.

The Neal-Rice site (15Ni44) is a Postbellum African-American farmstead located in Nicholas County (Stottman et al. 2007). The site represents a relatively short-term occupation that may have lasted from the 1890s to the early twentieth century. Structural remains were documented and a variety of domestic artifacts were recovered from yard midden deposits. The ceramics in particular suggest a low socio-economic position for the family.

Two historic sites in urban downtown Maysville have been investigated (Ross-Stallings and Stallings 1998). Foundations, midden, and a privy were documented at the site of an African Methodist Episcopal church (15Ms102) and thick midden deposits were sampled at the Ebenezer Jenkins House (15Ms103). The ceramic assemblage recovered from the Ebenezer Jenkins House site reflected the residents middle class socioeconomic status, while consumer items and the faunal assemblage reflected the diversity of commodities offered by city markets.

Mid-nineteenth century sites of more moderate socioeconomic status households also have been investigated in this section (Ball 1984b; Granger 1984b; Granger and Ball 1982; O'Malley 1987a). Granger and Ball (1982; see also Wolgemuth 1981) excavated the Linville site (15Bk15), a residence associated with an Augusta (Bracken County) winery. Ceramic analysis suggested a moderate socioeconomic level for the mid-nineteenth century occupation. Documentary evidence points to a decline in the occupants status by the late-nineteenth century, with eventual abandonment and reuse of the structure as a storage shed by ca. 1890 or 1900 (Granger 1984b).

Other domestic sites that have been investigated in this section include Janzen's (1986c; see also Henderson-Fiegel 1987) work at a nineteenth century farmstead in Bracken County; Sanders et al.'s (1976) investigation of a mid- to late-nineteenth to mid-twentieth century log cabin in Mason County; Schock and Howell's (1973) work at a nineteenth century log and frame house and yard area in Washington County; and Rossen's (1985) and Levy and Myers' (1986) work at a nineteenth century house site in Nelson County.

St. Thomas (15Ne84-87) in Nelson County was an important early Catholic Center and a school. Intensive survey and limited excavation resulted in the recovery of numerous artifacts, some of which were related to religious activities. Distributional analysis helped identify midden deposits and landscape features, such as sidewalks and outbuildings. Some structural evidence of a possible kitchen also was documented (Miller 2002).

Only one cemetery has been excavated in this section. It was located in Montgomery County and consisted of 17 graves (Bybee 2007; Bybee and Richmond 2003). Analysis of hair and teeth suggested Euro-American racial affiliation, but with some Native American ancestry. Hypoplasias on the teeth suggested periods of stress or illness in childhood. The teeth also suggested a diet low in commercially processed food (few cavities), but poor dental hygiene. The cemetery layout fit the Upland South cemetery pattern.

Several investigations have taken place on rural brick kilns or on more formal brick factories in the Outer Bluegrass Section. A small brick camp or brickmaking site documented in Shelby County (15Sh50) represents a rural industrial locality (McKelway et al. 1997; Wingfield et al. 1997). Peres (2002a) excavated a large brick kiln (15Bh213) in Bath County. The kiln had four or five flues, and bricks from it were likely used to build nearby Peck's Place. Commercial brick making facilities also have been studied. For example, Hockensmith and Stottman (1997) conducted limited investigations at the Maysville Brick Company site (Mason County).

Knudson's (1985; see also Bodkin 2002) investigation of the Clear Creek Iron Furnace (15Bh53) (Bath County) verified that stone piles at the site represented the remains of fireplaces from associated domestic structures. Other industrial sites or industries investigated in this section includes a possible sorghum processing pit in Owen County (Allen 1973), and the lead mining industry (Hockensmith 2005a).

APPALACHIAN MOUNTAINS

COALFIELDS

During the late 1970s and the early 1980s, several large architectural studies (Carlisle 1978; Dugan and Levy 1981; Hutchinson et al. 1982) undertaken in this region generated information that can be used to interpret archaeological sites. Dugan and Levy's (1981) and Hutchinson et al.'s (1982) work in the Big South Fork National Recreation Area in McCreary County focused on developing models of site location in relation to environmental variables and maturation of the settlement system. Their explicit concern for diachronic variation is somewhat unusual. As a result of their studies, they addressed settlement patterns for this region. Additional information on the Big South Fork area was generated by Howell's (1981) historical and cultural overview, in which the author developed a cultural ecological model for the study area.

Both Howell (1981) and Hutchinson et al. (1982) provided an historic context for the subsequent archaeological investigations conducted by Ferguson et al. (1983). This work resulted in the location of nearly 100 historical archaeological sites. One of the conclusions of Ferguson et al.'s (1983) study was that there was a relationship between site types and their proximity to roads. Ferguson et al. (1982) also conducted an intensive surface collection and limited excavation of a farmstead complex (15McY233). A more detailed analysis of the relationship between land holding and kinship was completed by Gardner (1987). Investigations of the Big South Fork area also have included an oral history of the Blue Heron mining complex (tapes curated at Eastern Kentucky University), which contains useful background information on this mining town.

An historical context for logging and coal mining also has been developed for the Big South Fork National River and Recreation Area (McBride et al. 1994; McBride and McBride 2000b). The study area included the holdings of the Stearns Company, which had come to the area for logging, but stayed to develop what would become the third largest coal mining operation in the United States in the 1920s. The Stearns Company had headquarters in Stearns, as well as a series of coal camps and its own railroad line (the K & T) to bring goods and miners in, and the coal out. The historical context also addressed industries, such as oil and natural gas, earlier logging operations, and town development. A related study is McBride's (1994) oral history and limited archaeological survey of Barthell (15McY523), the first of the Stearns mines (opened in 1902). Topics covered include an overview of the Barthell population, including kinship relations, company stores, and housing. Detailed descriptions of many house lots also are provided.

The Beatty Oil Well, located within the Big South Fork Recreation Area, was one of the earliest, if not the first, commercial oil wells in the United States. It initially produced oil in 1818, and by 1820, oil was being pumped from this well for commercial consumption (Fiegel 1987b). Transportation problems limited its long-term commercial success. The initial drilling of this well was not for oil but for salt water for commercial

salt production. A few years after the oil was discovered, founder Martin Beatty eventually abandoned this location and established a new salt operation several miles downstream. This salt works site has received extensive documentary research (McBride and McBride 2000b) and archaeological mapping and limited excavations (Prentice 1993).

A number of other industrial sites have been investigated, though it is surprising that no large investigations have taken place at a coal mine or camp, given the prominence of this industry in this section. In addition to Barthell, Barren Fork Mining Camp (15McY808 and 15McY809) in McCreary County is the only other mining camp that has been investigated in this section. Work at this site consisted of limited reconnaissance and mapping (McBride 1996). The Crawford-Nurre Sawmill (15Wh165) located near Williamsburg (Day et al. 2004) is the only other industrial site that has been documented in this section. The engine pad and boiler foundation were exposed and mapped. This mill was built to provide raw materials to a Cincinnati millworks (Day et al. 2004).

Few sites located within the limits of a town have been excavated in this section. One site that has been is the early nineteen century dump associated with the coal mining town of Jenkins (15Lr40), in Letcher County (Sussenbach and Updike 1994). The diverse artifact assemblage recovered from this site points to availability of products from national markets. A very different town assemblage was recovered from the DeRossett-Johns site (15Fd50), a middle to upper class town lot in Prestonsburg (O'Malley 1989b, 1990b, 1995). Analysis of the archaeological assemblage focused on the refined ceramics, including calculation of a CC index value and changing ideas about proper dining and tableware. Women's roles in the nineteenth century and the "Cult of Domesticity" also were considered (O'Malley 1990b).

Several nineteenth century farmsteads were documented in the Yatesville Lake region: Skaggs (15La11), Carter (15La228), Wellman (15La67) (Redmond and Hughes 1991) and Adams Farmstead (15La254) (Kerr et al. 1990). Few intact deposits were found at the Carter site, but midden and features were located at the Skaggs and Wellman sites, both of which contained material goods from national markets, and data needed for research on consumerism. The Wellman site assemblage contained a large quantity of stoneware, which might be related to molasses or butter production (Redmond and Hughes 1991). The Adams Farmstead data was primarily from the second house on the property, dating from the 1860 to the 1950s (Kerr et al. 1990).

Limited excavations undertaken at the McKenzie Farmstead (15Jo67) in Johnson County (McBride 1994) documented the location of a detached kitchen and activity areas within the yard. Oral historical data from several McKenzie family members was combined with an architectural rendering of the structure to provide a more interdisciplinary view of life at the farmstead.

One of the more intensive historic archaeological projects undertaken in this section was the excavation of the Prater site (15Fd62), a 1840s-1984 farmstead located in Floyd County (Huser 1993). Subsurface features documented at this site include an area of sealed midden, a nut processing pit, and several other pits. The relatively low CC

value calculated for the site may relate as much to a lack of access to resources as it does the low socioeconomic status of the site's inhabitants (Esarey 1993).

A reconnaissance effort that involved more than the usual level of documentary research is Walker's (1975) examination of the archaeological resources in Cumberland Gap National Historic Park (Bell County). This study included detailed consideration of the historic resources in the park and is almost unique in its attention to a wide variety of cultural resources, such as historic roads and paths, as well as more common types of resources such as structure-related sites. Though much information is available about the Davis Tavern (or Station) site, its location was not discovered.

Cemeteries are another site type that has received little investigation in this section. An exception is Bybee's (2004) excavation of Site 15Fd94 in Floyd County. This cemetery is associated with the family of Revolutionary War veteran David Branham. Though the human remains associated with the 24 excavated graves were poorly preserved, some information on the population's health and demography was obtained from the analysis of the teeth. Personal items and coffin hardware, which helped date the burials to the nineteenth century, also were recovered. Three cemeteries on the Artemis National Guard Training Center have been mapped (Stahlgren 2005a). Their documentation will aid future research on cemetery organization and mortality patterns in this cultural landscape section.

FOOTHILLS

Robinson Forest in Breathitt County, which was created as a forest reserve and research area in the 1920s, was the setting for a large survey (over 7,000 acres) in the late 1980s (Sussenbach et al. 1990). This survey recorded many historical archaeological sites, particularly domestic and other sites associated with late nineteenth and early twentieth century logging activities. Perhaps partly because of its having been purchased early in the logging process by E.O. Robinson, and then turned into a preserve, other typical community features, such as local stores and churches, were absent. Within Robinson Forest, historic site densities were found to be highest in the stream bottom areas, with the initial historic occupation of this area probably being part of a larger community that had ties to the Buckhorn Creek and Quicksand Creek areas. In general, settlement patterns were found to be strongly influenced by kinship relations. Kinship also was seen as having a strong influence on site location in the Yatesville Lake area of the Coalfields section (Niquette and Donham 1985).

While the large survey of Robinson Forest provided important information on historical settlement patterns, few intensive investigations of historic sites have been conducted in this section. One exception is Aument's (1986) investigation of the Davis site (15Bd307b) in Boyd County. Analysis of the materials recovered suggested a mid- to late nineteenth century occupation of this site.

More limited archaeological investigations have been conducted on several domestic sites and a mill site in this section. Domestic sites that have been investigated include two nineteenth century sites (15Lw300c and 15Lw314e) in Lewis County

(Schock and Lanford 1980; Schock and Howell 1980). Investigation of the Cox-Simpson House (15Ja487) (Stottman and Temple 2004), an early to mid-nineteenth century residence located at Big Hill in Jackson County, identified pockets of intact nineteenth and twentieth century midden around the building.

Civil War investigations also are underrepresented in this section. Wildcat Mountain (15Ll131) in Laurel County is one of the few Civil War sites that have been investigated. This work focused on documenting the spatial extent of the encampment and battle areas, with the identification of linear patterning of ammunition being indicative of battle lines (McBride 1998, 2001, 2007).

Industrial sites are better represented in this section. Of the three furnace sites investigated in this section, two (Fitchburg Furnace [15Es105] and Cottage Furnace) are located in Estill County and one (Buffalo Furnace [15Gp291]) is located in Greenup County. The Fitchburg Furnace was one of the first modern iron producing facilities in this section, though due to price reductions in iron, it only operated a short time in the 1870s. The furnace stack still stands, and archaeological investigations verified that the presence of other components, including the casting shed foundation (D. McBride 2005).

Investigations conducted in the vicinity of Cottage Furnace focused on two workers' residences (sites 15Es89 and 15Es90) (Updike 1999, 2000). This research generated information on workers housing, foodways, and access to material goods. Other types of archaeological sites related to iron furnace production include charcoal kilns, used in the production of furnace fuel.

Limited investigation of Buffalo Furnace (15Gp291) (O'Malley et al. 1992) in Greenup County collected information on the furnace, the furnace manager's house, the old hotel, and three cabins. The study also documented seven domestic sites along Buffalo Branch and in other nearby hollows (15Gp293, 295-300) that are likely associated with the furnace. Two collier's pits (15Gp292, 294) were recorded.

The processing of other local natural resources has been addressed in studies of pine tar kilns and saltpeter. Both of these products could be processed on a less capitalized scale than iron ore, though some nitre operations were extensive. Ison (1995) provides information on many recorded tar kilns, some of which have been mapped in detail or investigated with shovel probes. Unfortunately few have been excavated. Carmean's (1994) trenching of a tar kiln near London, however, provided a closer look at site structure, documenting the interior mound with its encircling ditch.

The Saltpeter Cave works (15Cr99) at Carter Cave in Carter County was one of the more extensive nitre mining operations in this section. Investigation of this site documented the several mine related features (Duncan 1993, 1995). Based on the results of her study, Duncan concluded that saltpeter production in eastern Kentucky, even when on a large scale, was not standardized (see also O'Dell 1995).

Mill studies are not well represented within this section. Hockensmith's (1988, 1997b) study of millstone quarrying sites in Powell County, however, has generated new information on the manufacturing component of milling operations.

METHODOLOGICAL AND PARADIGMATIC STUDIES

In addition to site reports and site- or regionally-based articles or monographs, a number of middle-range theoretical and methodological studies have been conducted in Kentucky. Since these works all share a common concern, that of aiding the development of techniques or methods for analyzing and interpreting historical archaeological sites regardless of geographical location, they are discussed in this section rather than in their respective cultural landscapes. This discussion has been divided into the following five categories: artifact studies, chronological analysis, artifact pattern recognition studies, thematic site type studies, and bibliographical works.

ARTIFACT STUDIES

Many artifacts studies have been conducted on Kentucky assemblages, with most focusing on a specific artifact class. Most have been published in journals or edited volumes, though site reports increasingly contain detailed analyses of artifacts.

Deiss (1986) examined Blue Licks Water and American Oil Medicine companies, and provided detailed information on the containers used to bottle these products. Although the discussion focused on just two glass companies, much of the information presented on glass container technology can be applied to all bottles manufactured during the mid-nineteenth to early twentieth century (see also Deiss 1981, or Ball 2006b). This study, as well as Deiss's (1984) work on vernacular medications, are good examples of work that provide a cultural context for material items. Deiss (1992) also conducted research on drainage tiles.

Other artifact studies include Ball's (2006b) research on leather production. Schock and Dowell's (1983) description of gunflints from seven nineteenth century Kentucky sites is useful as a reference to the basic background and sources of French, British, and American gunflints. Ball also has compiled information on gunflints, as well as guns and ammunition (Ball 1997a, 1997b, 1997c, 1999b, 2000a, 2000c, 2000d, 2005c), and has described ammunition assemblages from several sites, including the Crawford-Nurre Sawmill (Ball 1998b), the Gower House (Ball 2005b), the Frankfort History Center (15Fr115) (Ball 1996), Fort Starr (Ball 2004a), and McConnell's Homestead (Ball 2004c). Hockensmith et al. (2000) examined chewed lead bullets.

Maples (2004) provides information on a little researched topic: corset hardware and other "unmentionables" of female attire. Rivers (1999) provides information on buttons. Young (1991) developed models of what kinds of nails to expect from certain kinds of buildings or structure maintenance and remodeling (see also Young 1994a, 1994b; Young and Carr 1993). The model has received some criticism (Ball 1999a, 2005d) or demonstrated lack of fit with other indicators of architecture (Day and Clay 2002; Fiegel 1991; Pullins 2005). These difficulties point to the complexity of building construction and demolition, and the need for more detailed studies with larger numbers

of well-documented buildings in the construction of models. Ball (2005c) provides additional data and perspectives on nail manufacturing.

Pottery-related studies include Genheimer's (1987, 1988b) research on the Covington Pottery, which generated important information on the manufacture of pottery (yellowware; Genheimer also did extensive research on glass products produced by the Hemingray Glass Company). Bader's (2002) study of a Moravian pottery assemblage from Louisville presents information on an interesting specialized ware. Stradling and Stradling (2001, see also Stradling et al. 1998) provide documentation on whiteware production in Louisville at the Lewis Pottery in the 1820s and 1830s, and general contextual information on how the pottery trade was organized. (See also Fryatt 2006 for a 1881 essay on pottery production in the United States.) Other types of common clay artifacts are addressed by Murphy's (1987b) description of clay tobacco pipes from the Covington Riverfront project, and by Hockensmith's (1996b, 1997c, 1997d, 2002, 2004b, 2005b, 2007b, 2007c; Hockensmith and Black 1998, 200a, 2004b4; Hockensmith and Stottman 1997) descriptions of brick potteries and brick site assemblages.

Research also has been conducted on millstones. Hockensmith and Meadows (1996a, 1996b; Hockensmith 1993a) have published detailed studies of millstone quarrying in the Eastern United States and on the millstone industry in the Red River area. In addition, Ball and Hockensmith (2007) compiled a detailed overview of millstone makers and production.

CHRONOLOGICAL ANALYSIS

Several Kentucky archaeologists have attempted to develop guides or methods to date sites or collections. A general guide to dating historic artifacts has been complied by Maples (1998). More specific artifact studies have focused on chronological issues. They include Ball's (1982, 1983) method for dating flat (window) glass. Ball (1983) proposed a refinement in the measurement of window glass thickness, which involved taking measurements in increments of .5 mm. This formula is not as commonly used today as it was in the 1980s, as most analysts use the Moir (1987) formula, which involves obtaining an average window glass thickness for an assemblage or context, and then applying his linear regression formula, which models the change in thickness over time. Day and Clay (2002) proposed a refinement of window glass dating that involved using Moir's formula to compute a date for each window glass fragment and then creating a histogram of the dates, with peaks in window glass dates representing specific construction and repair episodes. McKelway (1992, 1994) utilized a similar procedure, but computed a single date for all window glass fragments that had the same thickness, which is more similar to the Roenke's (1978) window glass dating method, which uses ranges of thickness. These efforts complement the comprehensive guide published by Miller (2000).

Another chronologically oriented analytical method is that of distinguishing lead from alkaline ceramic glazes through the use of hydrofluoride acid and ammonium sulfide solutions (Deiss 1985). The presence or absence of lead in the glaze is a useful

chronological indicator, since lead glazing was replaced by alkaline glazing, especially on decorated refined ceramics, in the 1820s. Obvious advantages of this method include its low cost and the fact that it does not require sacrificing a portion of the vessel or sherd as required by other methods, such as electrospectrographic analysis. The acid spot test has been applied in Kentucky historical archaeology in the analysis of materials from the Frankfort Public Square (Deiss 1988), the Johnson-Bates site, John Grant Station, and the Ingles Pottery (O'Malley 1986a, 1987a). Fiegel (1991) developed a chronology for late nineteenth to early twentieth century shotgun ammunition.

ARTIFACT PATTERNING AND RELATED STUDIES

Kentucky archaeologists have used a variety of classification schemes to organize artifact collections from historical archaeological sites. Often the function of artifacts is assessed with a goal of identifying patterns inherent to specific site types or certain localities. For example, Ball (1984a, 1984b) used data from 41 sites to propose and test two new artifact patterns (an open refuse pattern and a sealed refuse pattern). These new patterns target secondary refuse and are characterized by very high percentages of kitchen artifacts, with high breakage seen in the open refuse pattern (this breakage does not appear to have been quantified). These new patterns are in addition to the usual residential (South's Carolina) and architectural (South's Frontier patterns) (South 1977, see also South 1978). Genheimer (1995) used data from a number of privies in the Ohio Valley to construct the Ohio Valley Urban Privy Pattern (OVUPP). He noted that the pattern indicated dominance by Kitchen Group artifacts, and was similar to the Urban Domestic Pattern (Garrow 1982; Henry and Garrow 1982; Klein and Garrow 1984) or Ball's (1984a) Sealed Refuse Pattern. Genheimer cautioned that the large Kitchen Group masked considerable variation within it, and that functionally based patterns would be more useful if variables such as social class could be controlled for. These cautions should be added to South's (1988) reminder that pattern recognition should not become an end in itself but rather a starting point in connecting archaeological data to human behaviors. For South, connecting these behaviors to larger cultural processes, such as the exploitation of energy resources, was a major consideration. In addition, Orser (1989 noted that a functional analysis can encourage an overly synchronic perspective effectively masking change over time.

Wesler (1984a, 1984b, 1984c) has suggested that the greatest potential of artifact patterning (i.e., functional typology studies) is in intrasite comparisons. For example, based upon a comparison of the intrasite patterning of materials at the Moore site and Whitehaven, Wesler (1987) was able to suggest where an outbuilding had been located at this site. Wesler (2004) has continued refining pattern analysis by comparing and contrasting assemblage homogeneity, citing the need to make pattern recognition more dynamic. A methodology for sorting out variation in artifact distribution within features, and relating this to fill episodes, is presented by McKelway et al. (1992).

THEMATIC SITE TYPE STUDIES

Besides the artifact-based studies mentioned previously, several investigations geared toward specific site types have been conducted in Kentucky. For instance, the nitre mines and production sites associated with rockshelters or caves in the Red River Gorge area have been reported on by Coy et al. (1984) and Fig and Knudsen (1984) (see Faust 1967) on Mammoth Cave. Ball and O'Dell (2001) have compiled a bibliography on the nitre industry.

There also have been several thematic studies of small industries, mostly in the eastern part of the state. These include Pace and Gardner's (1985) analysis of the archaeological structure and cultural content of stills; Hockensmith's (1986) examination of the distribution of petroglyphs associated with pine tar and lye production; Hockensmith's (2002, 2004c) study of the lime industry or brick industry; Ball and Hockensmith's (2007) study of the millstone industry; and Ball's (2008) study of tub mills (small mills with a horizontal wheel than were on many farms). Several studies of brick kiln sites include a more general treatment of this rural industry (Peres 2002a; Verslius 2004; Wingfield et al. 1997).

Another thematically focused study is Ball and Parrish's (1985) survey of landings along the Ohio River. Although they found that these types of sites have low archaeological visibility and research potential, knowledge of their existence and exact location can aid efforts aimed at studying historic settlement patterns or larger complexes, such as plantations or river towns.

Another thematic study is Boisvert's (1984) investigation of salt licks and springs. The salt and mineral waters associated with these natural features attracted the attention of early settlers and developers. As a result, a variety of historical archaeological sites, including roads, towns, and resort hotels, are often associated with salt licks and springs. DuVall's (1977) paper on ice houses and McGraw's (1971) study of spring houses are site reports rather than detailed thematic studies, but both serve to bring together information about specific site types or features. Genheimer (1995, 2003) and Stottman (1995b, 2000b) have examined an even more common feature, privies, in a systematic way; Stottman focused on sanitation issues.

Local or regional thematic studies of the built environment, include Ball's (n.d.) bibliography of folk and domestic architecture, Macintire's (1998) study of log buildings in Kentucky, and Kennedy and Macintire's (1999) survey of agricultural and domestic outbuildings. Also useful is Hudson's (1995) examination of Appalachian buildings and material culture. More general studies of landscape features, such as stone fences, have been compiled as well (Ball 2004b), complementing the comprehensive overview by Murray-Wooley and Raitz (1992).

BIBLIOGRAPHICAL STUDIES

Bibliographies of historical archaeology in Kentucky have been compiled since the early 1980s. The first efforts were by Boisvert (1982), Hilgeman (1983, 1984), and Clay and Bodkin (1987). Other efforts include listings of articles in specific publications, such as *Ohio Valley Historical Archaeology* by Ball (1985, 1989, 2000b, 2005a). Although also published in this same journal, Hockensmith's (1993b) bibliography covers a broad range of reports.

RESEARCH TOPICS AND OBJECTIVES

This section presents a series of broad topics that historical archaeological research in Kentucky has or can address. The topics discussed are consumerism and exchange, settlement patterns, foodways (subsistence), ethnicity, archaeology of the household, farmstead archaeology, urban archaeology, industrial archaeology, Civil War archaeology, and mortuary archaeology. While this section places greater emphasis on culture history and research topics than on specific property types, it is recognized that certain types of sites require special considerations, and thus they have been singled out for separate treatment.

The focus of this discussion is on topics relevant to late eighteenth, nineteenth, and twentieth century historic sites. Research objectives presented are not exhaustive, and researchers are encouraged to develop additional questions.

1. CONSUMERISM AND EXCHANGE

Increased consumption of material goods in seventeenth and eighteenth century Europe and North America resulted in the growth and expansion of the capitalist economies of both regions. Ever-increasing consumption of material goods has continued to characterize these regions for the last 200 years. Thus, most artifacts recovered from historical archaeological sites represent the end results of consumer decisions made by the site's inhabitants or someone purchasing for them. Given the centrality of consumer goods to the modern economy, there is a wealth of research available to help contextualize archaeological investigations of consumerism, most in other disciplines, such as sociology, economics, and history (Baudet and Meulen 1982; Bermingham and Brewer 1995; Bocock 1993; Bourdieu 1984; Braudel 1973; Breen 2004; Brewer and Porter 1993; Burk 1967; Douglas and Isherwood 1979; Ewen 1976; Forty 1986; Fox and Lears 1981; Keynes 1936; Kowaleski-Wallace 1997; Lears 1983; McKendrick et al. 1982; Miller 1995; Mukerji 1983; Nicosia and Mayer 1976; Robertson 1970; Sahlins 1976; Schlereth 1980; Slater 1997; Williams 1982). Much of this work is oriented toward understanding the historical development of a culture of consumption, in which consumerism is related to an overall growth in materialism at the expense of other social goals, and consumption of goods as a form of communication.

Archaeologists have often focused on consumer behavior as broken into four components: 1) the decision to consume; 2) acquisition or procurement; 3) use; and 4) post-use deposition Henry (1991; see Nicosia and Mayer 1976; see also Klein 1991 or LeeDecker et al. 1987 and LeeDecker 1991 for other efforts to model this behavior). Since the earliest interest in this topic, historical archaeologists have primarily focused on the relationship between socioeconomic groups and the consumption of material goods (Baugher and Venables 1987, Spencer Wood 1987b). In this discussion, factors such as income, occupation, and social status are thought to influence the types of goods that individuals or households acquire. Many other factors can affect consumption patterns and, therefore, possibly complicate the relationship between socioeconomic level and

consumer decisions. These issues should be addressed not simply for how they affect this relationship but also as separate topics in and of themselves. Other areas related to consumption patterns that can be studied with archaeological data include broad rural/urban differences; the effects of advertising and marketing systems (for example, the growth of mail-order catalogs); the means of acquiring goods; the effects of household composition and the household life cycle; the relationship between material goods consumption and gender; the role of transportation and other infrastructure variables in the distribution of material goods; and the effects of economic cycles booms and depressions.

Studies using ceramics are popular partly because this artifact type comprises such a large percentage of archaeological assemblages and because of the availability of Miller's (1980, 1991) ceramic price index data and methodology. This is the case in Kentucky as elsewhere. Miller's index measures the cost of decorated wares relative to plain ware or "cc" as potters often called it, and is based on documented variations in the prices of various decorative types and vessel forms found in merchant and import records. Most archaeological site reports dealing with at least a moderate ceramic assemblage include calculation of CC index values and comparisons with other sites. Many Kentucky researchers have gone beyond basic comparisons to elucidate dining behaviors and changes in attitudes about material culture, as part of broader cultural change associated with nineteenth century domestic life (Andrews et al. 2004; Andrews and Sandefur 2002; Barber 2005; Day et al. 2004; Day and Clay 2002; Esarey 1993; McBride et al. 2003; O'Malley 1995; Pullins 2005; Rotman and Thomason 2003). These studies have typically been undertaken using CC values calculated from vessels (not sherds), allowing for connections between artifacts and dining behavior.

Miller's (1980, 1991) CC values limit researchers to data from the nineteenth century, and preferably no later than the mid-nineteenth century. One attempt in Kentucky to extend this approach is Schenian's (1988a, 1991, 1995) construction of a preliminary ceramic price index for twentieth century ceramics (using mail order catalogs), which she developed from her research on the Onionville community. More studies that look closely at other classes of artifacts are needed. By examining specific classes of artifacts, it may be possible to identify various factors that influence consumption patterns and develop "consumer choice profiles," a line of inquiry initiated by Spencer-Wood (1987a).

* Determine the relationships between the consumption of material goods and socio-economic levels. Determine if the same kinds of items, but in varying quantities, were acquired by different groups, or are observed differences related to the quality and type of the goods obtained. Determine the relationship between the consumption of ceramics and the consumption of other goods.
* Determine if the influence of higher socioeconomic groups on the consumption patterns of lower and middle socioeconomic groups diminished after 1910, as suggested by some consumer theorists (Katona 1960:160-161).

* Determine if the nature and degree of differentiation of consumption patterns varied over time. Assess the effects economic cycles or events, such as a recession or depression, had on consumption patterns.
* Assess the relationship between the degree of heterogeneity or homogeneity of a population and consumption patterns. Determine the effect of household composition and life-cycle stage on the consumption and disposal of consumer goods.
* Determine the effect race, ethnicity, gender, and socio-economic level had on consumer behavior. Determine if certain classes of material goods are more informative than others regarding these relationships.
* Identify the effects development of transportation networks, such as the initial dominance of rivers and later growth of railroads and development of road systems, had on access to goods. Determine if there is there a relationship between a household's distance from a town or market center and its acquisition of manufactured goods.
* Assess the effect that new marketing and distribution practices, such as the use of mail-order catalogs in the late nineteenth century (see Schlereth 1980), had on retailing and wholesaling distributional networks. Identify the mechanisms that were used to distribute goods in different temporal and regional settings and how this translated into access to goods. Determine the importance of frontier merchants, "drummers," and furnishing agents in rural areas (Atherton 1971).
* Identify differences in consumption patterns between rural and urban sites, and between large plantations and farms. Determine if agricultural complexes and rural residences exhibit similar consumer consumption patterns.
* Identify the relationship between consumption of goods and possession of land, and if it varied over time and by cultural landscape section or household.

2. SETTLEMENT PATTERNS

Settlement studies have been a major thrust of investigation within historical archaeology. Topics of study have included the change from frontier to mature settlement systems; the relationship of environmental and sociocultural features to settlement patterns; urban layout and industrial site location; utilization of space within individual sites (town, farm, or plantation); and landscape and garden studies. Environmental as well as cultural factors, such as transportation routes, technology, kinship, common geographical origin, religion, and the presence of other cultural groups, also should be to taken into consideration. Research also has focused on examining the internal layout and organization of cities and towns (Cressey 1983; Cressey et al. 1982; Granger 1984b; Praetzellis et al. 1987; Rothschild 1985, 1987; Young 2000b); the type and location of buildings and activity areas within house lots (Andrews 1992; Heath and Bennett 2000; Keeler 1978; King and Miller 1987; Lewis 1977; Stewart-Abernathy 1986; Vlach 1993); and refuse disposal practices and landscaping patterns (Beaudry 1986;

Genheimer 1995; Keeler 1978; Kelso and Most 1990; Moir 1982; Stottman 1995b, 2000b).

In his overview of colonization, Gosden (2004) suggests that the settlement of North America by Europeans is an example of a settler society, a form of colonization that is unusual within the long span of human migrations and settlement patterns. More research is needed to understand how this colonization was accomplished. In Kentucky, a more precise understanding of frontier stations, based on size, location, function, and chronology is needed (Day and Clay 2002).

* Determine if stations function as defensive structures, social, economic and political centers, and "way stations" or inns for travelers and early Euro-American settlers (Day and Clay 2002; McBride et al. 2003b, McBride 1992b; O'Malley 1985, 1987b, 1999a; Perkins 1998). Identify the demographic composition of stations and if it was stratified, based on socioeconomic status. Determine the types of nondomestic building associated with stations. Determine the architectural and construction techniques that were used to build forts, stations, cabins, and outbuildings.
* Identify the settlement hierarchy of each cultural landscape section during the Early Settlement/Frontier subperiod and how it changed over time. Determine the extent to which accounts of Long Hunters and surveyors influence the nature of initial Euro-American settlement. Assess the extent to which land speculation influenced later settlement patterns.
* Identify the geographical and cultural origins of initial Euro-American settlers and the extent to which it varied by cultural landscape. Fischer (1989) and Fischer and Kelly (2000) argue that the region of Virginia that became Kentucky was heavily settled by families from the border area of northern England/southern Scotland, and Northern Ireland, which had developed a distinctive border culture that was particularly adapted to the political and environmental situation west of the Allegheny Mountains.
* Determine if African-American settlement patterns changed over time (especially following Emancipation) and if the extent to which they varied by cultural landscape. The development of rural African-American hamlets has been well-documented in the Bluegrass Cultural Landscape. Determine if similar settlement patterns and economic strategies can be documented in the other cultural landscapes. Determine if racially segregated neighborhoods developed and how this varied by cultural landscape.
* Identify the factors (e.g., transportation improvements, commercialization, marketing practices, industrialization, and political organization) that influenced the distribution of settlements within each cultural landscape. Determine how communities that grew around railroads differed from those that developed along rivers or roads.
* Identify the effects of late nineteenth and early twentieth century urbanization on the spatial organization of Kentucky communities. Assess how changes in

sanitation and the systematic provisioning of water, electricity, and natural gas affected regional settlement patterns and the distribution of residential sites. Determine when such services became available within each cultural landscape and how were they introduced.

* Assess the relationship between the location of settlements and environmental variables, such as soil type, slope, and availability of water.
* Examine how trade and technological developments affected settlement-environment relationship.
* Determine if the layout and functional organization of towns reflect economic, regional, and ideological variation within or between cultural landscapes (Earle and Hoffman 1976; Pillsbury 1970; Stilgoe 1982).
* Identify the basic layout and organization of small towns and hamlets in Kentucky and how they varied by cultural landscape. Within any given region, determine what distinguished small towns and hamlets from larger towns with respect to internal organization and the range of property types associated with them.
* Assess the influence proximity to economic and transportation networks had on the location and success of agricultural complexes.
* Compare the spatial distribution of industrial sites and agricultural complexes. Determine if proximity to a particular transportation network, labor pool, or natural resource had a greater impact on the location of industrial sites than agricultural complexes.
* Determine the extent to which suburban life differed from rural life or living in the more densely settled areas of a city. Identify the ethnic and socioeconomic composition of early suburbs, and who were the first to move into suburbs. Assess how homogeneous suburban populations were with respect to socioeconomic status and ethnicity, and if this changed over time.
* Identify the characteristics of company towns, and how they varied by industry and cultural landscape, in terms of their physical layout and company control and services provided..

3. FOODWAYS (SUBSISTENCE)

The term "foodways" is used here to denote the interrelated systems of food procurement, preparation, and consumption, as proposed by Anderson (1971). Studies of foodways patterns in historical archaeology have focused on faunal and ethnobotancial remains. One topic that has been investigated using faunal remains is dietary variation relative to socioeconomic status. Several studies have identified two characteristics that are common to faunal collections recovered from high-status domestic settlements. These are 1) a greater incidence and proportion of nonlocal and exotic food items, and 2) greater diversity of both wild and domestic species (Branstner and Martin 1987; Martin 1986; Reitz 1986, 1987). In assessing the relationship between socioeconomic groups

and diet, information is needed on local environments, in order to determine which foods were locally available, and on regional cuisines, in order to determine what foods were eaten. According to Reitz (1987:106), "environmental variables probably are the basis of regional food preferences." Besides regional variation, much of which is related to the general environment, broad differences between rural and urban subsistence patterns have been identified (Henry 1987b; Mudar 1978; Reitz 1986; Zierdan and Calhoun 1984a). It is assumed that these patterns cross-cut regions, and some authors suggest that they are stronger than socioeconomic variation (Reitz 1986).

There has been extensive writing on the Southern diet in general; probably more than any other single regional cuisine. Also useful to dietary studies in Kentucky is the current research on the "Upland South" agricultural complex (see below). In part, this complex is characterized by an emphasis on pork over beef (Bidwell and Falconer 1925; Hilliard 1972; Jordan-Bychkov 2003; Mason 1984; Mitchell 1972, 1978; Power 1953). The relative importance of these two staples is a topic of broad interest within anthropology (Harris and Ross 1978; Ross 1980; Sahlins 1976). The centrality of pork to the Upland South diet has been verified by archaeological studies (Allgood 2004, 2005; Breitburg 1976, 1983; Haskins 1998; McCorvie 1987; Martin 1986; Price 1985). An exception to the dominance of pork has been documented at a site in Tennessee, although its special function as a resort may explain a higher than usual consumption of beef (Breitburg 1983).

An individual's or family's ethnicity often influenced the types of animals processed and eaten by a settlement's inhabitants, since food can be an important component of cultural identity. Food choice and preparation are areas in which an individual or family generally have somewhat greater freedom compared to many other aspects of everyday life. Thus, ethnic patterns may be identified in terms of food preparation techniques, as in butchering practices, or in the types of food consumed. To date, most studies of ethnicity and foodways in historical archaeology have focused on Asian-American (Evans 1980; Langenwalter 1980) or African-American settlements (Baker 1980).

Early colonial and frontier settings provide ideal opportunities to study change from European to American diets (Cleland 1970; Cumbaa 1975; Reitz and Honerkamp 1983; Shapiro 1979). Changes in foodways can be subtle, such as the complete replacement of certain foods for ones more suitable to a new environment but without major changes in the food procurement system, to wholesale changes in procuring and processing food. Archaeologists need to understand the circumstances under which foodways patterns change and how these changes are reflected in the archaeological record.

Another topic that can be examined by analyzing faunal remains is animal husbandry. Sex and age at time of butchering can be used to reconstruct animal husbandry patterns (Bowen 1975; Jurney and Moir 1987; Miller 1979). For example, the butchering of primarily older cows may suggest a dairy operation, while butchering soon after maximum weight has been achieved may suggest an emphasis on meat production. Also, certain types of domestic animals might be present at a farmstead but not frequently slaughtered because they were being raised for sale. If this was the case, they should be referenced in documentary records but not well-represented in the archaeological record.

Many of the above topics also can be addressed through the analysis of botanical remains (Holt 1991; Reitz and Scarry 1985; Rossen 1992, 1995a, 2003; Scarry 1993). Ethnobotanical data also can provide information on climate and seasonality, since many plants and their use are tied to growing seasons. Analysis of wood charcoal remains can provide additional information, such as types of wood selected for construction.

* Identify the relationship of the proportion of wild plant and animal species consumed to socioeconomic status.
* Determine the extent to which a higher proportion of wild animal consumption was a result of wealth, either from increased pleasure hunting or the availability of servants or slaves to provide game.
* Determine the importance of wild game to local diets during Early Settlement/Frontier times and into the early decades of the Antebellum subperiod. Determine the contribution of local plant foods to household diets.
* Determine if rural Kentucky households conformed to the Upland South Pattern. Analyze faunal remains from a variety of contexts to identify the range of variation in usage of different species, and the types of settlements that exhibit the highest or the lowest incidence of pork usage; and to determine which environmental, cultural, or regional economic factors best explain the observed variation in the reliance on pork.
* Determine if small town subsistence practices resemble a rural or urban pattern.
* Assess the nature of nonagricultural occupational specializations on household diets. For instance, Schenian (1987, 1988a) noted that the residents of Onionville had a diet that was similar to that documented at urban sites. Similar studies should be conducted at other coal towns and other small towns.
* Determine if marketing systems affect the availability and price of various kinds of meat and plant foods.
* Assess the extent to which a restricted market, coupled with reduced access to home-produced food, result in decreased dietary diversity (Mudar 1978; Reitz and Scarry 1985), or if restricted markets result in increased home production.
* Determine if changes in subsistence patterns were influenced by the extent of similarity between the old and new environment, the plasticity of the food resources, and the reliability of supply lines (Reitz and Scarry 1985).
* Assess if food preparation methods are unique to certain cultural landscapes can be documented in the archaeological record.
* Determine if enslaved African Americans had a substantially different diet from the Euro-Americans.
* Identify the relationship between the development of new transportation routes and dietary changes. For example, assess whether there was an increase in the consumption of prepared foods (usually contained in tin cans) in rural areas as railways made shipping goods more economical.

4. ETHNICITY

The treatment of ethnicity is a complex and difficult topic, both to conceptualize, and to operationalize (Franklin and Fesler 1999; Mullins 1999, 2001; Potter 1999; Singleton 1995; 1999; Wilkie 2000). Ethnicity is usually used by historical archaeologists in the sense of personal identity, especially as an ascriptive category used by the ethnic groups themselves (Barth 1969; Spicer 1971). Certainly the largest current focus is on the African-American diaspora (Blakely 2001; Epperson 2004; Franklin and McKee 2004; Mack and Blakely 2004; Mullins 1999; Orser 1996, 1999b; Singleton 1999; Singleton and Bograd 1993). Archaeological studies of ethnicity often focus on minority populations who were disenfranchised to some degree by the host society and who are not well-represented in documentary sources.

McGuire (1982) and Huelsbeck (1988) have suggested that aspects of an ethnic group that are not opposed by stronger ethnic groups will show the most change. They also have suggested that ethnic activities or attitudes that are most objectionable to the majority group will remain the most resistant to change, often becoming the strongest markers of ethnic identity. Mullins' (1999) analysis of African-American consumerism in Annapolis suggests that faced with discrimination, they turned to the possession of material goods as a form of empowerment, at the same time refocusing the meaning of their relationship with mainstream material culture. This and other studies (Casella and Fowler 2005; Wilke 2000) have moved beyond any attempts to identify "marker" artifacts and begun to focus on more complex relations of ethnicity and identity formation. The complexities of identity include that it changes over time for a given individual, or that a given artifact has polysemic meanings in relation to identity. To combat these difficulties, studies need to be very well contextualized, typically with a wealth of ethnohistorical, oral historical, and documentary data to complement the archaeological data. Some studies focus on the role of material culture in terms of enduring practices and in terms of active agents whose identities are formed in a recursive process of social belonging (Casella and Fowler 2005; Wilke 2000) or creolization (Groover 2000).

Since cities and towns received the majority of immigrants to this country during the nineteenth century, especially during the late nineteenth century, studies of ethnic identity tend to focus on town or urban settings. In Kentucky, Louisville received more immigrants than any other locale and more actively sought them as well, though small immigrant communities, such as Bernstadt, East Bernstadt, Strassburg and Langnau in Laurel County; Saaner, Lutherheim and Highland in Lincoln County; New Austria in Boyle County; Templar Springs in Edmonson County; and small colonies in Christian and Lyon counties were established in the late nineteenth century (Traughber 1942). The spatial patterning of residences of different groups within a community can be studied to determine if neighborhoods were stratified by ethnic affiliation.

* Determine the importance of social institutions, such as churches and mutual aid societies, extended families, or other kinship relationships in maintaining ethnic identity.
* Assess what happens when new ethnic groups move into previously segregated ethnic neighborhoods.
* Determine if certain aspects of material culture change faster than others for different ethnic groups.
* Identify the spatial distribution of ethnic groups within a community and their position within the local economy. Assess their success in maintaining their ethnic identity.
* Determine how members of different ethnic groups used material culture to create and define membership and establish relationships with other ethnic groups. Assess how these processes varied relative to interethnic group power dynamics.
* Determine the spatial distribution of ethnic groups within company towns, such as coal towns. Determine if immigrants were segregated physically within company towns, and if they were restricted to certain occupations and if this affected their ethnic identity.

5. THE ARCHAEOLOGY OF THE HOUSEHOLD

Archaeologists have probably excavated more domestic dwellings than any other site type and have, with other anthropologists, given broad support to the household as an appropriate unit of analysis (Barile and Brandon 2004; Deetz 1982; Flannery 1976; Galke 1998; Goody 1971; Mrozowski 1984; Netting et al. 1984; Rathje and McGuire 1982; Wilk and Rathje 1982). Most researchers who work in urban contexts have to contend with domestic sites created by a long sequence of different occupants. To address this issue, they have attempted with varying degrees of success to link certain deposits to specific occupants (Beaudry 1984, 1988; Barille and Brandon 2004; Brown 1987; Friedlander 1987; Groover 2003a, 2003b; Henry 1987a; Mrozowski 1984, 1987).

Research on privies, wells, and other deep features focuses on their original functions and on what they can say about basic aspects of domestic life, like providing water or sanitary facilities (Genheimer 1995, 2003; Stottman 1995b, 2000b). Architectural information, from analysis of standing structures, archaeological features, or changes in the frequency of nails and other architectural artifacts, has been used to identify alterations to structures that are associated with changes in the household. Botanical and/or phytolith analysis has been used to investigate landscaping episodes and their relationship to changes in household composition or household turnover (Bartovics 1977; Bastian 1986; Beaudry 1984, 1987; Brown 1987; Groover 2003a; Herman 1984; Louis Berger and Associates 1985; Moran et al. 1982; Mrozowski 1983, 1984).

Research on the archaeology of households has focused on topics like household dynamics and composition, provisioning of basic services, or household activities,

architecture, or the use of interior and exterior (usually yards) spaces (Beaudry 1984, 1998a, 2004; Friedlander 1987; Groover 2003a, 2003b; Henry 1987a; LeeDecker et al. 1987; Mrozowski 1987; Neiman 1986; Spencer-Wood 2004; Starbuck 1984; Stewart-Abernathy 1986, Wall 1987a; Yentsch 1975, 1981). These studies challenge assumptions that all households looked alike or operated under the same basic principles; explore variation due to factors, such as ethnicity, socioeconomic class, market participation, and/or regional setting; and investigate the ramifications of such variation on the archaeological record. Groover (2001, 2003b) has developed a method called time-sequence analysis, the goal of which is to better link midden and feature deposits to specific households.

* Determine the composition of a household (morphology), and how it changed through time.
* Determine if differences can be documented between the composition of urban and rural households or by ethnicity.
* Assess the relationship between household composition and economic activities; the developmental life cycle of the household; household income or wealth; the timing and nature of important transitional periods in the life cycle of individuals; house and lot renovation; and acquisition and deposition of material goods.
* Identify the effect of urbanization, industrialization, and migration on household composition and material wealth.
* Determine if there are major differences in how households acquired and managed wealth based on their degree of production for capitalist markets versus home consumption.

6. FARMSTEAD ARCHAEOLOGY

A farmstead is defined here as a complex of agriculturally related buildings, yards, enclosures, and specific activity or use areas associated with the practices of farming. Not surprisingly, given Kentucky's rural character and the importance of farming as a major economic activity in the state farmsteads make up a significant portion of recorded historic sites in Kentucky (Table 8.1). To date, archaeological investigations at farmsteads have focused on identifying the various structural components of these sites and their associated function(s). Because many materials were processed at farmsteads, these sites often contain a wide range of outbuildings or other features indicative of those activities, such as livestock butchering, molasses preparation, water collection, and refuse disposal. Research at farmsteads typically has focused on describing the morphology and location of outbuildings and features, and identifying the kinds of activities they reflect (Adams 1990; Andrews 1997; Barber 2005; Gibb and King 1991; Emerson and Rohrbaugh 1986; Fiegel 1988; Jurney and Moir 1987; Lewis 1977; Moir and Jurney 1987; O'Malley 1987a; Rotenizer 1992; Smith et al. 1982; Stewart-Abernathy 1985; Wagner 1995; Wagner et al. 1992; Wurst 2007; Vlach 1993).

Research also has focused on identifying aspects of the Upland South Pattern, typically seen as a blending of eighteenth century elements by settlers from Pennsylvania and the Chesapeake region who migrated to western Maryland and Virginia. This tradition then was transported west to Kentucky, North Carolina, Tennessee, Missouri, and parts of Arkansas and Texas. The Upland South Pattern is usually characterized by the following features: a diversified and somewhat self-reliant agricultural system, with an emphasis on corn and pork, supplemented with smaller amounts of cotton, tobacco or hemp, and generalized livestock for those who could finance such operations; a technology heavily dependent on wood; an architecture dominated by log and frame I-frame style houses and transverse crib barns; a social structure dominated by household-organized farms but influenced by slavery and a desire of most farmers to own slaves (though the incidence of slave ownership is lower than in the Lower South); a high valuation of land as a social asset; an attenuation of towns and low percentages of professionals or craftsmen relative to northern areas; and an emphasis on counties as a major unit of local government, with resulting importance of the county seat town, which often was laid out around a court house square (Gray 1933, Jordan 1967, Jordan-Bychkov 2003; Kniffen 1965; Kniffen and Glassie 1966; Mitchell 1972, 1978; Newton 1974). Several researchers working in Kentucky and elsewhere have employed this tradition to interpret aspects of the archaeological record (Andrews 1997; Andrews and Sandefur 2002; Andrews et al. 2004; Breitburg 1976, 1983; Day and Clay 2002; Groover 1993, 2003b; McCorvie 1987; Madsen et al. 2005; Mason 1984; O'Brien 1984; Wagner 1995; Wagner et al. 1992) (see also foodways above).

While many documentary sources can be used to study the agriculture of a region and its transportation and market network, there are few documents, other than census records, scattered diaries, or other personal papers, that give detail on what individual farmers grew, what they did with their produce, and to what extent they used profits from the sale of farm goods to buy other material goods. For example, a study of income and spending in the 1930s (Nourse 1934) suggested that farm households nationwide spent far less, often half as much, on material culture than nonfarm households. This could explain the low ceramic cost index values sometimes associated with farmsteads. Historical archaeology offers a chance to approach these questions through combined historical research into the economic structure of an area, documentary and ethnographic research concerning cultural background, and material culture data on the actual activities of farming strategies and how this was related to goods coming into farms (Andrews and Fenton 2001; Friedlander 1991).

Some studies of Appalachian farms (Dunaway 1996; Salstrom 1991) from a world systems perspective suggest that their insertion within capitalist economies, (Wallerstein 1974, 1980, 1989, 1997) is an important variable to investigate. Groover's (2003b) study of the Gibbs farmstead in Tennessee employed this perspective and it is a relevant comparison to Kentucky farmsteads. These perspectives on world systems and the process of incorporating households within capitalist economies also can be applied to urban households, or to comparisons made between urban and farm households. The issue is to understand the nature of this articulation, rather than to debate whether farms on the American continent were ever really self-sufficient or did not participate in capitalist economies, since from its beginnings Euro-American settlement was related to

expansion of the European core economies and their search for raw materials, and later, markets and consumers.

One way that archaeological information can be used to address this topic is by inferring from the artifacts the kinds of materials that would have been produced or preserved on the farmstead. Many types of artifacts are known to be of nonlocal origin, and some, such as marked ceramics or bottle glass, may identify points of origin. Analysis of ethnobotanical and faunal remains, sometimes in conjunction with census and other documentary information, can be used to construct crop profiles. Marketing of livestock may be indicated by cases in which species known to have been raised on the farm occur in lower than expected proportions within the faunal assemblage. Also, general inferences about the degree of self-sufficiency could be made from the types of activities suggested by structural features, outbuildings, or functional artifacts. For example, a decrease in the frequency of canning jars relative to tin cans might suggest an increase in commercially procured food.

* Identify the types of agricultural complexes present in each cultural landscape section and their spatial distribution across the landscape.
* Within each cultural landscape section, determine the relationship between agricultural complexes and nearby communities with regards to race and socioeconomic status.
* Identify the basic structure of farmsteads and how it varied by time period and cultural landscape. Determine if subdividing farmsteads into inner, outer, and peripheral yard (Moir 1984, 1987) is useful, and if not, identify other models that are more applicable to Kentucky farms. Determine if activity areas on farms can differentiated by gender or age.
* Determine if farmsteads were oriented towards cultural features, such as transportation arteries connecting nearby towns; towards natural features, such as prominent topographic landmarks; or towards the cardinal directions. Determine if this orientation changed over time and if so, how and why.
* Determine if there are typical patterns of refuse disposal for farmsteads that differentiate them from purely rural residences or urban sites (Keeler 1978; McBride 1985; Rogers 1985).
* Assess the extent to which night soil or the contents from privies were used for fertilizer in agricultural fields, and if these activities created artifact scatters in fields and reduced the assemblage found around the house or in other areas. Assess how other agricultural practices affect the distribution of artifacts at farmsteads.
* Determine the extent garbage was disposed of in nearby ravines. Determine if there was temporal and regional variation in this pattern, and how it changed in response to the growth of material culture over the nineteenth and twentieth centuries. If refuse was carried away from the immediate yard area, determine how this was this accomplished and how far it was carried.

* Identify if there were density-dependent effects for farms, as well as between farms and urban areas. That is, determine if there are differences in refuse disposal patterns depending upon a farmstead's degree of proximity to neighboring houses.
* Determine the extent to which Kentucky farmsteads conform to the Upland South Pattern, and if there is spatial or temporal variation in the extent to which they conform to this pattern.
* Identify differences between fully agricultural farmsteads, part-time farmsteads, or rural residences; or by different types of tenancy. Determine if there are systematic differences between the types of structures and activities represented on these types of farmsteads. Determine if different types of agricultural elements were retained longer on part-time farms than on rural residences and if this varied by region or by the type of farming. Identify the structural elements or activities reminiscent of the farm that were carried over into small town and urban life. Determine how long they lasted and how this varied over time.
* Determine if the nature of the farm production can be characterized in terms of its relationship to commercial (capitalist markets) integration. Determine if variation in the nature of this production had an effect on material goods acquisition and disposal. Identify differences in how farm and urban households articulate with capitalist production and consumption, and how this affected their access to material goods. Identify the effects of crop selection on disposable wealth and farm organization. Identify the effects of mechanization on crop selection.
* Assess how soil depletion, common in Kentucky during the early twentieth century, affected farming strategies, and the organization and success of a farm.
* Identify the relationship between ethnicity and patterns of farm ownership and success. For example, Martin (1988:266) suggested that in the Pennyrile Cultural Landscape African-American farmers had a better chance of becoming autonomous cash renters, as opposed to share-croppers, when they farmed less desirable and probably less commercial farms. Determine if this pattern can be documented in other cultural landscapes.

7. URBAN ARCHAEOLOGY

Urban archaeology began to be perceived as a specialization within historical archaeology in the late 1960s and early 1970s. Salwen (1970, 1973) can be credited with making the distinction between archaeology in the city versus archaeology of the city. A similar distinction between archaeology undertaken in an urban area and urban archaeology was made in Kentucky by Granger (1983). Archaeology in the city is used here to refer to the differences between conducting archaeological research in cities versus small towns or rural environments. A high density of sites, coupled with the reuse of localities, complicates archaeological investigations undertaken in urban contexts. Because of the reuse of house lots, they often contain very complex deposits, with a

greater degree of superposition of features and structures than at rural domestic sites. Also, the density of occupation and geographical mobility that characterizes most urban areas means that most sites have a high occupant turnover rate.

Urban archaeologists have experimented and continue to experiment with ways to work with fill and complex building sequences (Barber 1978; Dickens 1982a, 1982b; Garrow 1984; Honerkamp and Council 1984; Rubertone 1982a, 1982b; Staski 1987a, 1987b). For example, identification of fill episodes and other events thought of as site disturbing (like installation of sewage lines) have come to be viewed as crucial in attempting to document the growth of a city (Bastian 1986; Beaudry 1986; Faulkner et al. 1978; Honerkamp and Council 1984; Honerkamp and Fairbanks 1984; Sapan 1985; Seasholes 2003; Stottman and Stahlgren 2006).

Archaeology of the City

The concept of an archaeology of the city, in contrast to the preceding discussion of archaeology in the city, refers to the study of various processes of urbanization and of what life in cities was like. This approach includes a consideration of the city as an integrated system of sites, or in Cressey's (1979, 1983; Cressey and Stephens 1982) terms, the city as a site. Although this approach seems widely supported (for a Kentucky example, see Granger 1983), based on a review of major publications in historical archaeology, Henry and Klein (1988:2) concluded that most studies still "exemplify archaeology in the city, not of the city" (emphasis original). Staski (1987a) offered a similar assessment. Henry and Klein (1988) support a comparative approach within urban archaeology, but only if comparisons take into consideration the site's context within the city and region at large.

Research topics proposed by urban archaeologists studying the city include the development of definitional schemes of the urban area, most of which focus on high population density and heterogeneity (Henry and Klein 1988; Pilling 1982; Rothschild and Rockman 1982). Amy Young (2000a; see also Young 2000b) has identified a number of characteristics of Southern cities that likely could be applied to most U.S. cites. They include attention to commercial rather than agricultural pursuits; maintenance of a relatively dense population and the problems attendant to it, such as food procurement, waste disposal, and animal maintenance; employment or the means to acquire goods, both necessities and luxuries for its dense populations; political and social center functions; and formation of community identity. Mullins and Klein (2000) offered similar, but subtly different characteristics, with more of a behavioral slant. Their urban characteristics include high levels of in- an out-migration; heterogeneity in social and ethnic makeup; distinct social hierarchies and material inequality reflected in class divisions; frequent impersonal interactions; openness to innovations; and rapid changes in social practices and their material expressions. For them, urban is more of a "way of life, or a perception of a way of life" than a place (Mullins and Klein 2000:222). On the other hand, they note that characteristics that might be considered rural, such as close personal relations, often can be found in urban neighborhoods (Joseph 2000; see also Hahn and Prude 1985).

In 1982, Schuyler (1982) noted that attention needs to be given to all phases of urbanism, not just the mature phase that has been studied most frequently. More comparisons between U.S. and European and other cities also is needed. For example, U.S. cities may be highly unusual for their relatively low population density compared to cities in other parts of the world, and for the type of suburban development that occurred in the late nineteenth and early twentieth centuries (Jackson 1985:71, 43). More research is needed into these differences and their cultural meaning. Mullins and Klein (2000) provide suggestions for future research in Southern cities. Suggested topics include urban planning; provisioning of mundane services, such as sewage, suburbanization, marketing, or urban topography; participation in consumer transformations including the spread of gentility and refinement (Bushman 1993); and how mass-produced goods were given meaning. Garrow (2000) suggested the following clusters of topics be addressed in urban contexts: 1) Social/Cultural Reconstruction, Gender, Ethnicity, Subsistence, Household Material Culture, Neighborhood Material Culture and Consumer Patterns; 2) Land-Use History, Settlement Patterns, the Process of Land Transformation, Site Function and the formation of Neighborhood and Districts; and 3) Urban Theory. Researchers also may find the framework for analysis of urban data laid out by Cheek and Friedlander (1990) helpful.

* Determine if population density is related to settlement complexity and range of characteristics and services typically of urban communities. Determine if this changed over time and in relation to a city's developmental phases.
* Identify how corporate means of refuse disposal differ from those of individuals.
* Identify variation in refuse disposal, provisioning of water, or other basic services within cities (Honerkamp and Council 1984), and how this has affected the archaeological record.
* Assess the degree of functional segregation within cities and how it changed over time (Cressey 1983; Cressey et al. 1982; Rubertone 1982b; Zierden and Calhoun 1984a, 1984b).
* Identify the range of variation of ethnic and class distinctions, both in material culture and in residential segregation, within cities (Cressey 1983; Cressey and Stephens 1982; Ostrogorsky 1987; Rothschild 1987; Schultz 1982; Shepard 1983; Staski 1987a; Wall 1987a, 1987b, 1999).
* Identify the relative position (or specialization) of a city with regard to economic networks and changes in that position over time (Cressey and Stephens 1982; Dickens and Crimmins 1982; Gorman 1982; Granger 1984a, 1984b; Schultz 1982).
* Assess organizational differences between preindustrial and industrial cities (Gorman 1982; Pilling 1982).

8. INDUSTRIAL ARCHAEOLOGY

Industrial archaeology is concerned with investigating, surveying, recording, and preserving industrial remains and examining the broader economic and social contexts in which these sites existed (Buchanan 1979:53; Cassell 2005; Shackel 2004; Teague 1987:200). It should be noted that both large and small industrial sites, as well as artisan/craft shops, are included under the topic "industrial archaeology". The agricultural nature of Kentucky's economy is reflected in the early industries and crafts, which included grist and flour mills, saw mills, tanneries, blacksmith shops, distilleries, hemp and rope manufacturers, and tobacco processing centers. Other early industries included potteries, salt works, iron furnaces, river boat building, millstone quarrying and manufacture, and gunpowder mills (with associated nitre mining and charcoal production). Later industries, such as coal mining (which actually started in the 1820s), lumbering, the glass industry, and breweries, were more diversified but still took advantage of Kentucky's natural and cultural resources.

* Assess the position and arrangement of individual industrial buildings or groups of buildings at industrial sites and determine their relationship to associated features and activity areas.
* Determine if regional variability in the form and position of the dam, mill race, and flume reflect environmental, technological, and cultural factors in the construction of mills. Identify what affect these factors had on other industrial sites.
* Identify the relationship of different industries to community growth, and the development/improvement of new transportation routes.
* Identify the relationship between industrial endeavors and surrounding agricultural complexes.
* Determine how industries in each of the cultural landscapes were organized, including production sites, procurement sites, worker housing, and waste disposal areas.
* Determine if the size and internal organization of company-influenced house lots compare to other house lots and agricultural complexes.
* Identify the type of power machinery (wheel, turbine, or steam engine), internal machinery, and fuel sources used by various industries.
* Determine if evidence of conservatism, rapid change, or local variation in technology is related to broad economic and technological change, local economic conditions, environmental conditions, and cultural factors.
* Determine if an analysis of product waste can significantly increase one's understanding of an industry (cf., Faulkner 1982; Genheimer 1987, 1988a, 1988b; McBride 1987; Rotman and Staicer 2002; Turnbaugh 1985).

* Determine if the establishment of certain industries (e.g., grain mills, distilleries, tobacco, and hemp factories) is correlated with an increase in the commercialization of surrounding farms.
* Assess the relationship of local industries within the growth, development, and possible decline of a community.
* Identify the effect of local industries on the social stratification and ethnic composition of a community or region.
* Identify the relationship of local industries to environmental factors, transportation routes, population distribution, and other industries.
* Assess the extent to which industrial worker residences, whether private or company-owned, reflect their social and economic conditions.
* Determine within company towns, such as coal towns, the degree of control the company had over workers' social lives, the distribution, variety and costs of material goods, differential quality of housing, and community layout.

9). CIVIL WAR

While Kentucky was not the major battleground of the Civil War, significant military activities occurred within the state, including several engagements, supply storage and transport, and soldier recruitment and training. The large number of Civil War sites in Kentucky hold great potential for archaeological research. To date, most archaeological examinations of Civil War sites have focused on earthen fortifications and battlefields, with some attention given to encampments. Pre-1987 archaeological work on Civil War sites in Kentucky focused on fortifications, sometimes with a goal of reconstruction. Earthen fortifications in Covington, Frankfort, and Glasgow were among the first to be investigated by archaeologists (Fenwick 1979; Harper et al. 1981; Schock 1978a, 1978b). These investigations documented construction elements, including their parapets, ditches, gun platforms, and revetments.

Since 1987, earthen fortifications have continued to be examined, but emphasis has shifted toward determining how they were constructed, the range of activities that took place within them, their state of preservation, and whether they had associated encampments. Fortifications investigated in the last 20 years include Covington (Kreinbrink 1996), Fort Jones at Camp Nelson (W. McBride 2005; McBride et al. 2006, Fort Duffield (O'Malley 1999b), and Fort Starr (Ball 2004a; Carstens 1998; Quertermous 1999).

In addition to fortifications, greater attention has been paid to Civil War battlefields. Methods utilized in the study of battlefields include systematic and judgmental metal detecting (Scott and Fox 1987, Scott et al. 1998). Kentucky battlefields that have received metal detector surveys include Perryville (Clay 1994), Richmond (McBride and Stottman 2000), Mill Springs (Miller 1994), and Wildcat Mountain (McBride 1998, 2001, 2007). These surveys were directed towards locating artifactual

evidence, such as fired and dropped bullets, clothing items, or accoutrements that would identify the positioning of soldiers on the battlefield. Through an examination of the spatial distribution of dropped bullets and fired bullets, two of these studies (McBride 2001; McBride and Stottman 2000), and possibly a third (Miller 1994), successfully located battle lines.

Civil War encampments that have been the subject of survey-level investigations include Fort Duffield (O'Malley 1999c), Infantry Ridge at Wildcat Mountain (McBride 1998, 2007), and Fort Jones at Camp Nelson (McBride et al. 2006). Typical artifacts recovered from these sites include cut nails, whiteware, bottle glass, military buttons and accoutrements, and ammunition. In addition to this work, limited excavations have been conducted at Camp Dick Robinson in Garrard County (Anderson and Faberson 2006). This study located several Civil War features, including slipped trench privies and postmolds. The most extensive archaeological investigations on any Civil War encampment, or site of any kind in Kentucky, have occurred at Camp Nelson, a large U.S. Army supply depot, recruitment and training camp, and hospital occupied from 1863 to 1866 in Jessamine County (McBride 1998; McBride and McBride 2006; McBride and Sharp 1991; McBride et al. 2000; McBride et al. 2003).

The most efficient way to examine the types of topics or problems that can be addressed using data from Civil War sites is to organize the discussion by site types (fortifications, battlefields, encampments, domestic, and industrial). These site types, however, are not mutually exclusive, since an individual site could represent two or even three of these types. However, because of the different behaviors associated with each site type, they will be discussed separately.

There is one issue that research on Civil War sites should address regardless of site type. This is the variability of arms and equipment, which should be examined synchronically and diachronically within each Army and between the two. For instance, some scholars have suggested that Union equipment and provisions improved in condition and became more standardized as the war progressed, while nearly the opposite occurred with Confederate supplies (Coggins 1987:120; Lord 1960:137). The exact nature of these changes is not presently known and is an issue that should be addressed through archaeological research.

Fortifications

Kentucky contains a large number of Civil War fortifications, both large and small, and permanent and temporary. Most consist of earthen walls (ramparts and trenches), but beyond this, a great deal of variation has been noted in how they were constructed. Many smaller fortifications, placed at strategic locations such as railroad crossings or along other transportation routes were never the scene of military action.

* Determine how fortifications were constructed.
* Identify the fortification components.
* Identify the ordinance stored at forts and the activities that took place at these types of sites.

Battlefields

A well-known historical archaeologist once stated that "little can usefully be said of battlefield sites" (Noel-Hume 1975:188). Examination of battlefields located in the southeast (Braley 1987), west (Scott and Fox 1987; Scott et al. 1998), and Kentucky (McBride 2001; McBride and Stottman 2000), however, have demonstrated the utility of archaeology in the analysis of the spatial structure, the location and movement of troops, and the equipment and arms used at battlefields.

* Determine the nature of the fortifications or entrenchments constructed.
* Identify how troops were deployed across the battlefield. The spatial distribution of percussion caps or shell cases is a good reflection of their positions.
* Assess where the most intensive fighting took place. Examination of the spatial distribution of spent bullets, balls, and percussion caps can provide important data that can be used to address this issue.
* Identify the variation in arms, ammunition, and equipment used during the battle. Determine if there is spatial patterning by caliber. Since arms were often issued by company, information on the distribution of ammunition type could be used to help reconstruct company positions and determine whether the quality of arms was a factor in these positions (Braley 1987; Wiley 1943:292). Also, the general quality of arms and equipment issued can be examined.
* Determine if a field hospital was established and if it was composed of tents, a requisitioned house, or some other type of structure(s). Determine the types of tools, medicines, and other equipment that were utilized. Determine if there is any evidence of specific medical procedures that were used at the hospital.

Encampments

Camp sites probably hold the most potential for the archaeological investigation of the Civil War. Being habitation sites, they have good potential for producing a substantial quantity of artifacts, both domestic and military, and they allow for the study of military lifeways and material provisioning. Many Civil War encampments have been studied by archaeologists in the last ten years (Geier et al. 2006), including some in Kentucky (Anderson and Faberson 2006; McBride et al. 2003). Information has been collected on topics, such as housing, arms and equipment variation, supply manufacturing, social stratification, and camp layout (Bentz and Kim 1993; Geier and Potter 2000; Geier and Winters 1994; Geier et al. 2006; Legg and Smith 1989; McBride et al. 2003).

An important distinction that should be made for encampments besides being Confederate or Union is whether they were permanent or temporary. The types of structures associated with these two kinds of encampments varied, as did their internal organization and the kinds of activities likely to have taken place. Kentucky contains many examples of both kinds of encampments, which were occupied by Union and

Confederate armies. In terms of temporary encampments, researchers should be careful not to disregard relatively short-term occupations, since they were often occupied by large numbers of troops and therefore may contain large material culture assemblages. Also, to gain a better understanding of military behavior and practices during the Civil War, it is important that a variety of site types be investigated.

* Determine if the troops lived in tents, huts, cabins, or barracks, and what they were like. The potential for discovering evidence of these structures depends on their permanence and construction. There was much variation in housing, especially in winter quarters, and the investigation of this topic could generate important information about the lifeways and creativity of soldiers (Bentz and Kim 1993; Billings 1993; Coggins 1987:18; Geier et al. 2006; Wiley 1951:53-57).
* Determine how the camp was laid out. Both armies had explicit instructions concerning the placement of tents and huts as well as wagons, kitchens, and privies. Assess the extent to which these instructions were followed.
* Determine how refuse was disposed. Although camps were supposed to be kept somewhat clean, many accounts suggest that garbage was concentrated in a number of areas, including the "streets" and drainage ditches between tents (Billings 1993; McBride et al. 2003a; Wiley 1951:127).
* Identity the kinds of food eaten and how they were prepared. Food was supposed to be prepared in the company kitchen, but in many camps, especially impermanent ones, cooking was commonly undertaken near a soldier's tent or hut (Billings 1993; Wiley 1951:237, 244). The usual army diet was fairly standardized and monotonous, but soldiers often foraged and bought additional food from settlers (McBride et al. 2003). Determine if there is any evidence of these activities.
* Determine if gambling was a major recreational activity or if large quantities of alcohol were consumed by the troops.
* Determine if there were differences by military rank in housing, diet, and equipment at these camps.
* Determine if there were differences in African-American and Euro-American soldiers' housing. Some scholars have stated that African-American troops received inferior equipment (Berlin 1982:485; Quarles 1953:204). Determine if this can be documented in the archaeological record.
* Determine how slave families were fed and housed at refugee centers. Assess how their housing compared with other slave or free African-American housing. Assess the degree and nature of African-American resistance to authority in these camps.
* Identify variation in equipment used, housing lived in, and food consumed between earlier and later encampments. As was noted previously, the condition of Union soldiers is reported to have improved as the war continued, while that of

the Confederate soldiers deteriorated. Identify differences in housing and food consumption between temporary and permanent camps.

* Identify the nature of medical treatment within these camps. Identify the types of medicines and equipment that were utilized.

Domestic and Industrial Sites

As was noted above, the Civil War greatly affected the civilian population. Many farms and towns experienced hardships from severed trade ties and war-related damage, particularly in the early part of the war. Also, some houses and farms were commandeered by the army and used for military housing or storage. Some industries experienced hardships during the Civil War, while others prospered and expanded. The limited duration of the war makes these issues difficult, but not impossible, to investigate through archaeological research. The major impact of the Civil War on the civilian population was the end of slavery and the new labor systems and social relationships associated with this change.

* Identify the extent to which an agricultural or industrial site was associated with the expansion or contraction of the Civil War.
* Determine if a site was physically impacted by Civil War-related activities.
* Determine if a site was utilized by Union or Confederate troops.

10. MORTUARY ARCHAEOLOGY (BY ALEXANDRA D. BYBEE)

Since the mid-1990s, archaeologists working in Kentucky have considered historic cemeteries significant sources of data about past health, demography, and socioeconomic status. Excavation of historic cemeteries and the analysis of recovered human remains and artifacts can offer insights into mortuary behavior, material culture, demography, and health (Bybee 2003a, 2003b, 2004; Bybee and Richmond 2003; Bybee et al. 2004; Favret 2005, 2006; Miller 2007; Pollack and Killoran 2006; Stottman and Pollack 2006; Weitzel 2007).

Early American Views of Death

Prior to the nineteenth century, death in America was recognized as a natural, inevitable, commonplace reality (Habenstein and Lamers 1955:200). Attitudes toward death and treatment of the dead exhibited a strong continuity with traditions coming from medieval Europe (Stannard 1977). Over time, regional variations based on traditional European idealizations of death began to emerge in the American colonies (LeeDecker et al. 1995:120). During the Middle Ages, plagues, epidemics, and short life spans provoked a fear of and obsession with death, and much of this ideology influenced colonial New Englanders' perception of death. In Puritan traditions, death was considered a punishment

for sinful people, while also being viewed as a call to eternal life by God for the good (LeeDecker et al. 1995:121). Puritans believed the time of death was a time of judgment for the deceased, thus prayers for the dead were not made. Puritan funerals were simple happenings, marked solely by disposal of the dead. The strict, religiously skeptical Puritan views held by early colonists began to dissolve toward the end of the seventeenth century, giving way to a more relaxed view of death and the afterlife. Funerals became more elaborate affairs, with preaching, consumption of food and drink, firing of guns, and distribution of memorial gifts (Habenstein and Lamers 1955).

The Beautification of Death

The romanticism of the late eighteenth and early nineteenth centuries celebrated nature, and death was seen as part of the natural design, linking the deceased with the universe (Buikstra et al. 2000:18). This romantic view grew during the nineteenth century, bringing an idealization of death and heaven (Bromberg et al. 2000:148). Death was beautified, with rituals becoming more elaborate and the period of mourning prolonged. Mortuary items, such as gravemarkers and coffin hardware, began to incorporate symbols of beauty from the Romantic era. Coffins began to function not only as receptacles for the deceased, but allowed for more beautiful presentation (Bell 1990:55-58; Farrell 1980). The beautification of death was most prominent during the second half of the nineteenth century (Bell 1990:57), particularly the late 1860s through 1870s (Little et al. 1992).

Changes in the American view of death during the nineteenth century were fueled by urbanization, industrialization, and developments in medicine and science (Farrell 1980). Services associated with death, including the mass-production of coffins and coffin hardware, and the appearance of undertaking enterprises, aided in the reinterpretation of death (Farrell 1980). The increased sentimentality in death and dying created a market for cultural materials associated with the beautification of death movement, such as elaborate coffin hardware, and technological and transportation improvements enabled them to become affordable and available to all segments of the population. This, in turn, fueled the acceptance of the concepts of the beautification of death in American society (Bell 1990:57).

Origin of Family Cemeteries

The change in American views of death during the late seventeenth and eighteenth centuries was stimulated, at least in part, by the westward expansion of Americans into areas previously unoccupied by European-Americans, including Kentucky, North Carolina, Virginia, and West Virginia. A dispersed settlement pattern emerged during this period, with frontier populations scattered among rural farms and plantations. The dispersal of agricultural settlements across the landscape led to the use of small family burial plots within large rural landholdings (Bachman and Catts 1990; Stilgoe 1982). This pattern stood in contrast to European traditions, in particular those of British Protestants, that held that the dead be buried in community burial grounds close to churches. With the dispersal of farmsteads and plantations across the American frontier, this was not possible, as churches were not often built until a community was established

(Habenstein and Lamers 1955). The use of small family burial plots was a well-established American practice by the late eighteenth century (Sloane 1991). The family burial plots at George Washington's Mount Vernon and Thomas Jefferson's Monticello are well-known examples of this type of cemetery.

Traditional Southern Cemeteries

The southern folk cemetery has been characterized as a simple, nonsanctified family graveyard that is situated far from the confines of the church (Jordan 1982:13). Over time, and as settlement in an area intensified, families other than the founding family often interred their deceased in the same general location. These small cemeteries evolved gradually as people moved away from or into the area. The cemetery eventually became more communal, ending perhaps with several generations of an extended family or several nonrelated families.

The southern folk cemetery is unique to North America, and is derived from European, African, and possibly Native American mortuary customs (Jordan 1982; Ragon 1983). Single-family burial grounds are more common in the rural South than the North, and most likely originated on the grounds of plantations, where owners were often buried on their property (French 1975:72-74). The location of rural southern cemeteries also may have been influenced by fears of the danger of contamination from dangerous diseases, such as cholera, diphtheria, smallpox, and yellow fever, which were common on the American frontier from the seventeenth through nineteenth centuries.

The traditional Upland South folk cemetery is characterized by "hilltop location, scraped ground, mounded graves, east to west grave orientation, creative decorations expressing the art of 'making do,' preferred species of vegetation, the use of graveshelters, and cults of piety" (Jeane 1989:108, see also Jeane 1969, 1978, 1987). When gravemarkers are found, they are often pieces of fieldstone placed at either end of the grave, and a name or date will occasionally be inscribed. Some graves have only a wooden stake at the head of the grave. Jeane (1989:114) states that what is decidedly missing from Upland South folk cemeteries is the frequent use of commercially-produced gravemarkers of granite or marble.

Spatial Arrangement

Rural southern cemeteries are arranged spatially to reflect the Anglo-Christian burial tradition. Individuals are aligned with their heads to the west and feet to the east, enabling them to rise up and meet Jesus during the Second Coming as he arrives from the east, or to hear Gabriel's horn from that direction (Jordan 1982:30). Those committing unforgivable sins, such as suicide or murder, are occasionally aligned north to south as punishment. Wives are placed to the left of their husbands, following the Anglo-Christian account of Creation (Eve created from the left rib of Adam) (Jordan 1982:31).

Burial arrangements in rural southern cemeteries are usually in family clusters and rows. The family cluster includes blood relatives, or those related through marriage, centrally-located within the confines of a square or rectangular plot. Fences made of stone, brick, iron, wood, or bushes often border these plots (Jordan 1982). The row

arrangement consists of related or unrelated individuals buried in a series. A mixture of both spatial arrangements can be seen in many cemeteries (Winchell et al. 1992:27). The mixture of arrangements may be attributed to the use of a cemetery by multiple families, or by later generations of the same family. The cluster arrangement of a founding family in a cemetery may have become outmoded with the interment of unrelated or distantly related individuals.

* Identify the types of burial receptacles that were used during the Early Settlement/Frontier subperiod.
* Determine if variation in how the dead were treated within a cemetery represents preferential treatment at death, ethnicity, or other cultural factors.
* Identify the type of grave shaft an individual was interred in: two stage or "grave arch" (Atkinson and Turner 1987:47; Blakely and Beck 1982:188).
* Identify ethnic, national, religious, or behavioral traits that are exhibited by the arrangement of the graves, headstones, and objects interred with the dead and how the body was positioned within the grave.
* Determine the socioeconomic status of the burial population, as reflected by their headstones, coffin hardware, types of materials they were interred with, and their health.
* Assess the degree to which the cemetery conforms with the Beautification of Death movement of the late 1860s and 1870s.
* Determine if differences in mortuary practices can be documented between graves pre-dating and post-dating the coal and timber booms in Appalachia, and pre-dating and post-dating the Great Depression.
* Identify when embalming practices became popular.
* Determine what burial attire was popular for the periods represented.
* Determine if individuals were interred in shrouds or in everyday clothing.
* Determine the demographic profile and assess the overall health of the burial population (adult stature, nutritional stress, dental caries, and other pathological conditions). Identify differences between rural and urban populations.
* Staple carbon isotope ratios from two Kentucky cemeteries (Old Frankfort and Vardeman) are suggestive of high consumption of corn-based products (David Pollack, personal communication 2007). Determine the extent to which this pattern is reflected in other nineteenth century cemeteries.
* Utilize DNA to determine ethnic affiliation.
* The presence or absence of certain nonmetric traits in skeletal populations could be indicative of genetic relationships between the interred individuals. Assess the extent to which familial relationship between interred individuals can be inferred from a comparison of nonmetric traits.

MAJOR ACCOMPLISHMENTS

Since 1990, historical archaeology in Kentucky has experienced tremendous growth and has come of age. Not only have many historic sites been excavated, but a much greater variety of sites have been investigated including farmsteads occupied by poor and middle class families, slave cabins, and African-American neighborhoods. Prior to the 1980s, the focus of most historic archaeological studies were sites that had been occupied by wealthy individuals. Greater attention also has been directed toward the study of historic cemeteries. This work has contributed to our understanding of Kentucky history and provided new insights into the lives of families who are often not mentioned in history books.

One of the insights of the last 20 years is that many families living in rural Kentucky from the late eighteenth to the mid-nineteenth century were not as isolated as previously thought. Even during the early decades of settlement, many families continued to be well-articulated with the national consumer culture, adhering to the latest fashions, such as taking tea, and purchasing expensive clothing and furniture items. On the other hand, examination of archaeological data and documentary data, such as tax and land records, indicates that some farm families were investing more in land than material goods. Thus, families living in rural Kentucky were making decisions based on what they thought best for themselves.

Research conducted since 1990 also has demonstrated that farmsteads exhibit a great deal of variation in terms of structural layout, occupational history, and relationships between material culture and socioeconomic status. General patterns, such as outbuildings being located toward the back of the main house, are documented at most farmsteads. At some farmsteads, however, outbuildings were placed to the side or front of the house. At others, additional houses, some perhaps occupied by slaves, were located close to the main house. More complex plantations exhibit even more variation, such as the establishment of an open great space called an English Pleasure Garden, which would have influenced the placement of outbuildings.

The archaeology of African Americans in Kentucky has involved both Antebellum slave sites and Postbellum neighborhoods/communities. One of the more interesting findings has been that enslaved African Americans possessed a separate culture from mainstream Euro-American culture. They also were part of the consumer economy, not only as commodities themselves, but as participants in the consumption of material goods. This desire to be a part of and participate in mainstream consumer society also has been documented at Postbellum African American sites.

Historic cemeteries research has greatly expanded since 1990. This work has shown that within urban contexts, pre-Civil War cemeteries were often integrated. Moreover, within-community socioeconomic differences existed among the white as well as African-American populations. Analysis of skeletal remains of both ethnic groups has shown that most individuals performed a lot of manual labor, and that life during the nineteenth century was difficult. Physical hardship is indicated by pathologies, incidents

of malnutrition or disease, and high infant mortality rates. Yet, even the poorest took care of the aged and disabled.

Though a great deal has been learned in the last 20 years, there is still much that we do not know about Kentucky's history. Research on historic archaeological sites will continue to focus on the history of those who did not make it into the history books and to supplement and enrich the work of historians. The richness of historical archeology is rooted in its synthesis of oral historical, documentary, and material culture data, but the methods for achieving this synthesis are still a work in progress. One important goal for the next 20 years should be to refine our integration of multiple data sets, and to set our sights on broader interpretive studies that build from the impressive body of data that has been generated.

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