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**CAPITALISM, REGIONAL DEVELOPMENT, AND PLACE FORMATION:
AN ANALYSIS OF THE UPPER TENNESSEE RIVER VALLEY, 1860-1900**

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

John Edward Benhart, Jr.

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DEDICATION

This dissertation is dedicated to my parents
Jack and Pat Benhart,
my brother and sister, Bobby and Cristen,
and my wife, Jacque Benhart
who have always believed in me and provided
support, encouragement, and love when they were
most needed.

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ABSTRACT

The full importance of investment and capital as a driving force in American life and the development of landscapes is only beginning to be understood by mainstream American geography. The regional approach, important in testing theories and uncovering linkages in life processes has the potential to contribute to the understanding of how capitalism shapes landscapes. It is perhaps in the formation of regional economies and landscapes that capitalism most thoroughly influences the worlds in which people live; it determines their housing, their jobs, their environs.

This dissertation examines the impact of different phases of capitalism on the Upper Tennessee River Valley; present-day Roane and Loudon Counties, Tennessee. The Upper Tennessee River Valley in 1995 is in many ways a fairly ordinary rural area, similar to many locales in the Great Valley of the eastern United States: the region is not in the immediate hinterland of any major metropolitan area; agriculture and small-scale industry are predominant; employment opportunities are limited. Yet, if we take a look at the region's history, the period between the close of the Civil War and the turn-of-the-century emerges as one of interest and importance. It was during this time that factory-scale industrial production began in the region,

and that its present-day central places -- Rockwood, Harriman, and Lenoir City -- were established. The story of the Upper Tennessee River Valley reveals much about late nineteenth and early twentieth century America, and especially about how regions and cities develop during different phases of capitalism.

Most of the capital for regional development during the study period came from outside of the region. Northern businessmen and financiers were drawn to the Upper Tennessee River Valley by natural resources, a positive investment environment, and key development proponents. As the brand of capitalism practiced in the region became more advanced during the latter 19th century, its effects became more pervasive. Industrial capitalists had access to limited amounts of capital, and were content with establishing communities to shelter workers needed for production. Corporate capitalism was characterized by comprehensive development projects designed to accrue profit from a multitude of activities. Thus, the urbanization process was more thoroughly planned, administered, and orchestrated during this phase.

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Introduction

CAPITAL INVESTMENT and REGIONAL PLACE-MAKING

At the 1981 Annual Meeting of the Association of American Geographers, John Fraser Hart devoted his presidential address to regional geography. In it, Hart stated: "regional geography is the proving ground where theories are tested empirically...the region provides the essential unifying theme that integrates the diverse subdisciplines of geography."¹ Regional historical geography has the potential to uncover the linkages in a region at a certain time (synchronic analysis), as well as elucidate the mechanisms of change and their transmission (diachronic analysis).²

The full importance of investment and capital as a driving force in American life and the development of landscapes is only beginning to be understood by mainstream American geography. Much of the contemporary analysis of the influence of capitalist activity on spatial patterns has been conducted by Marxist geographers, who have sought to elucidate the "specific patterns and processes [that] characterize capitalist society, and...how they change with the further development of capitalism."³ They have argued

¹John Fraser Hart, "The Highest Form of the Geographer's Art", *Annals of the Association of American Geographers* 72 (4): 1982, 557-559.

²Aaron Kellerman, "Structuration Theory and Attempts at Integration in Human Geography", *The Professional Geographer* 39: 1987, 267-274.

³Neil Smith, *Uneven Development: Nature, Capital and the Production of Space* (Cambridge: Basil Blackwell, Inc., 1990), xii.

that under capitalism, the economic system is dominant and is the basic organizer of space, and that therefore "changing any part of society...involves changing the relations of production that guide human development."⁴ A variation on this view is expressed by Massey, who advocates a transition from analyzing geographical space as a passive surface to recognizing its role in influencing investment patterns and concomitant social conditions.⁵

Recently, geographers who do not fully embrace Marxist arguments have also begun to explore the importance of capital to the formation of spatial development patterns. Mosher, in her study of Vandergrift, Pennsylvania, analyzed the impact of corporate capitalist business methods on urban development, settlement patterns, and industrial production in a local context.⁶ Researchers from other disciplines, such as Olivier Zunz and Alfred Chandler, Jr. have explored the ramifications of corporate capitalism, focusing on business organizational framework and the development of the managerial class, respectively.⁷

The regional approach, important in testing theories and uncovering linkages in life processes, has the

⁴Richard Peet and Nigel Thrift, "Political Economy and Human Geography," in R. Peet and N. Thrift, Eds., *New Models in Geography, Volume One* (London: Unwin Hyman, 1989), 13.

⁵Doreen Massey, *Spatial Divisions of Labour: Social Structures and the Geography of Production* (London: MacMillan Publishers, 1984).

⁶Anne Mosher, "Capital Transformation and the Restructuring of Place: The Creation of a Model Industrial Town." Ph.D. dissertation, The Pennsylvania State University, 1989.

⁷Olivier Zunz, *Making America Corporate, 1870-1920* (Chicago: The University of Chicago Press, 1990); Alfred Chandler, Jr. *The Visible Hand: The Managerial Revolution in American Business* (Cambridge: Harvard University Press, 1977).

potential to contribute to the understanding of how capitalism shapes landscapes. It is perhaps in the formation of regional economies and landscapes that capitalism most thoroughly influences the worlds in which people live; it determines their housing, their jobs, and their environs. As Smith states "capitalism transforms the shape of the entire world...no God-given stone is left unturned...no living thing is unaffected."⁸

Moreover, it is within regions that one might expect to see capital investment's relationships to culture, folkways, and collective mores work themselves out. Harvey believes that "capital...reaches out to dominate the living process -- the reproduction of labor power -- because it must."⁹ This requires innovation that "must extend to lifestyles, organizational forms (political, cultural, and ideological as well as bureaucratic, commercial, and administrative) and spatial configurations."¹⁰ The regional approach provides for the analysis of capitalism's impact on these types of phenomena within a defined, relatively cohesive spatial area.

⁸Smith, *Uneven Development*, xvi.

⁹David Harvey, *The Urbanization of Capital: Studies in the History and Theory of Capitalist Urbanization* (Baltimore: The Johns Hopkins University Press, 1985), 27.

¹⁰*Ibid.*, 126-27.

Economic Transformation and Phases of Capitalism

Capitalism is not monolithic or unchanging. It is constantly evolving in an effort to "meet the urgent demands of...crisis -- to open up new opportunities for super-profits, to find the new ways to maintain social control, to stimulate increased production and consumption."¹¹ The nineteenth century was an era of particularly rapid change, in that capitalism seems to have gone through three distinct stages: mercantile, industrial, and corporate.¹²

Mercantile capitalism, the economic system under which the European settlement of the North American continent took place, was involved in the buying and selling of various commodities but had little if any connection to their production. It created a supranational space economy within which resources, people, and products could be mobilized through the operation of price-fixing markets.¹³

Merchants bought cheap in order to sell high, and mediated between geographically-dispersed producers at low levels of development. Their role was to lower the cost and speed up the circulation of commodities (as well as capital) by specializing in the marketing function.

¹¹Edward W. Soja, *Postmodern Geographies: The Reassertion of Space in Critical Social Theory* (New York: Verso, 1989), 34.

¹²*Ibid.*, 3-5.

¹³David Harvey, *Social Justice and the City* (London: Edward Arnold Ltd., 1973).

Profits were accrued in the efficient performance of this role.¹⁴

The early phases of the industrial capitalist system which emerged out of the mercantile system in the United States after 1830 were marked by a sustained effort on the part of capitalists to control production and to buy labor in the same way in which raw materials were bought: as a definite quantity of work, completed and embodied in the finished product.¹⁵ The basic components of the industrial capitalist economic system were factories, mills, and workshops which provided employment to thousands of workers, and in doing so stimulated the urbanization process.

Within the industrial capitalist system "proprietary-competitive" business entities were the predominant form of productive property organization. These were partnerships or proprietorships that owned **and** managed single productive facilities. Success in competition between these enterprises depended upon the exploitation of labor and natural resources as productive inputs, the invention of increasingly efficient and profitable mass production technologies, and the conception of products that would meet market demand.¹⁶ The balance of these components for success varied by industry. While the production costs of

¹⁴Harvey, *The Urbanization of Capital*, 37-40.

¹⁵Harry Braverman, *Labor Monopoly and Capital: The Degradation of Work in the Twentieth Century* (New York: Monthly Review Press, 1974).

¹⁶Martin Sklar, *The Corporate Reconstruction of American Capitalism, 1890-1916* (Cambridge: Cambridge University Press, 1988).

some manufacturers were dominated by the costs of obtaining resources or labor, others required large amounts of investment capital to fund the construction of production facilities and technical innovation.

Manufacturers in the most capital-intensive industries such as iron and steel, railroads, and textiles began to increase production capacity in order to achieve economies of scale. They also began to integrate resource acquisition, production facilities, and marketing within single business entities in order to improve production and distribution. Forward integration by manufacturers took the form of expansion into the warehousing and sales of products. Backward integration was attained by gaining control over the processes that preceded manufacturing, such as resource extraction and refining.¹⁷

Vertical integration was an expensive proposition for manufacturers and was dependent upon increased capital accumulation. As the problems of capital inflexibility converged with the intensely competitive conditions of the late nineteenth century, pressures began to develop that were too great to be withstood by old-style business institutions. Capital-intensive producers began to reorganize legally into ownership structures that had large umbrella companies owning smaller subsidiaries. The business entity that emerged from this process, the corporation, was based upon limited-liability ownership by

¹⁷Zunz, *Making America Corporate*, .

several individuals. Investment capital was generated by the corporation as potential owners purchased corporate stock, and in turn provided funds for vertical integration, facility retooling, or product development.¹⁸ The emergence of a national market for industrial securities was a key development, for without it the spread of stock ownership would have been delayed, and the creation of large industrial mergers would have been very much more difficult.¹⁹

As the corporate business form emerged, other organizational changes occurred within business enterprises. One of the most significant of these was the functional separation between owner-stockholders and managers within companies. Corporations developed management structures that were hierarchical in nature with stockholders and board directors at the top, and plant managers, superintendents, foremen, skilled, semi-skilled and unskilled workers following respectively at lower levels. To coordinate the flow of information through this hierarchical management structure, management practices and accounting procedures were routinized and standardized. Headquarters and regional management planned production strategies and oversaw the movement of raw, semi-finished and finished materials to and from various resource

¹⁸Leslie Hannah, *The Rise of the Corporate Economy* ; and Zunz, *Making America Corporate*.

¹⁹Thomas R. Navin and Marian V. Sears, "The Rise of a Market for Industrial Securities, 1887-1902," *Business History Review* Vol. XIX (June 1955), 105-138.

extraction areas, production points, and markets on a weekly basis. Top echelon company managers and directors assembled periodically to assess business performance and formulate future production and marketing policy. Through this corporate system information moved upward to top-level management, and policy flowed downward from the top through the hierarchy to individual production and work sites. This constant flow of information and policy was ensured by the growing number of white-collar middle managers and clerical workers employed by companies.²⁰

The impact of corporate systems in the United States were felt on both large and small scales. From a large scale perspective, corporate systems translated spatially into the creation of linkages between corporate headquarters and production sites as well as those between resource extraction sites, production points, distribution and marketing facilities. Control over the system emanated from corporate headquarters usually located in large cities. Production sites and other corporate facilities, although sometimes located close to corporate headquarters, were more often widely dispersed. It was during this period of corporate integration of production and marketing functions that American cities and surrounding regions became economically linked and functionally interdependent within the national economic system.²¹ At smaller scales,

²⁰Zunz, *Making America Corporate*.

²¹Michael P. Conzen, "The Maturing Urban System in the United States, 1840-1910" *Annals of the Association of American Geographers* 67 (1977): 88-108.

the advent of corporate capitalism spurred physical and social change that transformed localities and societies.

Accompanying the modification of production processes and technological innovation was a reevaluation of labor. Corporate efficiency experts and managers began to see labor as a production cost to be minimized. New production technologies and the accompanying reassessment of labor intentionally deskilled the workforce. Consequently, occupations within many productive facilities became skewed toward semi-skilled and unskilled positions (which paid less) as new production techniques were introduced.²²

The advent of the corporate economy met with protest. Tensions existed between the new corporate mores and pre-existing economic and social practices. Skilled craftsmen who once had powerful roles within the production process were often reluctant to accept corporate wage scales and work regimes. They organized unions and disrupted production. Corporations also found that some production sites did not fit very well into their schemes, when local attributes such as property ownership patterns conflicted with company goals. The corporate system combatted resistance to its agenda on two fronts. Within the productive realm, plants were rebuilt and the work structure was modified to phase out troublesome jobs and work relationships. In relation to labor itself, some

²²Jeffery Haydu, *Between Craft and Class: Skilled Workers and Factory Politics in the United States and Britain, 1890-1922* (Berkeley: University of California Press, 1988); and Hannah, *The Rise of the Corporate Economy*.

manufacturers attempted to influence social relations away from the workplace in the community and home by providing housing, building infrastructural facilities, and controlling commercial functions on tracts of land adjacent to their factories. In the extreme, some manufacturers built company towns, where not only the built environment was under the control of the corporation, but also the political, social and religious institutions.

Capitalist Systems and Place Making

Spatial or regional inequality has always existed in relation to the attractiveness of a particular area or areas to the dominant form of economic activity. At any given point in time, there is an uneven distribution of the conditions and resources necessary for profitable production. This unevenness plays a major role in the distribution of investment, as some places attract capital and others don't according to the needs of specific economic and production technologies.

This geographic inequality is relative. It will respond to changes in the geographic distribution of the requirements of production. Examples of such change would be things such as actual changes in the distribution of population (labor force), input resources, or changes in relative distances caused by innovations in transport and/or communication. Also, the pattern of spatial

inequality may be altered as a result of changes in the requirements of the production process itself. In other words, technological innovation may cause change in the locational demands of profitable economic and productive activity over time. Such innovations and changes in the requirements of production are usually the direct result of actors operating in response to the profit motive in capitalist economies.

During any particular period, new investment in economic activity will be geographically distributed in response to the pattern of spatial differentiation which is based on the aforementioned factors. This response by actors in capitalist economies to the inequality of geographic opportunities will vary as different forms of economic activity incorporate or use the uneven spatial surface in order to maximize profits. The response to geographic inequality may also deviate according to the structure of the ownership of capital (for example, small single production plants versus integrated industrial complexes under single ownership). The use of the earth's spatial surface will be a product of the interaction between the existing characteristics of spatial differentiation and the requirements at a particular time of the particular process of production. Also, since different industries will use geographic variation in different ways, it follows that those industries will

subsequently contribute to the formation of different patterns of spatial inequality.²³

The mercantile capitalist system dominated the initial era of settlement in the United States. Merchants were the driving force of the early American economy, buying and selling goods in regions. They were, in effect, middlemen who gauged supply and demand of commodities, and attempted to obtain profit from the buying-selling process.²⁴

During the colonial and early post-colonial era, the largest cities that were products of this system were coastal (Boston, New York, Philadelphia) and geared towards international trade. Large numbers of settlers had moved westward by the turn of the nineteenth century, however, and frontier regional economies began to develop. The urban places that were established at interior locations during the early 1800s were those accessible by river or road. Farmers brought surplus agricultural goods such as corn, wheat, eggs, cotton, and meat to town by wagon, or down river by flatboat. Merchants at country stores paid or extended credit to farmers for these items. Later, the merchant sold agricultural and other goods to incoming

²³Richard Walker, "Class, Division of Labour and Employment in Space," in D. Gregory and J. Urry, eds., *Social Relations and Spatial Structures* (London: MacMillan Publishers, 1985), 164-189. Massey, *Spatial Divisions of Labour*; Massey, "In What Sense a Regional Problem?," *Regional Studies* 13 (1979), 233-243.

²⁴William N. Parker, *Europe, America, and the Wider World: Essays on the Economic History of Western Capitalism, Volume 2 - America and the Wider World* (New York: Cambridge University Press, 1991), 112-115; Peter d'A. Jones, *The Consumer Society: A History of American Capitalism* (Baltimore: Penguin Books, 1965), 19-23, 31-34.

settlers, and to those passing through on their way west.²⁵ Merchants were not explicitly involved in place-making, *per se*, as they had relatively small amounts of excess capital and little stake in urban aspects other than the market function.

The transition from mercantile to industrial capitalism was spurred by the realization that the subcontracting and putting out systems of production were inherently inefficient, as well as by the development of new types of machinery. Problems of irregularity of production, loss of materials in transit, slowness of manufacture, lack of uniformity, and uncertainty of the quality of products manufactured were frequent. Centralization of industrial employment was a solution, because it allowed for the development and enforcement of regular hours of work, and the monitoring of worker efficiency and the quality of commodities produced.²⁶

In order for centralized production to be successful, a stable labor force was needed, preferably proximate to the production facility. In established urban places, factory owners responded to worker need for housing by providing shelter that would provide the right mix of skill types for production. In and around nineteenth century American cities, mill owners built a variety of housing

²⁵Sam B. Hilliard, "A Robust New Nation, 1783-1820," in Robert D. Mitchell and Paul A. Groves, Eds., *North America: The Historical Geography of a Changing Continent* (Savage, MD: Rowman & Littlefield Publishers, Inc.), 170-171.

²⁶Braverman, *Labor Monopoly and Capital*, 63-67.

types to be used by workers. In a typical town or city, for instance, rows of small uniform structures were built on land adjacent to the mills. Larger houses were constructed for foremen at advantageous positions, from which the home activities of mill workers could be monitored and bosses could easily keep track of work attendance.²⁷ The result was the creation of distinct districts of company housing, which were added to preexisting urban patterns.

The involvement of factory owners in providing housing was not limited to large urban areas. Throughout the nineteenth century, manufacturers located their production facilities at rural sites near raw materials and power sources. In these cases, pools of labor and housing stock were limited or nonexistent. Workers and independent developers might eventually produce sufficient housing, but in many instances industrialists took matters into their own hands, recruiting labor and providing housing for them in isolated and often self-contained company towns. Industrial capitalists spent time and money establishing these places because they believed that their efforts would be rewarded through more efficient industrial production and increased profits.²⁸

²⁷Daniel Nelson, *Managers and Workers: Origins of the New Factory System in the United States, 1880-1920* (Madison: The University of Wisconsin Press, 1975), 90-95.

²⁸Ibid; Crandall A. Shifflett, *Coal Towns: Life, Work, and Culture in Company Towns of Southern Appalachia, 1880-1960* (Knoxville: The University of Tennessee Press, 1991), 33-38.

The scale of capitalist enterprise increased significantly as corporate capitalism emerged in the late nineteenth century. The concentration and centralization of capital in the corporate structure created situations which had not previously existed. Corporate management became responsible for the administration of a myriad of activities, at disparate locations.²⁹ Among the activities important to corporations was the creation and administration of places, where business functions such as production could be undertaken with the utmost efficiency.

Because corporations had developed innovative ways of increasing their access to capital (such as open ownership structure), they had larger amounts of money to spend on place-making than their industrial capitalist predecessors. Industrial capitalists hoped to increase efficiency and profit margin through gathering labor and machinery in one place, and closely monitoring the production process. Thus, their access to capital limited by personal wealth, place-making was usually unplanned and undertaken on a cost-minimization basis. Corporations, on the other hand, viewed place-making as an integral part of their profit-making strategies. Large industrial corporations, confronted with the logistical demands of coordinating multiple locations, dispersed resources, and distant and sizable markets, sought to shape and control production

²⁹Chandler, Jr., *The Visible Hand*; Sklar, *The Corporate Reconstruction of American Capitalism*; Zunz, *Making America Corporate*.

sites. This was accomplished through the preplanning of communities, as well as investment in other aspects of the reproductive sphere³⁰ (such as housing, public infrastructure, stores, churches).³¹ Some corporations utilized variations of this strategy, to accrue profit from the place-making process itself.

Despite the previous discussion, place-making is still a largely unexplored process. The capital phases model is a general framework that provides some explanation of the process, however, it still needs confirmation as well as more developed details and nuances to provide satisfactory explanation. The goal of this study is to shed light on capitalist urbanization and development processes. The analysis uses the synthesizing and integrative characteristics of the regional approach to gain a better understanding of capitalist place-making, and ultimately, of the operation of capitalism itself.

³⁰The term *reproductive sphere* refers to the those activities undertaken by institutions in order to enforce a particular order and/or a particular vision of reality (for example, companies intentionally creating conditions they believe are conducive to the continuance of efficient industrial production). See Richard Peet and Nigel Thrift, "Political Economy and Human Geography," in R. Peet and N. Thrift, Eds., *New Models in Geography, Volume One* (London, Unwin Hyman, 1989), 3-29; Ray Hudson and David Sadler, "Contesting Works Closures in Western Europe's Old Industrial Regions: Defending Place or Betraying Class?," in M. Storper and A.J. Scott, Eds., *Production, Work, Territory: The Geographical Anatomy of Industrial Capitalism* (Boston: Allen & Unwin, 1986), 172-193.

³¹Clyde Griffin, "Community Studies and the Investigation of Nineteenth Century Social Relations," *Social Sciences History* 10 (1986), 315-338; Frances G. Couvares, *The Remaking of Pittsburgh: Class and Culture in an Industrializing City, 1877-1919* (Albany: The State University of New York Press, 1984); Stanley Buder, *Pullman: An Experiment in Industrial Order and Community Planning, 1880-1930* (New York: Oxford University Press, 1967).

The Study Area

This study examines the impact of the different phases of capitalism on the Upper Tennessee River Valley; present-day Roane and Loudon Counties, Tennessee (Figures I.1, I.2). The Upper Tennessee River Valley in 1995 is in many ways a fairly ordinary rural area, similar to many locales in the Great Valley of the eastern United States: the region is not in the immediate hinterland of any major metropolitan area; agriculture and small-scale industry are predominant; employment opportunities are limited. Yet, if we take a look at the region's history, the period between the close of the Civil War and the turn-of-the-century emerges as one of interest and importance. It was during this time that factory-scale industrial production began in the region, and that its present-day central places -- Rockwood, Harriman, and Lenoir City -- were established. The story of the Upper Tennessee River Valley reveals much about late nineteenth and early twentieth century America, and especially about how regions and cities develop during different phases of capitalism.

The Upper Tennessee River Valley was profoundly shaped by the three phases of capitalism which were dominant in the nineteenth century, and these phases are relatively easy to isolate when analyzing its history. The mercantile capitalist phase was dominant in the Upper Tennessee River Valley until the close of the Civil War (1865). During the

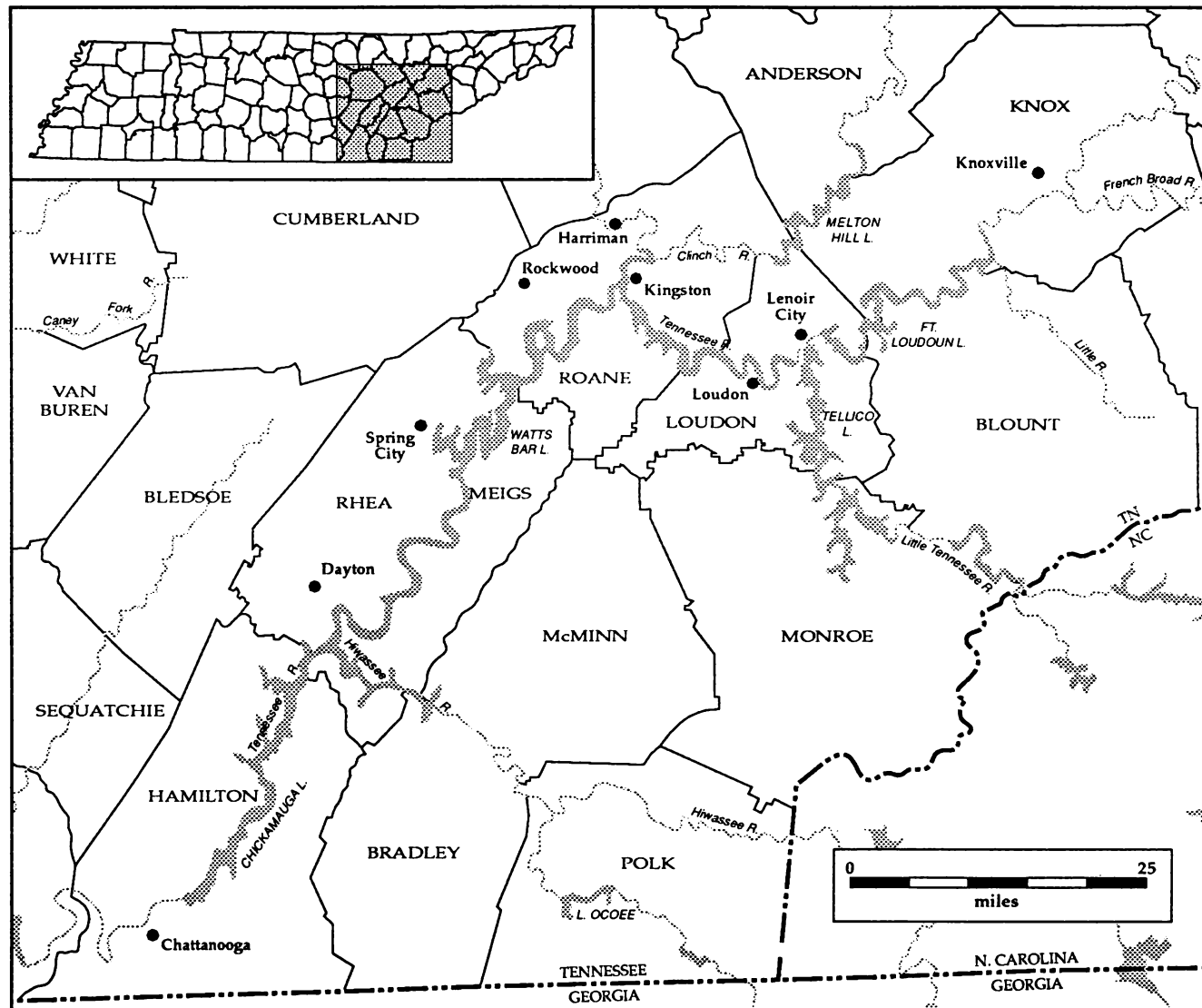


Figure I.1. The Regional Context: East Tennessee

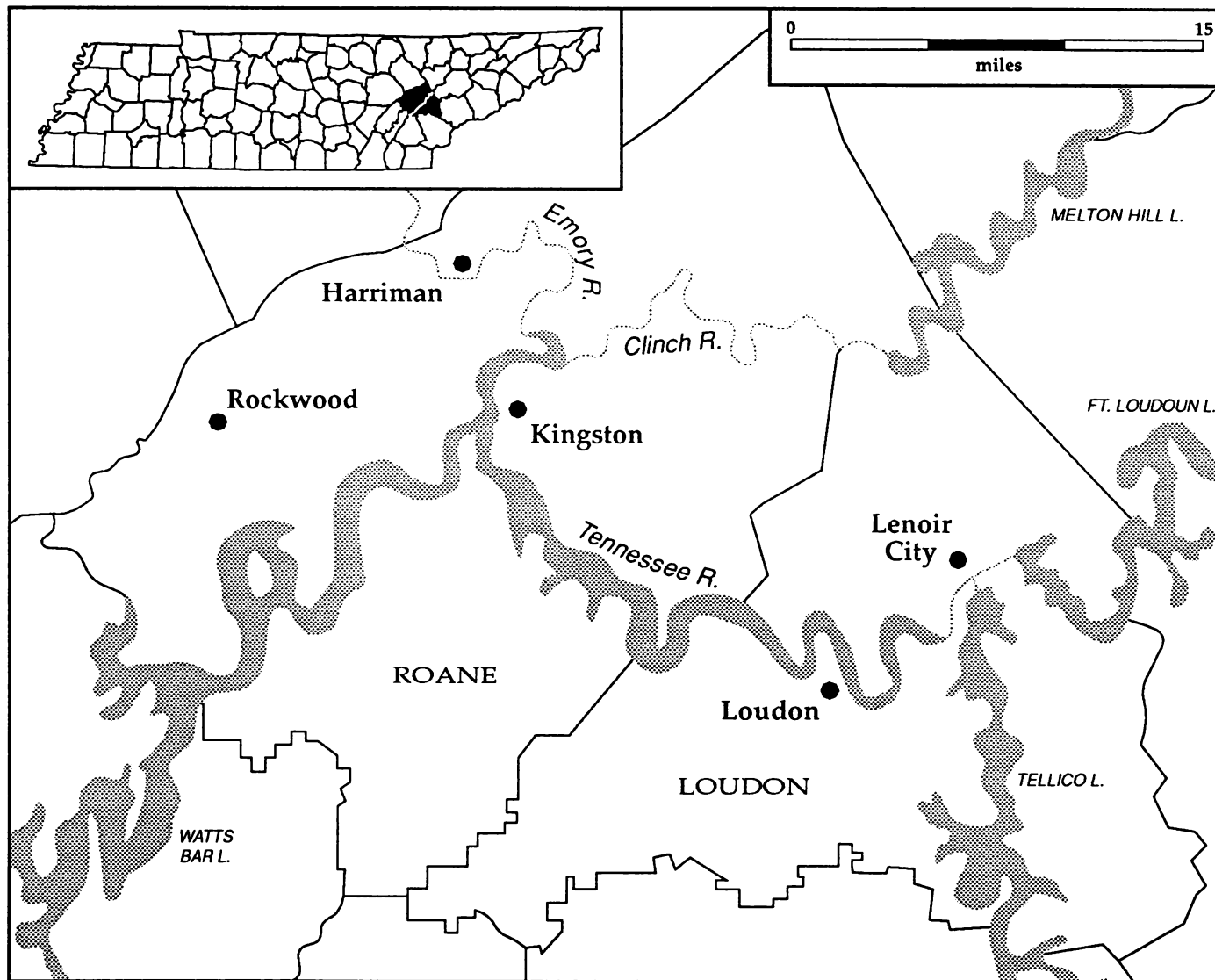


Figure I.2. The Regional Context: The Upper Tennessee River Valley

antebellum era, the Appalachian Mountains were a barrier to immigration from the east. Settlers who traveled into the region via the Great Valley found little flat, fertile land. Many of these migrants moved on, farther to the south and west, in search of better opportunities. The ones that stayed engaged in mixed-use agriculture on small valley farms. This agricultural economy was administered by a few important merchants in small towns close to the region's three connected rivers -- the Clinch, the Emory, and the Tennessee (Figures I.1, I.2).

The industrial capitalist phase in the Upper Tennessee River Valley began with the activities of former Union soldiers, who initiated the first factory-scale industrial production in the region in 1867. These industrialists were enticed to invest in the region by the availability of coal and iron ore deposits in and around Walden's Ridge. They constructed manufacturing facilities close to these mineral deposits, and established a community in an effort to facilitate the production process.

Land companies began the corporate or advanced capital phase in the region in 1889. Attracted by industrial possibilities, they came into the Upper Tennessee River Valley and purchased hundreds of thousands of acres of land as part of their development schemes. Each land company had access to large amounts of capital to use for development, and each initiated comprehensive development,

including resource extraction, industrial production, and the establishment of cities.

The Transformation of a Region

Prior to the Civil War, the economy of the Upper Tennessee River Valley was dominated by agriculture. In 1860, the total cash value of farms in Roane County, Tennessee was over 3.4 million dollars, while the capital invested in all manufacturing establishments was less than \$338,000.³² The industry that did exist at this time was largely involved in the processing of agricultural products. Agriculture-based industries such as flour milling, liquor distillation, leather production, and wool carding accounted for about fifty-five percent of the slightly less than \$294,975 in manufacturing goods produced in Roane County in 1860.³³

By 1890, the estimated value of manufactured goods almost doubled that of agricultural goods in Roane County. The cash value of farms in the county and the value of crops produced on them had leveled off since 1870, while the capital invested in manufacturing had risen sharply over the same period.³⁴ Moreover, by 1880, Roane County

³²U.S., Department of Commerce, Bureau of the Census, *Eighth Census, 1860: Agriculture* (Government Printing Office, 1865), 136; U.S. Department of Commerce, Bureau of the Census, *Eighth Census, 1860: Manufactures of the United States in 1860* (Government Printing Office, 1865), 572.

³³Bureau of the Census, *Eighth Census, 1860: Manufactures*, 572.

³⁴Bureau of the Census, *Ninth Census, 1870, Tenth Census, 1880, Eleventh Census, 1890: Agriculture; Ninth Census, 1870, Tenth Census, 1880, Eleventh Census, 1890: Manufactures*.

had more capital invested in iron and steel production facilities (\$700,000), and more workers employed in the production of those commodities (400) than all other counties in the state of Tennessee except for Hamilton County, where the city of Chattanooga was growing rapidly.³⁵ Twenty years later in 1900, the census reported that the county ranked eighth in capital invested in manufacturing establishments in the state, but only twenty-eighth in population.³⁶

These statistics illuminate the fundamental changes that took place in the region during the decades following the Civil War. They do little to indicate why these changes occurred or what their economic and spatial consequences were. They also give no hint of the nature of the places created, or of their people. These unanswered questions provide the structure for a geographical interpretation of regional transformation and place making in the Upper Tennessee River Valley.

³⁵Bureau of the Census, *Tenth Census, 1880: The Manufacture of Iron and Steel*, 30-31.

³⁶ Bureau of the Census, *Twelveth Census, 1900: Population, Manufactures*.

A Conceptual Context for Understanding Regional Transformation and Place Formation

Harriman, Rockwood, and Lenoir City are a few of many small cities found in the Upper Tennessee River Valley northeast of Chattanooga and southwest of Knoxville (Figure I.1, I.2). These places are different from their neighbors in that they are all company towns. They were created by business enterprises that, to varying degrees, owned production sites, housing, infrastructure, and commercial facilities. Rockwood began as a by-product of the Roane Iron Company, the first large-scale manufacturing facility to locate in the region, founded by former Union army officers in 1867. Harriman, Lenoir City, and Cardiff were planned towns, developed as part of large proposed industrial complexes by *land companies* during the 1890s. The common thread among these towns is that their development was based almost solely on the intended exploitation of the minerals of the region for use in the large-scale production of iron, steel and other heavy industrial products. Each was a product of the economic transformation that was taking place in the Upper Tennessee River Valley during the post-Civil War period.

The economy of the region was transformed from one that was agriculture-based to one that was industry-based. This change was a product of successive "rounds" of capital investment. The rationale and actions of business

organizations: the Roane Iron Company, the East Tennessee Land Company, the Lenior City Company, and the Cardiff Coal and Iron Company, were responses to and products of the economic, political, social, historical, and geographic contexts in which they operated. The regional transformation that took place in the Upper Tennessee River Valley must be explained in terms of the varying situations within the iron and steel industry, the national financial market, and the national transportation network, as well as prevailing societal attitudes and values as they emerged in East Tennessee and the industrializing Northeastern United States after 1865.

The transformation of the economy of the Upper Tennessee River Valley between the close of the Civil War and the beginning of the twentieth century can be viewed as the result of three distinct rounds of capital investment. The first was in effect in the region prior to the Civil War, and was predicated upon the buying and selling activities of merchants. Little resource processing was undertaken during this round. The second round, which took place in the period between 1865 and 1885, had characteristics of early industrial capitalism: in general, industrial companies had restricted access to capital and operated on thin margins of profit. It resulted in the operation of an iron production facility (the Roane Iron Company) and the founding of a community (Rockwood, Tennessee). The third, in the late 1880s and early 1890s,

exhibited more sophisticated use of capital, and produced three resource-based industrial complexes and three communities (Cardiff, Harriman, and Lenoir City). I argue that the different ways in which capitalists operated during the three rounds determined why capital was funneled into the Upper Tennessee River Valley, and how capital was used differently during the three respective investment periods to ultimately create different types of places (i.e. Rockwood, Harriman, Cardiff, and Lenoir City).³⁷

This chapter presents an outline of regional transformation as it occurred within the context of the advent of corporate capitalism in the United States in the period between the close of the Civil War and the beginning of the twentieth century. In this outline, I identify two conceptual and spatial themes that tie regional transformation and place making to the way in which capital is accumulated and utilized. The ways in which these themes were played out in various industries and the Upper Tennessee River Valley during the late nineteenth and early twentieth centuries are investigated in subsequent chapters.

³⁷It should be noted that although these rounds of investment are being viewed as distinct and separate, it is recognized that they are related. The success of the earlier capital outlay in production and accumulating profit served as an impetus to the second later period of investment. They stand out in the region's history because no other capital investment of any magnitude has occurred there in the last century, leaving a settlement landscape in large part created in the mid to late nineteenth century.

Spatial Themes in Regional Transformation and the Creation of Urban-Industrial Places

Two interlocking spatial themes emerge from this discussion of capital phases and place-making.

Theme I: Access to Capital and Urban-Industrial Development

The rise of corporate capitalism encompassed changes in the organization makeup, management, financing, and spatial arrangement of American business. Between the small, single plant company which predominated in the early part of this period (the late 1860s and early 1870s), and the large, integrated corporate system which came to the fore in the early twentieth century, there were variations in business operation methods and techniques which were attempts to accrue profit more efficiently. Not the least among these were methods of financing business operations.

An analysis of regional change in the Upper Tennessee River Valley indicates that companies involved in transforming the economy and landscape of the region were intermediate variations in the spectrum of movement toward corporate capitalist financing methods. The second round of capital investment in the region, which occurred during the late 1860s and early 1870s, basically followed the early industrial capitalist model in which small businesses and production facilities were owned by one family or a

small group of people and produced for local and regional markets. The capital for this round of investment came from outside the region, mostly from former Union soldiers that were exposed to the area during the Civil War. These men had access to personal capital, and that of smaller regional financial institutions (Chattanooga and Indianapolis banks, for example). Also, however, local actors and the Tennessee state government created an environment that encouraged industrial capital investment during the early post-Civil War period.

Nevertheless, small businessmen faced two general financing problems. First, risk capital for expansion was difficult to obtain. Owners of small industrial enterprises frequently had to borrow short-term money for long-term investment, in the hope they could repay their loans out of large immediate earnings. This accounts for the fact that they frequently went bankrupt during bad times. Yet access to long-term financing from outside sources was nearly impossible because few investors were willing to put money into small enterprises and few owners would let contributors have any voice in the business. Second, it was difficult for an owner of fixed capital to transfer any part of his/her investment to an outsider. Even a highly successful business enterprise might not attract buyers, because to run a such a business required specialized skills in addition to capital. These skills were usually possessed only by persons already involved in

the industry. Consequently, potential buyers were to be found only among rivals, which limited the opportunity to sell to a merger with the firm of a competitor.³⁸ Clearly, then, the owners of American industrial business concerns during this period were in a disadvantageous position with respect to obtaining capital for expansion or liquidating their fixed investment.

The search for capital flexibility by American businessmen led to, among other things, the "trust" movement of the 1880s. The first American industry to develop the trust form of organization was oil refining under the leadership of John D. Rockefeller's Standard Oil. In 1882, the owners of several refineries agreed to turn their stock over to a group of trustees, receiving in exchange as evidence of ownership, pieces of paper known as "trust certificates." The board of trustees was then specifically authorized to act as a board of managers with the power to make operating and investment decisions in the best interests of the holders of the trust certificates (the former refinery owners). Several advantages were to spring from this arrangement. Strength from unity was an one, both against other refiners and against violent price fluctuations. Also, the trust arrangement was thought to be a method of circumventing the restrictions of the common law against corporations doing business in several states. Not among Standard Oil's original objectives was the search

³⁸Navin and Sears, "The Rise of a Market for Industrial Securities." 28

for capital liquidity. The organization never sought an active public market for its trust certificates. Standard Oil had started a trend, however, and other businessmen, recognizing the marketable value of the new financial instrument, seized the opportunity to raise capital and sold their certificates to the public.³⁹

Access to large reserves of capital, specifically through dealings with trust companies in American financial centers⁴⁰, made possible the larger-scale economic transformation and place formation that occurred in the Upper Tennessee River Valley during the second round of capital investment which occurred during the early 1890s. Land companies, which were the agents of industrial development and community formation during the second investment round, were able to operate at a large-scale because they had the capital to do so. This is no small point, because in general capitalists and industrialists in Tennessee and the Upland South did not have very large reserves of capital during this period, nor did they have access to any institutions that did. The land companies obtained their capital from important American financial centers outside the region, where large sums of money could be obtained using sophisticated financial methods. The

³⁹Navin and Sears, "The Rise of a Market for Industrial Securities,"; Chandler, *The Visible Hand*, 318-319.

⁴⁰Trust companies were offshoots of the original trust organizational concept. Their general function can be explained as follows. If a man trusted another, he placed his money in a *trust fund* in the other man's care. When the other man established a company to handle a number of trust funds, he called it a *trust company*.

availability of large amounts of operating capital made all of the difference in regional transformation; it enabled the land companies to acquire mineral lands (backward integration), pre-plan town sites, and build infrastructure as part of their industrial development schemes. This was not the case during the first round of capital investment in the region.

A corollary to this is that the land companies, and perhaps Roane Iron Company during its later years, had to have an avenue of association with these financial institutions to gain access to their financial services and large potential reserves of capital. As Navin and Sears point out,

It was very important to win the backing of investment bankers, for they were the men who had come to occupy, through their work with government bonds and rail securities, a central position in the market for new issues...We can only suppose in the absence of specific evidence, that industrialists had been making repeated attempts to attract the assistance of the investment banking community...In general, the only occasions when bankers could be induced to handle industrial issues was (a) when called in on the conversion of trusts to corporations, (b) when a well-established industrial company wished to float a bond issue for working capital purposes, or (c) when a successful company wished to recapitalize in order to buy out its satellite plants.⁴¹

Thus, it was no easy thing to obtain the services of investment bankers and trust companies during the late nineteenth century. Companies and business entities that wanted to work with them had to be a known quantity or have a connection, most likely through financial, railroad or industrial business circles. The question is "How many

⁴¹Navin and Sears, "The Rise of a Market for Industrial Securities," 124.

businessmen that had investment-business interests in the Upper Tennessee River Valley would have access to these sources of capital?" The odds are that very few would, especially with the small amount of development that had taken place in the region prior to 1890. This is why I believe that a small set of very important businessmen, whom I will refer to as "capital injectors"⁴², were in large part responsible for the economic transformation of the Upper Tennessee River Valley during the mid to late-nineteenth century. Some men in this group of were local and some outsiders, but they can be isolated and their connections to outside capital sources and regional development analyzed.

Theme II: The Involvement of Business Organizations in Making Places

The extent of involvement and investment in the creation of places was a reflection of the goals that companies hoped to achieve by producing housing, services, planned developments, and commercial functions. Place-making was part of a business strategy in which companies evaluated their objectives and the economic context in which they were operating, and formed places on the landscape to meet their needs. Of course, these needs

⁴²The actors whom I define as "capital injectors" would have been those businessmen with both interests in urban-industrial development in the Upper Tennessee River Valley and access to large financial institutions (through various associations) in important financial centers such as New York, Boston, and Philadelphia.

might change over time, and new alternatives become possible as the economic context of business operation changed, and as new methods of production, organization and financing were adopted.

Thus, in their barest essence, places created by companies were spatial strategies to accumulating profit through the targeting of specific perceived business needs. One of the most obvious and constant of these needs, especially for industrial producers, was labor supply. At rural sites close to resource deposits or power sources, pools of labor were almost nonexistent, making it necessary for companies to attract and shape their own labor supplies. This could be done through the place-making process by the supply and mix of housing, the availability, size and cost of residential lots for sale, or restrictive deed covenants making particular activities or land uses illegal. Other various perceived needs such as the attraction of new industry, or the enticement of real estate investors, could also be addressed by companies through various means in their place development process.

Analysis of the types of places created by companies during the two later capital investment periods (Rockwood as representative of the industrial period, Harriman, Cardiff, and Lenoir City of the corporate) will reveal different strategies in place-making. There are several reasons for this difference in place-making strategy. First, companies operating during the third round of

investment were more sophisticated both organizationally and financially than those during the second (Theme I). This made it much more possible for them to manifest their operational needs on the landscape through large-scale land acquisition and the construction of pre-planned towns, because the new organizational forms and financing methods made capital available for this. Companies operating under the early industrial capitalism model (such as Roane Iron in the late 1860s and early 1870s) would not have had access to this capital, and had to create their places from thin margins of profit and smaller reserves of local and regional loan capital.

Second, the intentions and needs of companies operating during the two periods (in relation to production and profit making) were probably somewhat different. The Roane Iron Company at its outset was concerned with operating a small-scale iron production facility, and retaining a small, but constant labor force to work in the facility by the construction of an unplanned settlement. In contrast, the land companies were umbrella companies that administered the acquisition of thousands of acres of land, the layout of town plans, and the attraction of industry to the towns.⁴³ These were obviously two different business approaches, tempered by the economic contexts in which they were undertaken.

⁴³The vertically integrated business organization of the land companies can be viewed as an offshoot of the operating methods which were becoming predominant in the rise of corporate capitalism.

Third, the companies operating in the two investment periods created places having had different amounts of exposure to the ideals of the urban reform movement which was underway during the latter part of the nineteenth century. When the town of Rockwood was initially developed in 1867, the social and sanitary reform movements in the United States were in their infancy, and their tenets had not yet become widely known. Because of this, it can be assumed that even if the Roane Iron Company had the capital necessary and desire to create a "model" town, its principals probably would not have been exposed to the ideas of these movements. Conversely, the decades of the 1870s and 1880s were extremely important in the dissemination of reform ideals, through the work of Frederick Law Olmstead and others.⁴⁴ This would have meant that the land companies which developed towns in the Upper Tennessee River Valley in 1890 would most likely have been exposed to these ideals, and had the opportunity to incorporate them into their plans.

Scheme

This study is divided into several chapters. Chapter I explores the development of the pre-industrial Tennessee Valley, i.e. the region's settlement landscape up until the close of the Civil War during the era of mercantile

⁴⁴Peterson, "The Impact of the Sanitary Reform Movement upon American Urban Planning."

capital. Chapter II details the regional situation during the Reconstruction period, and provides information regarding production techniques and business practices in the iron and steel industry during this period. It also traces the first major round of capital investment in the Upper Tennessee River Valley (beginning in the late 1860s), which resulted in the Roane Iron Company production facility and the town of Rockwood. Chapter III investigates the second major round of investment which occurred in the region (during the late 1880s and early 1890s), which resulted in several manufacturing facilities and the towns of Harriman, Cardiff, and Lenoir City. Chapter IV focuses on the study region after the analysis period, lending insight in to the development patterns that exist presently. Chapter V is the summary and conclusion section, and discusses the major findings of the study, and their implications for our understanding of industrial development and Upland South during the late nineteenth and early twentieth centuries.

Chapter I

THE PRE-INDUSTRIAL UPPER TENNESSEE RIVER VALLEY

The pre-industrial Upper Tennessee River Valley was a sparsely settled region for much of the eighteenth century. The earliest European urban settlements were a product of settler struggle against the Cherokee Indians for land. The English, and later Americans, built forts for protection from French and Indian attacks during the mid-to-late 1700s. As native Indian groups were displaced by Europeans over time, these forts became the focus of economic activity. During the late eighteenth and early nineteenth centuries, roads began to be built through the region and an agricultural economy began to develop. River transport became significant in the region, and spurred the growth of towns such as Kingston, which became a break-of-bulk-point for commodities moved by road and river. By the 1850s, railroads appeared in the Valley, and played a key role in the development of the town of Loudon. The economic and settlement patterns created by mercantile capitalism prevailed when industrial development of the region was initiated in the post-Civil War era.

Before the Settlers

In the early eighteenth century, when Europeans first moved into the Upper Tennessee River Valley, the area was under the control of the Cherokee Indians, who had been

living in the region since approximately 1000 A.D. They had developed a distinctive culture that included complicated mound-building burial rites, pottery-making, a major commitment to maize agriculture, and a settlement pattern in which groups of permanent villages were satellites of larger communities with clearly defined ceremonial precincts.¹

The area controlled by the Cherokees in the early 1700s was approximately 40,000 square miles, extending from the headwaters of the Tennessee River southward to approximately the southern edge of the foothills of the Appalachians, and east to west from piedmont region of the Carolinas and Georgia to the north-flowing Tennessee River in middle Tennessee.² The Cherokee population was distributed in approximately 60 to 80 towns in the early 1700s, and was estimated to have numbered 16,000 to 17,000. Cherokee settlements were found in three distinct subregions. These subregions have been described as the Piedmont or Lower province of northern Georgia, eastern Alabama, and northwestern South Carolina; the Blue Ridge or Middle province of western North Carolina, northeastern Tennessee, southwestern Virginia, and northwestern South Carolina; and the Ridge and Valley or Overhill province of northwestern Georgia, northeastern Alabama, and

¹Roy S. Dickens, Jr., "The Origins and Development of the Cherokee Culture," in D. King, Ed., *The Cherokee Indian Nation: A Troubled History* (Knoxville, TN: University of Tennessee Press, 1979), 3-28.

²Gilbert E. Govan and James W. Livingwood, *The Chattanooga Country 1540-1951: From Tomahawks to TVA* (New York: E.P. Dutton & Company, 1952), 23-24.

southeastern Tennessee.³ The Cherokee Overhill settlement area encompassed the Upper Tennessee River Valley.

At the time of first contact with Europeans, the Cherokee had cultivated sophisticated cultural and national systems. The entire Cherokee nation was organized under a principal chief. However, subregional settlement groups functioned as the major units of political, religious, and everyday life. Each town and every settlement group had its own civil, religious, and military organizations which paralleled those of the national institutions. Cherokee towns varied in size from a dozen up to two hundred dwellings, with the average being about one hundred. In any town, seven genealogical clans were represented which linked all of the town residents by blood or marriage. This type of clan relationship prevailed throughout the nation and linked all of the Cherokee by kinship bonds.⁴

The towns settled by the Cherokee were fairly permanent, and were mostly located along streams and rivers in valley areas. Agriculture was integral to their way of life. Corn was their main staple crop, but they also grew beans, gourds, and sunflowers as food crops. The Cherokee also traveled over large areas in hunting parties in search of meat to supplement their diets. The Cherokee Indians had only a vague conception of land ownership in the

³Thomas M.N. Lewis and Madeline Kneberg, *Tribes That Slumber: Indians of the Tennessee Region* (Knoxville, TN: University of Tennessee Press, 1960), 156-159; Dickens, *Cherokee Culture*, 9-13; and Govan and Livingood, *Chattanooga Country*, 23-25.

⁴Lewis and Kneberg, *Tribes That Slumber*, 157-166.

European sense. They knew what territory they controlled and could utilize for sustenance, but individuals did not claim land for themselves as property.

European Settlement of the Tennessee Valley

The end of Cherokee control in the Tennessee Valley began with the arrival of Europeans in the area in the early eighteenth century. East Tennessee was settled rather late compared to the coastal plain and piedmont areas of Georgia and North and South Carolina, with only few incursions by individual trappers and traders. Until the beginning of the eighteenth century, the Appalachian Mountains stood as a barrier to westward advancement from English communities along the Atlantic coast. The French who had settled to the south and west were likewise dissuaded from moving into the Tennessee Valley by the impediment of the Muscle Shoals on the Tennessee River. The first major contact and negotiation that the English had with the Cherokees occurred in the South Carolina colony in 1721, when the Indians ceded a tract of land in that colony.

The Treaty of 1721 marked the beginning of the gradual eviction of the Cherokee from their lands. By 1730, the English had won the confidence of the Cherokees, and persuaded a party of their leaders to visit England as a sign of good will. The visit resulted in a treaty in which the Cherokee granted the English exclusive rights to trade

and build forts in their territory.⁵ The Cherokee served as an invaluable ally for the English against the French, their principal competitors for land in North America. The French had cultivated relationships with other Indian tribes, so that each country had Indian allies with which to help control territory and sway the balance of power. The hostilities between the French and English broke out in the French and Indian War in 1754. The English enlisted the help of the Cherokee on expeditions against the French in the Ohio Valley. They also built the first English fort in Cherokee country on the Little Tennessee River during the war in 1756, called Fort Loudon.

At the close of the French and Indian War in 1763, the English had defeated both the French and renegade Cherokee war parties that had risen up against them during the war. With the land west of the Appalachians thoroughly under English control, and the danger from Indians minimized, settlers began to pour into the valleys of East Tennessee from southern coastal areas and down the Great Valley from Pennsylvania and Virginia. Over the next sixty years, the Cherokee gradually lost their land in a cycle of settler encroachment, conflict, and treaty agreement. European settlers were constantly settling in Cherokee territory in search of the best homesteads. The Cherokee reacted to this by attacking settlers, and appealing first to the English and later the American government to stop the

⁵Ibid., 166-167.

encroachment.⁶ Settlers were also appealing to government authorities to put a stop to indian attacks. Conflicts of this type were most often mediated through treaties in which the Cherokee sold land to the English or Americans for a minimal price. The result was a steady push of the Cherokee to the south and west throughout the late eighteenth and early nineteenth centuries.

The land of the Upper Tennessee River Valley was acquired through several treaties between the Cherokee and the United States government beginning in 1791. The first of these was the Treaty of Holston in which the Holston and Nolichucky river valleys were acquired from the Cherokee for a \$1,000 payment. The Holston treaty was signed at White's Fort, later to become Knoxville, and was the groundbreaking agreement in opening up the Tennessee Valley for settlement. In fairly quick succession further treaties were signed. Eight years later in 1798, the Treaties of Tellico were signed in which lands in the French Broad and Clinch river valleys were bought by the United States for \$6,000. In the Third Treaty of Tellico of 1805, a large tract of land on the Cumberland Plateau which formed the western boundary of the Valley was purchased by the federal government for \$14,000. The southern area of the Tennessee Valley remained under

⁶The territory which comprised Tennessee came under the administration of the new American government in 1782 after the defeat of the English in the Revolutionary War. The Cherokee fought on the side of the English during the war, and were persecuted for this when the colonists were eventually victorious.

Cherokee control until 1819, when the renegade Chickamaugas finally gave in to federal government military superiority.⁷ The final chapter of the Cherokee presence in East Tennessee was marked by the infamous Treaty of New Echota, which resulted in the cession of all Cherokee land east of the Mississippi River. The Treaty of New Echota was the basis for the forcible removal of the Cherokee to Arkansas and Oklahoma in 1838 by the federal government, along what became known as the "Trail of Tears."

European Settlement Landscape in the Tennessee Valley

Settler struggle against the Cherokee for land in the Tennessee Valley produced an initial settlement landscape that endured until the mid-nineteenth century. Both the English and Americans had built a network of forts for protection from French and Indian attacks during the mid to late 1700s. These forts often became the focus of economic activity during the mercantile capitalist phase, emerging as the first towns in the Upper Tennessee River Valley region.

Forts were most often located at strategic points along river banks, where water transportation could be utilized, and movements of the enemy monitored and constrained. In the Upper Tennessee River Valley, three

⁷Albert C. Holt, *The Economic and Social Beginnings of Tennessee* (Nashville, TN: George Peabody College, 1923), 35-38; and Weston A. Goodspeed, Ed., *Goodspeed's General History of Tennessee* (Nashville, TN: Goodspeed Publishing Company, 1887), 93-103.

major forts were founded during the Indian period: Fort Loudon, Fort White, and Fort Southwest Point. Fort Loudon was the oldest of these forts, founded in 1756, and was the first European settlement in the Tennessee Valley. It was built on the banks of the Little Tennessee River during the French and Indian War as a defense for the English and their Cherokee allies against French attacks from the south and west.⁸ The other two forts were built later in the century generally as protection for settlers against the Cherokee as larger scale settlement took place in the Valley.⁹ Fort White was constructed in 1786 near the origin of the Tennessee River, on a well fortified bluff site.¹⁰ Fort Southwest Point was built in 1792 near the confluence of the Clinch, Emory, and Tennessee Rivers. It became a very important strategic site militarily following its construction by General John Sevier, as it served to cut off water travel and communication between the Upper and Lower Cherokee settlement groups.¹¹

⁸John Haywood, *The Civil and Political History of the State of Tennessee from its Earliest Settlement up to the Year 1796* (Reprinted from 1823 Edition, Knoxville, TN: Tenase Co., 1969), 41-45; P.M. Hamer, *Fort Loudoun on the Little Tennessee River* (Raleigh, NC: Edwards & Broughton Printing Co., 1925).

⁹Groups of Cherokee Indians by this time had become disenchanted with settlers and the American government for constant encroachment on their traditional lands.

¹⁰Mary U. Rothrock, Ed., *The French Broad-Holston Country: A History of Knox County, Tennessee* (Knoxville, TN: East Tennessee Historical Society, 1946), 26-27.

¹¹Stanley J. Folmsbee, Robert E. Corlew, and Enoch L. Mitchell, Eds., *History of Tennessee, Volume I* (New York: Lewis Historical Publishing Co., 1960), 194-202; Eugene M. Pickel, "A History of Roane County, Tennessee to 1860," (M.A. Thesis, Univ. of Tennessee, Knoxville, 1971), 25-27.

The Development of a Regional Economy in the Upper Tennessee River Valley

During the pre-Civil War nineteenth century, the initial layers of the Upper Tennessee River Valley palimpsest were formed by mercantile capitalism, involving agriculture, small-scale and unsophisticated industry, and the development of successive transportation modes that included roads, rivers, and railroads. Settlements that had initially been trading posts and ferry crossings became markets for agricultural products, and locations for mostly home-centered industry. Grist mills, tanneries, boot and shoe producers, hatmakers, carriagemakers, druggists, general store owners and others relied upon resources and customers from the surrounding hinterland. The modifications that occurred in this regional hinterland relationship during this period were tied to changes in the transportation landscape, which enabled both people and commodities to move more quickly and easily over space.

Farming emerged as the dominant activity in the region on the fertile lands of the Upper Tennessee River Valley soon after settlement began there in the late eighteenth century. From its outset, agriculture in the region was dominated by corn, wheat, and oats. The limited availability of flat, fertile valley land dictated that these crops be grown on farms of small to medium size,

generally between twenty and five hundred acres.¹² The region's farmers were not specialists; besides their staple crops they also grew small amounts of many crops for their own consumption. This pattern of agriculture did not encourage the development of "cash crops" such as tobacco, cotton, or peanuts in the Upper Tennessee region. Consequently, the smaller-scale, mixed-use regional farms never utilized large amounts of slave labor as did their contemporaries in Middle and West Tennessee.¹³

By 1860, the agricultural economy of the Upper Tennessee River Valley had reached its apex. Approximately 365,000 acres of land in the study area¹⁴, worth \$3,420,610, was in use for agriculture.¹⁵ In the preceding decade, significant advances had been made in agricultural methods and organization, and a statewide movement to support agrarianism was in full swing. The Roane County Agricultural Society was formed as a local branch of the Tennessee State Agricultural Bureau. The Agricultural Society's mission was the improvement of farming methods on the county level. Part of this effort was the organization of annual county-wide agricultural fairs during the 1850s at which farming methods were

¹²United States Eighth Census, *Volume II Agriculture* (Government Printing Office, 1865), 215.

¹³Goodspeed, *History of Tennessee*, 229-232.

¹⁴Roane County in 1860 encompassed the entire study area, and therefore its census statistics are applicable to this analysis. Loudon County, in which Loudon and eventually Lenoir City were located, was formed out of parts of Roane, Monroe, and Blount Counties in 1870.

¹⁵United States Eighth Census, *Agriculture*, 136.

demonstrated, various competitions held, and issues debated.¹⁶ These fairs were a manifestation of the importance and prestige of agriculture in the State and County in the pre-Civil War era.

The need to market the agricultural produce of this rural region stimulated the formation of the first urban place in the Upper Tennessee Valley region. The town of Kingston, which became the regional focus of commercial and political activity in the mercantile capitalist era, was established by an act of the state legislature in late 1799. Founded near the confluence of the Emory, Clinch, and Tennessee Rivers, Kingston began as a trading post for the federal government's military post at Fort Southwest Point. Its functions expanded with the Valley's growing population, and as political boundaries began to be placed on the landscape of East Tennessee. By the turn of the nineteenth century, Kingston had become the marketing center for produce from the surrounding valley farms, mainly because of its access to river transportation. The town also was named the county seat of Roane County in 1801, bringing formal governmental apparatus in the following years.¹⁷ Court facilities, law offices, mercantile establishments, and inns were established in

¹⁶Pickel, "History of Roane County," 55-60.

¹⁷Jack Shelley, Helen Galloway, Amy Wolfe, and Madge Sneed, "Towns - Old and New" in Jere Hall and Jack B. Shelley, Eds., *Valley of Challenge and Change: Roane County, Tennessee, 1860-1900* (Knoxville, TN: East Tennessee Historical Society, 1986), 49-51.

Kingston to serve its local political functions and to cater to its rural hinterland.

Despite the steady flow of settlers into the Valley during the late eighteenth and early nineteenth centuries, the growth of the area was hampered by inadequate transportation. The first settlers had floated down the Tennessee River or one of its tributaries on flatboats, or followed poorly marked and hazardous game trails and Indian paths into the region. The region remained without any improved routes of land travel until 1792, when the Treaty of Holston was signed, providing for a road to be constructed westward from Knoxville to the new settlements of Middle Tennessee. The route chosen for the new road was from Knoxville to Kingston (Fort Southwest Point) where the Clinch River was crossed by ferry, west across Indian territory for one hundred miles to a ferry crossing of the Cumberland River (which became the town of Carthage), and on to Nashville via the settlement of Gallatin (Figure 1.1). The road, which came to be known as Walton Road¹⁸, was completed in 1795 and improved in 1801 through state appropriations and the incorporation of the Cumberland Turnpike Company.¹⁹ After 1800, the State of Tennessee

¹⁸The road was named for William Walton, a member of the board of commissioners of the Cumberland Turnpike Company.

¹⁹Thomas P. Aberethy, *Frontier to Plantation in Tennessee: A Study in Frontier Democracy* (Chapel Hill, NC: The University of North Carolina Press, 1932), 155-158; Stanley J. Folmsbee, Robert E. Corlew, and Enoch L. Mitchell, *Tennessee: A Short History* (Knoxville, TN: The University of Tennessee Press, 1969), 241-244; Albert C. Holt, *The Economic and Social Beginnings of Tennessee* (Nashville, TN: George Peabody College, 1923), 68-72.

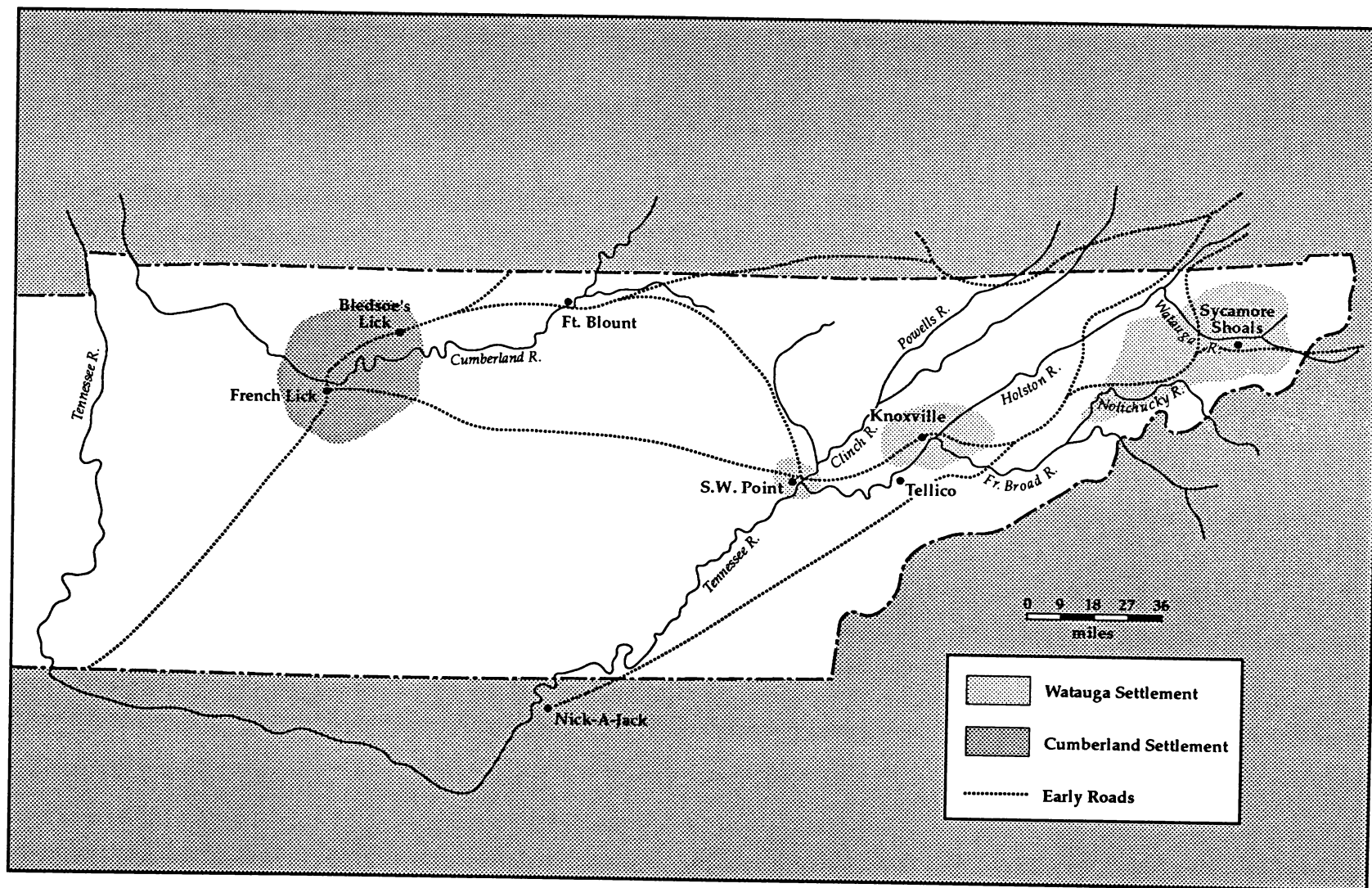


Figure 1.1. Early Roads and Settlements of Tennessee

increasingly encouraged the construction of roads into settlement areas.

In the early nineteenth century, Walton Road became the principal route of overland travel between East and Middle Tennessee. Kingston's location along Walton Road, and at the confluence of the Emory, Clinch, and Tennessee Rivers cemented its primacy as the economic and commercial center of the region. Its access to water and land travel routes made it a natural break-of-bulk point, and a strategic site for the east-west transportation of both people and commodities. Many travelers on their way to Middle Tennessee and points west stopped in Kingston for rest and provisions. Would-be settlers also waited at Kingston for military escorts to accompany them on their westward journey, as protection from Indian attacks which occurred periodically in the territory between the Clinch and Cumberland Rivers.²⁰

Until approximately 1830, road and unorganized river transportation dictated the pattern of commodity flows and movement of people through the Upper Tennessee River Valley region. As the region was settled, it became evident that the upper limits of the Tennessee River contained natural obstacles preventing the movement of larger boats between Knoxville and important southern ports such as Memphis and New Orleans. The most troublesome of these was Muscle Shoals in Alabama, a thirty-seven mile stretch of rapids

²⁰Holt, *Economic and Social Beginnings*, 70-71.

created by a cumulative vertical drop of 134 feet in the river. The shoals were located 260 miles from the confluence of the Tennessee and Ohio Rivers. They could be traversed only during the high-water season and then only by boats small in comparison to those used on the Ohio and Mississippi Rivers. Muscle Shoals cut East Tennessee off from the larger southern economy. By 1822, a regular steamboat line was in operation between New Orleans and southern boundary of the Muscle Shoals, but the Upper Tennessee remained unserved.

In 1828, however, the steamboat era finally reached East Tennessee. During February and March of that year, the steamboat *Atlas* traveled from New Orleans up the Mississippi, Ohio, and Tennessee River to Knoxville. The *Atlas* had crossed Muscle Shoals during a high-water period, and arrived in Knoxville with much fanfare.²¹ The city fathers of Knoxville had much anticipated the arrival of steamboat transport, and in fact gave the captain of the *Atlas* a \$640 purse for successfully completing the journey. It would be another three years, however, before regular steamboat service began in the Tennessee Valley. This was a result of the successful plea of East Tennesseans to the state legislature in 1830 for \$60,000 to improve conditions for water transport on the Tennessee River. The money was used to dredge a navigable channel between Knoxville and

²¹*Knoxville Daily Register*, March 4, 1828.

the Alabama state line.²² The dredging made steamboat travel possible between Knoxville and Decatur, Alabama at the head of Muscle Shoals from November until June.²³

The advent of streamboat transportation brought significant growth to the economy of the Upper Tennessee River Valley. During the late 1830s and 1840s, there was substantial growth in commerce carried on regional rivers. Agricultural products were brought down the Clinch and Tennessee Rivers in large quantities, and were most often transported on to Chattanooga or Decatur, Alabama.²⁴ Kingston remained the focus of the emerging mercantile agricultural-steamboat-based economy, and its regional importance increased accordingly. Produce from the agricultural hinterland was assembled in the town, and its value improved by reducing bulk and perishability. Corn, for example, was shelled and sacked, milled into cornmeal, or made into whiskey. A mill ground wheat into flour. Kingston's wharf was kept busy with the shipment of agricultural products and trade items. To accommodate

²²Gilbert E. Govan and James W. Livingood, *Chattanooga Country 1540-1951: From Tomahawks to TVA* (New York: E.P. Dutton & Company, 1952), 121-122.

²³Edwin P. Patton, "Transportation Development" in Lucille Deadrick, Ed., *Heart of the Valley: A History of Knoxville, Tennessee* (Knoxville, TN: East Tennessee Historical Society, 1976), 179-181; Mary U. Rothrock, Ed., *The French Broad-Holston Country: A History of Knox County, Tennessee* (Knoxville, TN: East Tennessee Historical Society, 1946), 96-100.

²⁴In 1838, a state appropriation was made to improve navigation on selected tributaries of the Tennessee River. As a result of this, keelboat transport of produce on tributaries such as the Holston, Clinch, and Emory Rivers increased, and these agricultural areas were connected with steamboat travel on the Tennessee River.

passengers arriving by boat and overland stage, new larger hotels and businesses were built during this period.

Kingston remained the sole urban settlement of any consequence in the region until the 1850s, when transportation innovation brought advantages to another site along the Tennessee River. The village of Blair's Ferry had been established by the Blair family, some of the earliest settlers to the region, in 1817. The family had come to an agreement with the Cherokee Indians, in which they obtained permission to operate a ferry across the Tennessee River.²⁵ Blair's Ferry remained a small river settlement for the next thirty years, growing only slightly with steamboat travel on the river. By the late 1840s, the village consisted only of one general store, a steamboat landing, and a few houses. Blair's Ferry's future, was changed, however, with the first railroad line to East Tennessee. The East Tennessee and Georgia Railroad ran from Dalton, Georgia north to the Blair's Ferry site and was completed in 1852.²⁶ Within two years, Blair's Ferry became an important place in the region in association with the railroad.

The East Tennessee and Georgia Railroad was a revival of the Hiwassee Railroad, which had made an aborted effort to build a railroad from Dalton, Georgia to Knoxville before its financial collapse in 1842. Following the

²⁵Ted B. Clark, "The Changing Central Place Function of Loudon, Tennessee," (M.A. Thesis, Univ. of Tennessee, 1968), 6-8.

²⁶Rothrock, *French Broad-Holston Country*, 104-107; Folmsbee et. al., *Tennessee - A Short History*, 261-262.

termination of a civil suit against the Hiwassee by the State of Tennessee, the company was reorganized and obtained its new charter in 1848. Continuation of rail line construction north from Dalton was made possible by a loan of \$350,000 in state bonds by the State of Tennessee.²⁷ By August of 1852, construction of the rail line had been completed from Dalton to Blair's Ferry, and trains had begun operation. Blair's Ferry became the northern terminus of the East Tennessee and Georgia in 1852 mainly because funds were not available to build a railroad bridge across the Tennessee River.

The fortuitous advantage conferred upon Blair's Ferry by the local landscape served as the impetus of its rapid growth in the ensuing years. A larger town area was planned and platted in 1852, and the planned community was renamed Loudon, after the first English fort in the region. In the aftermath of the completion of the railroad, a "boom-town" atmosphere existed, as Loudon became the only railroad-connected, break-of-bulk point²⁸ in the Valley. Produce in large quantities was brought from various locations on the river, and transferred to the railroad where it was shipped to points south. Traffic was so heavy during the harvest season that steamboats had to lay over several days to discharge cargo. Merchants began selling

²⁷Rothrock, *French Broad-Holston Country*, 105.

²⁸A break-of-bulk point is a location at which there is a transfer of commodities from one mode of transportation to another. In the case of Loudon, the town became an important break-of-bulk point between water and rail transport when the East Tennessee & Georgia Railroad was completed in 1852.

produce and dried goods in new stores, a flouring mill was built to refine corn and wheat, and a saw mill and foundry were established at the new transportation crossroads.²⁹ The population of Blair's Ferry/Loudon grew rapidly in the early rail period, propelling it from a frontier settlement to an important regional town.

Loudon's boom town era did not last long, however; railroad expansion took away the town's locational advantage as quickly as it conferred it. The East Tennessee and Georgia Railroad's problem with lack of construction funds was solved when the Tennessee State Legislature announced in 1854 that it would provide a loan for the extension of the line northward. The State provided \$8,000 per mile of rail line, on the condition that the rail line be completed to Knoxville.³⁰ By June of 1855, the extension to Knoxville was completed, making it the northern terminus of the East Tennessee and Georgia. Less than three years later, Knoxville became the connection point of the the East Tennessee and Georgia and East Tennessee and Virginia Railroads, making it a strategic location on a rail network that stretched from Richmond, Virginia to Atlanta, Georgia.³¹ Although

²⁹*Goodspeed's History of Tennessee: Containing Historical and Biographical Sketches of Thirty East Tennessee Counties* (Nashville, TN: reprinted from Goodspeed's History of Tennessee 1887 by Elder Booksellers, 1972), 826-827.

³⁰It is generally accepted that Knoxville lobbied to become the northern terminus of the East Tennessee and Georgia Railroad from its inception. It is probable that Knoxvilleians used whatever influence they could muster to encourage the State to fund the extension of the East Tennessee and Georgia to Knoxville.

³¹Patton, "Transportation Development", 193-195.

Loudon's boom town phase was over after 1855, it remained a locally important marketing center because of its water-rail connection.

The Civil War in the Upper Tennessee River Valley

The debate over states rights and slavery came to Tennessee as it did other southern states in 1860 and 1861. A political chasm on the issue of slavery developed between the counties of East Tennessee and the rest of the state. While East Tennesseans varied in their attitudes toward slavery, they did not identify with the large plantation owners of the deeper South who were benefitting to a much larger degree from the institution. East Tennessee was also the last stronghold of the Whig party, whose conservative tenets tended to ally it with the Unionist cause.

By February of 1861, the states' rights debate and slavery controversy in Tennessee had reached such critical proportions that Governor Isham Harris called for a special session of the state legislature to decide whether or not the State should secede from the Union. Harris enumerated twenty-three grounds of complaint against the Northern states, which he believed necessitated and justified the removal of Tennessee and other Southern states from the Union.³² The convening of the secession convention was

³²Oliver P. Temple, *East Tennessee and the Civil War* (Cincinnati, OH: The Robert Clarke Co., 1899), 167-172; Governor Harris was a staunch

defeated statewide by a margin of 66,000 votes, and in the counties of East Tennessee alone the convening of the convention lost by over 25,000 votes. This resolution of the secession issue in Tennessee lasted only a few months, as Confederate troops opened fire on the federal garrison of Fort Sumter in April of 1861. Shortly thereafter, President Lincoln called for 75,000 volunteers to put down the rebellious Southern states. The decision by the federal government to stop state succession by force created a new opportunity for secessionists in Tennessee. They were able to capitalize on President Lincoln's decision by stoking fears of northern aggression against the South, and once again called for the removal of the State from the Union.

A second secession referendum vote was called for June of 1861 by Governor Harris. The Tennessee State Legislature had already adopted a resolution of military alliance between the State and the Confederate government in the preceding months, and was seeking popular support for the decision. As the time for the referendum approached, most prominent leaders of church, press, and state in Middle and West Tennessee were urging ratification of the declaration of independence, while those in East Tennessee were arguing against it. The result of this second vote was a substantial 50,000 vote majority in favor

Democrat, and was sympathetic to the cause of the southern planter and slave owner. It is widely held that his personal views dictated this first attempt to remove the State of Tennessee from the Union before the attack on Fort Sumter.

of secession from the Union statewide.³³ There was considerable regional variation in the secession vote. The traditional Whig districts of East Tennessee, with Knoxville as the regional focus, strongly opposed separation from the Union. The established Democratic area to the northeast followed native son, former governor, and United States senator Andrew Johnson in opposing secession as well (with the exception of Sullivan County). Middle and West Tennessee voted almost solidly for secession.

The Unionist counties of East Tennessee made a last ditch effort to avoid separation from the federal government. Meetings of prominent Unionists were held in Knoxville, Greeneville, and other towns shortly after the vote in order to develop a plan of action. The final result was a convention at Greeneville, Tennessee at which a plan was proposed for the independence of the East Tennessee region as a separate state. The proposal was presented to the state legislature, which took no action on it, but noted the security problems that Unionist sentiments in East Tennessee presented to the Confederacy. The eastern part of the state was strategically valuable as a principal avenue of travel between the upper and lower South, especially because of the East Tennessee and Georgia, and East Tennessee and Virginia Railroads which stretched from Atlanta, Georgia to the Confederate capital

³³James W. Patton, *Unionism and Reconstruction in Tennessee* (Chapel Hill, NC: The University of North Carolina Press, 1934), 14-24; Abernethy, *Frontier to Plantation in Tennessee*, 338-343; Temple, *East Tennessee and the Civil War*, 196-204.

of Richmond, Virginia. In less than a month, six Confederate regiments were sent to East Tennessee to secure the region, commanded by former Knoxvilleian General Felix Zellicoffer.³⁴

The Upper Tennessee River Valley was a microcosm of events that were taking place throughout East Tennessee during the Civil War. The citizens of the region were split fairly evenly between support of the Confederacy and the Union. Union supporters, however, were being increasingly persecuted by local Confederate sympathizers and soldiers that had moved into the region. Many Union sympathizers left the region and fled to Kentucky or other northern states where volunteer units were being organized in the latter months of 1861. Some stayed in Tennessee and resisted Confederate occupation through guerilla activity.³⁵ Many remaining residents also joined Confederate units that were being raised in Knoxville and other nearby towns.

The Upper Tennessee River Valley was controlled by occupying Confederate forces until the summer of 1863, when Federal forces brought the shooting war to East Tennessee. Since the beginning of hostilities President Lincoln had wanted to aid those loyal to the federal government in

³⁴James W. Fertig, *The Secession and Reconstruction of Tennessee* (Chicago: The University of Chicago Press, 1898), 28-32; Folmsbee, Corlew, and Mitchell, *Tennessee: A Short History*, 324-325.

³⁵The most infamous of these guerilla activities was the coordinated burning of five railroad bridges between Stevenson, Alabama and Bristol, Tennessee, which rendered 265 miles of railway useless and impeded the transportation of Confederate troops and supplies to the battlefields of Northern Virginia.

Tennessee. In August of 1863, General Ambrose Burnside directed his Federal Army of the Ohio to begin movement to the south from Camp Nelson, Kentucky into East Tennessee. Receiving advance notice of the movement of Federal forces, Confederate General Simon Buckner elected to abandon the Tennessee River Valley in the face of superior numbers. By September the region was under Union control. Unfortunately, the fighting in the county would not end for over a year after this. The defeat of federal forces under General William Rosecrans at Chickamauga to the south allowed Confederate calvary to roam freely throughout East Tennessee. General Nathan Bedford Forrest in particular led raids into the region, inflicting heavy losses in terms of men and materials. From the fall of 1863 until the end of the war, the Valley endured skirmishes between the armies several times.

The economic, social, and intellectual life of the Tennessee River Valley suffered greatly during the Civil War. As the result of constant troop movements through the Valley, the land was stripped of most of its foodstuffs. What armies did not forage from the farmsteads, marauders stole from the defenseless families that remained. Businesses in towns such as Kingston and Loudon were not able to replenish their stocks because of the fighting, and many were forced out of business. Gold and silver had passed completely out of circulation so that any type of business had to be done using paper money of questionable

value. Many schools and churches had also been damaged and destroyed. Farms and property lay idle. Many of the Unionists that did return to the region after the war wanted retribution, and sought reparations from the estates of Confederate officers who had damaged their properties. This created an atmosphere of hostility between former local Confederates and Unionists in the months and years following the close of the war.³⁶

One important result of the war which would have future ramifications for the region was the exposure of outside Union soldiers to the area. Their travels through the Tennessee Valley during wartime exposed them for the first time to the natural resource base of the region. Union officers such as General John T. Wilder and Captain Hiram S. Chamberlain took notice of the large deposits of iron ore and coal along the Cumberland Escarpment which formed the western boundary of the valley. Although large-scale investment in the region would be delayed for a few years during the post-war recovery period, the interest of these entrepreneurs had been piqued, and it would play a large role in the region in the years to come.

In summary, at the close of the Civil War, the Upper Tennessee River Valley continued to be an agriculture-dominated region. The Civil War had taken its toll on the

³⁶Jack McInnis and William Jamborsky, "A County in Time of Turmoil", in Jere Hall and Jack B. Shelley, Eds., *Valley of Challenge and Change: Roane County, Tennessee, 1860-1900*, (Knoxville, TN: East Tennessee Historical Society, 1986), 8-12; Fertig, *Unionism and Reconstruction in Tennessee*, 68-72.

area, but the economic balance of agriculture and marketing remained, if on a slightly smaller scale. The towns of Kingston and Loudon were the marketing centers of the mercantile economy, and they provided services for residents of the rural hinterland. The Upper Tennessee Valley remained a relatively isolated backwater region, however, with its only railroad connection being the East Tennessee and Georgia which ran through the extreme eastern section. The ensuing years would change the region's fortunes and its character, bringing it into the larger industrial economy.

Chapter II

RECONSTRUCTION AND INDUSTRIAL DEVELOPMENT: THE SECOND ROUND OF CAPITAL INVESTMENT

Reconstruction in Tennessee

In the aftermath of the Civil War, Tennessee was a state torn asunder by the atrocities of wartime and the rivalries of soldiers returned home. The sufferings of Tennesseans, so pronounced during the hostilities, were continued into the post-war period with the return of Union and Confederate soldiers. Many men returned to land damaged and made barren by war, and fought with those they held responsible. Added to this were the social and economic issues posed by recently freed African-Americans, who were adjusting to their new status.

The State of Tennessee had technically been under federal military rule since March of 1862, when federal troops forced the evacuation of Confederate forces from Nashville and Middle Tennessee. Andrew Johnson, a native Tennessean and United States senator, was appointed military governor of Tennessee by President Lincoln at this time. Johnson's tenure as governor lasted until early 1865, when his duties as Vice President of the United States required his presence in Washington, D.C. His last official act as governor of Tennessee was the authorization of elections to select officials for a civil state government. At the election, held on March 4, 1865,

William G. Brownlow was elected governor by a large majority.¹

Brownlow's Republican administration immediately undertook a program of harsh retribution against former Confederates. Governor Brownlow recommended that the state criminal code be strengthened to combat guerilla activity; that suffrage be limited to loyal Union men; that freedmen be protected from the harrassment of former Confederates; and that Confederate officers and bank directors be held personally responsible for bank and railroad losses. He also announced a reward of \$5000 for the arrest of former state governor Isham G. Harris, declaring him "responsible to a great extent for the war..."²

Part of the Brownlow administration's wholesale rejection of the Confederate creed was a marked reorientation of the government's approach to economic development within the state. Prior to the Civil War, Tennesseans in general and the state government in particular, held firmly to the doctrine of the superiority of agriculture to other economic activities. For example, in 1854 the Tennessee general assembly, in the preamble of an act establishing a state agricultural bureau, explicitly stated that agriculture was the source and foundation of all industry and that the state must continue to rely upon

¹Fertig, *Unionism and Reconstruction in Tennessee*, 34-59. Only men who took an oath of loyalty to the Union were allowed to vote for civil state government positions. This was in large part the reason for Brownlow's easy victory.

²Folmsbee, Corlew, and Mitchell, *Tennessee: A Short History*, 353-354. 63

it for its future prosperity.³ Brownlow and his fellow Radical Republicans that took over post-war state leadership saw the war as a clash of economic systems as well as armies, and interpreted Confederate defeat as evidence that the antebellum South had failed to cultivate a strong economic base. Governor Brownlow's new direction was evident from his inaugural speech, in which he proclaimed "...that the natural resources of the Southern States are being expatiated upon, in order that enterprising emigrants may be led to come among us and add to our capital and enterprise. Tennessee holds out inducements to wealthy and industrious emigrants that no other border state affords."⁴ The new administration set about implementing a program of industrialization that would put the state in step with the industrial economy that was emerging north of the Mason-Dixon line.

The staple argument of the pro-industrial reconstruction government was based upon the doctrine of state self-sufficiency. In 1868, a legislative committee reported that Tennesseans were spending more than \$77,000,000 for imported manufactured goods. To remedy this situation, the state government established a State Board of Immigration in late 1867, charged with the encouragement of immigration from the Northern states and

³Constantine G. Belissary, "The Rise of Industry and the Industrial Spirit in Tennessee, 1865-1885," *The Journal of Southern History* XIX (May, 1953), 193-215.

⁴Quoted from the Knoxville Whig and Rebel Ventilator, May 5, 1869 in W.B. Hesselstine, "Tennessee's Invitation to Carpet-baggers," *East Tennessee Historical Society's Publications*, 4 (1932) 104.

Europe. The board was funded by state appropriations, and was authorized to publish pamphlets, newspaper articles, and advertisements, as well as send agents to northern and eastern states to tout Tennessee and its resources.⁵ The theory behind this strategy was that changing from a predominantly agrarian to a diversified economy required the help of immigrants, skilled in machine labor and attuned to the factory system. This is evident in the preface of an immigration handbook published by the Board of Immigration. In it, author Hermann Bokum described the administration's desire to diversify Tennessee's economy: "Instead of an almost exclusive attention to agriculture, which has prevailed in the South for so many years, there is now a general desire that there should be a harmonious development of its resources. In consequence of it, immigration which was regarded with indifference or dislike, is now greatly desired."⁶ During the late 1860s, various bills were also introduced into the legislature, explicitly inviting outside capital and industry to the state and establishing an association to encourage industry.

The popular sentiment of Tennesseans towards industry during the post-war period was also improved by the sharp regression in prices of agricultural goods beginning in the late 1860s. The price of cotton dropped from 23 cents a

⁵Hesseltine, "Tennessee's Invitation to Carpet-baggers," 108-109; Belissary, "The Rise of the Industrial Spirit in Tennessee," 207-208.

⁶Hermann Bokum, *The Tennessee Handbook and Immigrant's Guide* (Philadelphia, PA, 1868), 3.

pound in 1868 to 15 cents in 1870 and 9 cents in 1878.⁷ Wheat followed a similar downward spiral, dropping from \$2.18 a bushel in 1868 to \$1.00 in 1870, and bottoming out at 77 cents in 1878.⁸ As a result of these price decreases, many Tennesseans were forced to activities other than farming to make a living and feed their families. Another consequence was the erosion of faith in agrarianism as the path to post-war social and economic regeneration. Industry was becoming more widely viewed not only as a feasible alternative for economic development by investors and policy makers, but also as a potential generator of income and livelihood by the populace.

Radical Republican rule in Tennessee ended in 1869 when William Brownlow was elected to the United States Senate, and resigned the governor's seat. The ensuing election resulted in the victory of the Radical-turned-Conservative DeWitt C. Senter in the governor's race, and Conservative majorities in both houses of the legislature.⁹ Although the conservatives made changes on many fronts during the "redemption" period following reconstruction,

⁷James E. Boyle, *Cotton and the New Orleans Cotton Exchange: A Century of Commercial Evolution* (Garden City, NY, 1934), 180-181.

⁸James E. Boyle, *Chicago Wheat Prices for Eighty-One Years: Daily, Monthly, and Yearly Fluctuations and Their Causes* (Ithaca, NY, 1922), 15.

⁹The distinction between Radicals and Conservatives began in the immediate post-war reconstruction period. Radicals were identified as those who wanted to follow a harsh reconstruction program for the South that included the exclusion of former Confederates from such citizenship rights as voting and holding office. Conservatives in general followed the leadership of president Andrew Johnson and Washington Conservatives who wished to put into effect the Lincoln-Johnson plan of leniency in reconstruction. Thus, with the Conservatives in power after 1869, former Confederates began to return to positions of power within the state.

they continued the radical policy of encouraging industrial development.¹⁰ Woodward, in fact, has suggested that "Redemption was not a return of an old system nor the restoration of an old ruling class. It was rather a phase of the revolutionary process begun in 1865."¹¹ The dominant element among the conservatives that came to power on the heels of reconstruction in the South were middle-class, with a decidedly industrial, capitalistic outlook. They had little connection with the old planter regime, and did not share its reproach for outside capital and industry.

An examination of two of Tennessee's early Conservative governors confirms Woodward's contentions. Former Confederate general John C. Brown took over the governorship of the state in 1870 from DeWitt Senter. Brown was an active industrialist, who took prominent part in the ambitious schemes of Thomas A. Scott for a southern transcontinental railway and served as vice president of Scott's Texas and Pacific Company. Later he became president of the Bon Air Coal Company, and at the time of his death he was serving as president of the expanding Tennessee Coal, Iron, and Railroad Company. His successor, James D. Porter, was also a Confederate veteran and

¹⁰Redemption was a term applied to the restoration of Conservative rule by native southerners in southern states. Many southerners felt that they had been unjustly governed by Radical Republican outsiders during reconstruction, and hailed the return of Conservative state administrations.

¹¹C. Vann Woodward, *Origins of the New South, 1877-1913* (Baton Rouge, LA: Louisiana State University Press, 1951), 21-22.

industrialist. Porter served two full terms in office, after which he was elected president of the Nashville, Chattanooga and St. Louis Railroad. He also served on the board of directors of the Tennessee Coal, Iron, and Railroad Company, as well as several other financial enterprises in Nashville.¹² Brown and Porter were typical of the New South Conservatives that dominated Tennessee politics during the two decades following reconstruction, mixing the mores of the Old South with a recognition that industrial capitalism was the wave of the future.

The pro-industrial policies of the reconstruction Radicals and the redemption Conservatives contributed to industrial growth in the state. By 1870, despite war damages and political turmoil, industry in Tennessee had surpassed its pre-war proportions. The number of plants had more than doubled since 1860, from 2,500 to 5,300; the number of industrial workers had increased from 12,500 to 19,400; the value added in manufacturing had increased by \$7,000,000 to \$15,000,000 in 1870; and the value of industrial goods produced had almost doubled during the decade.¹³ Leading the industrial emergence was the iron industry, upon which most often was placed the hopes of Tennessee manufacturing promoters. Iron production in Tennessee steadily increased between 1865 and 1870, and fueled speculation that the iron ore and coal deposits of

¹²Ibid, 3.

¹³*Tenth Census, 1880: Manufactures* (Washington, D.C., 1883), xiv.

the eastern part of the state would be the basis of industrial development within the state.

The Iron Industry in the Mid-Nineteenth Century

Between the late-eighteenth century and the 1870s, iron production in the United States was carried out in small-scale facilities. Iron was the dominant metal building material used during this period, as steelmaking was only in its infancy by 1870. Compared to the later steel industry, iron production was a disconnected process performed by separate companies.

The primary stage of ironmaking involved the smelting of iron ore in a blast furnace to remove impurities from the ore. The resulting product, pig iron, was often not refined enough to be worked into shapes without breaking; the metal required further purification. Skilled iron workers called puddlers performed this process, melting, stirring, and kneading pig iron ingots inside puddling furnaces until slag could be drained and the ingots fused to become a 200 pound ball of wrought iron. This ball was then sent to a squeezer and muck rolls where remaining impurities were removed. The iron was usually put through a secondary production stage in which it was reduced into

blooms and then processed into finished products such as bars, rails, plates or sheets.¹⁴

Prior to the Civil War, almost all rolling mills were of the "two-high" type, in which iron was processed using two iron rolls or cylinders. After an initial pass, the hot wrought iron was lifted and carried manually over the top roll to be reinserted for another pass. With each successive pass, the pressure and width of the rolls were adjusted by workers called rollers. Through this process dependent upon manual labor and numerous reheatings, the iron was manipulated into rails, rods, bars, plates, and sheets.

Each of these stages of iron production required a specific set of locational attributes. Furnace operators, dependent upon a supply of bulky natural resources, located their furnaces in rural areas near hardwood forests and deposits of iron ore and limestone. Puddling furnaces were sometimes found in conjunction with blast furnaces, but more often they were associated with rolling mill operations. Because of their greater labor requirements, their need for access to transportation facilities, and their large and constant demand for pig iron ingots, rolling mill owners most often located their production facilities at the most accessible transportation nodes -- reasonably large towns and cities.

¹⁴Peter Temin, *Iron and Steel in Nineteenth-Century America: An Economic Inquiry* (Cambridge, MA: The Massachusetts Institute of Technology Press, 1964), 102-105.

Thus, prior to the 1870s, smelting, puddling and rolling operations in the United States were carried out at dispersed locations. Few, if any, companies had access to the large amount of investment capital required to operate a furnace, puddling department and rolling mill. Because iron smelting was notoriously unpredictable -- plagued by problems with furnaces, temporary labor shortages, and variable ore supplies -- pig iron production rates were uncertain. Moreover, market demand for pig iron also fluctuated. Rolling mills could also break down, rolled iron buyers sometimes cancelled their orders, and for both furnace and rolling mill there was always the possibility of work stoppages because of labor problems. Porter and Livesay argue that these fluctuations in supply and demand created a difficult situation for iron producers, and a need for an intermediary to match suppliers and buyers. With respect to this situation, they state "What was needed was an intermediate agency which could rationalize the flow of material by collecting large supplies from the sporadic output of many furnaces and matching them to the demands of a multitude of widely scattered foundries, bloomeries, and rolling mills. Only one man, the city merchant, was capable of performing this function, and iron smelters invariably turned to him."¹⁵

¹⁵Glenn Porter and Harold C. Livesay, *Merchants and Manufacturers: Studies in the Changing Structure of Nineteenth Century Marketing* (Baltimore: The Johns Hopkins University Press, 1971), 42.

Housing Industrial Workers: Varying Solutions

As they became part of the industrializing labor force, workers were confronted with the basic need for shelter in production areas. Laborers in some cases could provide their own shelter, but in many cases they did not have the financial resources to build housing and obtain the various goods which were needed for everyday life. Often, during the early years of factory production, independent landowners and/or developers would be the ones to respond to this demand for worker housing.

Large and small landowners hired contractors to build up tracts of land into speculative housing ventures.¹⁶ These developments varied in size from a few houses to acres lined with structures. Some developers offered rental housing to workers, seeking long-term financial returns through monthly payments. Others sought immediate returns on their speculative investment by selling houses to individuals. Workers in residential areas around the factories were thus usually divided into renters and owners.

Low wages limited most workers to inadequate and crowded housing close to the workplace. These conditions were worsened when the demand for low-skill, low-wage labor increased in production facilities. If independent developers could not or would not respond rapidly to the

¹⁶Sam Bass Warner, Jr., *Streetcar Suburbs: The Process of Growth in Boston, 1870-1900* (Cambridge: Harvard and MIT Press, 1962).

increased need for new housing, existing dwellings were made to accomodate more people. In many American cities and towns, large boarding houses and tenements were constructed by landowners and in some cases laborers themselves to supply the demand.¹⁷ This process created severe overcrowding, and overwhelmed the capacity of urban infrastructure, resulting in unsanitary and unhealthy living conditions.

The Reaction of Industrialists and Social Reformers

Sanitary reformers were horrified by these conditions and advocated measures that would alleviate crowding and prevent the further development of these types of residential areas. Throughout the nineteenth century, a series of reform movements attempted to alter the physical condition of American cities with the goal of making urban residents healthier and happier. The dominant philosophy of reformers was that of a causal relationship between the quality of environmental conditions and the level of human physical and mental health.¹⁸ They addressed important urban issues of the era, such as sanitation and the need to

¹⁷Sam Bass Warner, Jr., *The Urban Wilderness: A History of the American City* (New York: Harper and Row, 1972); Robert Ernst, "Immigrants and Tenements in New York City, 1825-1863," in R.A. Mohl and N. Betten, eds., *Urban America in Historical Perspective* (New York: Weybight and Talley, 1970), 113-126.

¹⁸Thomas Bender, *Toward an Urban Vision: Ideas and Institutions in Nineteenth-Century America* (Lexington: University of Kentucky Press, 1975); Paul Boyer, *Urban Masses and Moral Order in America, 1820-1920* (Cambridge: Harvard University Press, 1978).

expose urban dwellers to uplifting elements of rural settings and nature. The ideas of social reformers gradually filtered into the public consciousness during the nineteenth century, and resulted in organized sanitary reform and urban parks movements.¹⁹

Urban reform movements generally resulted in the commitment of governmental resources to the construction of infrastructural facilities. Professional civil engineers and architects were retained to design sewer and water systems, as well public parks for major American metropolitan areas such as New York City, Boston, Philadelphia, and Chicago.²⁰ Later, in the 1880s and 1890s, urban reformers began to recognize the interconnected nature of urban problems and that infrastructure must also be approached as a group of interconnected systems. The comprehensive planning movement began to address a wide range of urban issues through the planning, construction, and maintenance of many infrastructural facilities.²¹

¹⁹Jon A. Peterson, "The Impact of Sanitary Reform Upon American Urban Planning, 1840-1890," in Donald A. Krueckeberg, ed., *Introduction to Planning History in the United States* (New Brunswick, NJ: The Center for Urban Policy Research, 1987), 13-39.

²⁰Joel A. Tarr, "The Evolution of Urban Infrastructure in the Nineteenth and Twentieth Centuries," in Royce Hanson, ed., *Perspectives on Urban Infrastructure* (Washington, D.C.: National Academy Press, 1984), 5-66; Ellis Armstrong et. al., *History of Public Works in the United States, 1776-1976* (Chicago: American Public Works Association, 1976).

²¹Robert L. Wrigley, Jr., "The Plan of Chicago," in Donald A. Krueckeberg, ed., *Introduction to Planning History in the United States* (New Brunswick, NJ: The Center for Urban Policy Research, 1987), 58-72.

The social reformers' efforts to improve living conditions and the quality of life in American urban areas during the late nineteenth century placed heavy emphasis upon infrastructural solutions. As the views of the reformers began to be accepted by American society, they also influenced the attitudes of industrialists. Originally, manufacturers were concerned with the impact that the living conditions of their workers had on productivity at the plant. They quickly realized that it was in their best interest to work to preserve a pool of healthy and loyal workers who knew their jobs and were reliable in work attendance. In many cases, manufacturers felt that independent developers failed to provide adequate housing, which ultimately impacted the operation of production facilities. As a result, some manufacturers became involved with the provision of housing in urban settings and at rural production sites.

The Development of Company Towns and Model Company Towns

In established urban places, factory owners responded to worker need for housing by providing shelter that would provide the right mix of skill types for production. In and around nineteenth century American cities, mill owners built a variety of housing types to be used by workers. In a typical urban situation, for instance, rows of small uniform structures were built on land adjacent to the

mills. Larger houses were constructed for foremen at advantageous positions, from which the home activities of mill workers could be monitored and bosses could easily keep track of work attendance. Moving down the rows, houses became smaller and rents cheaper for semi-skilled and unskilled laborers. The result was the creation of distinct districts of company housing, which were added to preexisting urban patterns.

The involvement of factory owners in providing housing was not limited to large urban areas. Throughout the nineteenth century, manufacturers located their production facilities at rural sites near raw materials and power sources. In these cases, pools of labor and housing stock were limited or nonexistent. Workers and independent developers might eventually produce sufficient housing, but in many instances industrialists took matters into their own hands, recruiting labor and providing housing for them in isolated and often self-contained company towns.

Most nineteenth century company towns adhered to a basic policy of company ownership of housing, although there were variations in the willingness of facility owners to go beyond the provision and maintenance of shelter. The creators of company towns were confronted with decisions regarding the extent to which they would provide needed services such as water, sewer, hospitals, libraries and other infrastructural facilities. Some maintained control of these service systems and assumed total responsibility

for the provision of foodstuffs and other consumer goods by building and operating company stores.

The extent of company involvement usually was a direct reflection of the goals that manufacturers hoped to achieve by providing housing, services, and commercial functions. One possible set of anticipated returns on investment was economic profit from housing. If a company wished to receive immediate returns on housing investment, rents were high and were automatically deducted from paychecks. These types of rent practices ensured a direct return of wages to the company and quickly paid for the initial outlay in housing construction. Once the initial investment was recovered, a large percentage of the proceeds from rent were profit, and company housing became a money-making scheme.

Rental housing was also a method of tying the financial fortunes of workers to the company. It imposed limitations on the worker's abilities to seek alternative housing opportunities, especially home ownership. When high rents were deducted directly from wages, little money remained for families to provide for other basic needs. In this situation, saving for the down payment on a house was almost impossible.²² In many isolated company towns, an open housing market did not exist, further limiting worker residential choice.

²²Margaret F. Byington, *Homestead: The Households of a Mill Town* (New York: Russell Sage, 1910).

Differences in companies' willingness to commit resources to company towns resulted in differences in company town environments. When cost minimization was the major concern in the production of housing, the results were often small, unsanitary, poorly constructed houses. These types of housing conditions were usually accompanied by unpaved streets and a lack of basic services. Rents were many times high, housing policies were strict, and the range of goods and services were limited to what the company would provide and to what company scrip could buy. The starkest examples of "cost minimization" company towns in the United States were "patches" created by coal operators to house miners. Life for workers in these places was little, if any, better than the boarding house and tenement environments provided by independent developers.²³

Some industrialists chose not to go the cost minimalization route, and instead created model company towns. Larger investments were made to create a pleasant environment for workers through the provision of running water, appropriate drainage, and adequate light and ventilation. Worker housing was part of an ordered and usually professionally designed company-owned settlement. For all of their differences, model company towns still

²³Crandall A. Shifflett, *Coal Towns: Life, Work, and Culture in Company Towns of Southern Appalachia, 1880-1960* (Knoxville, TN: The University of Tennessee Press, 1991), 48-49; Richard V. Francaviglia, *Hard Places: Reading the Landscape of America's Historic Mining Districts* (Iowa City, IA: The University of Iowa Press, 1991), 80-81. 78

included the basic staples of all company towns: production areas, infrastructural facilities, and commercial functions.²⁴

The major philosophical similarity between model and other company towns was that both were created by industrialists to ensure the continuity and stability of the labor force. The methods used to achieve this end were different in model company towns, however. The reign of manufacturers over minimal cost, poorly built houses and service facilities was replaced by a more benevolent attitude toward labor. Many model company town builders viewed labor as more than just another production input that needed to be controlled, thus they adopted a more humanistic approach towards workers.

The realization that labor pools were made up of people, and that people had lives away from the workplace led some industrialists to believe that it was their Christian duty to improve the living environment of workers by making it ordered and cleanly. As a result, model company town builders developed paternalistic attitudes towards labor. Paternalistic industrialists believed that good housing in concert with educational, cultural, and civic awareness would make workers into better individuals, citizens, and Christians. Housing was seen by factory owners and urban reformers as an opportunity for workers and their families to experience a morally uplifting

²⁴Walter L. Creese, *The Search for Environment, The Garden City: Before and After* (New Haven: Yale University Press, 1966).

lifestyle that included religious observance and educational attainment.

Model company town builders had begun to believe in their own modified version of environmentalism: that a good living environment made better people and better people made better workers.²⁵ Paternalism was not only a way to uplift workers, but a way to make them more efficient. Industrialists incorporated environmentalism into the model company towns that they developed because they believed that their manufacturing operations would be made more secure and profitable by doing so. Having been influenced by their pleasant surroundings, model company town residents would be more reliable workers because they could cope better with the strenuous nature of industrial life than their city or non-model company town contemporaries. They would also appreciate the benevolence of industrial employers who made it possible for them to live high quality surroundings at low cost. Thus factory owners aimed to achieve two goals that expanded far beyond the mere maintenance of a work force and providing shelter for it. They sought to foster a moral code of conduct and company loyalty within their workers.

Model company towns were idealized blueprints that allowed capitalists and industrialists to create places with better basic urban conditions and to attempt to

²⁵Stanley Buder, *Pullman: An Experiment in Industrial Order and Community Planning, 1880-1930* (New York: Oxford University Press, 1967).

influence the population that lived in those places. With their emphasis on workplace efficiency and company loyalty, they were meant to be orderly and clean alternatives to the clutter, corruption, and unsanitary conditions that existed in nineteenth century industrial cities. Model company towns were model in a scale sense, in almost all cases they were planned for only a few thousand inhabitants and several hundred houses. This was in part so they could be managed more easily as compared to larger urban areas. Finding a scale at which it was practical to build was important if industrialists wished to take responsibility for, and influence the actions of, their labor force away from home.

Company Towns and Model Company Towns as Places

During the nineteenth century, the concept of the model company town was adapted and altered in a variety of cultural and environmental contexts. Model company towns in the United States mixed company housing, company-owned service facilities, and professional architectural and urban design. The earliest of these places, such as Lowell, Massachusetts (1823), were created to provide worker housing near factories that had been built on greenfield sites. Gradually these basic goals were expanded to include environmentalism. Later towns such as Pullman, Illinois (1880) were, in the main, attempts to provide

workers with living environments that would promote efficiency in production. They were also intended to demonstrate to industrialists, politicians, and the public-at-large how to do away with the negative impacts of housing shortages, unfavorable urban conditions, and labor unrest on the production process.

The business considerations underlying American company towns were generally played down by industrialists and social reformers in lieu of the benevolent aspects of environmentalism. The early development of Lowell, Massachusetts, one of the first industrial company towns in the United States, reflected the importance of the town as a business venture. Founded on a rural greenfield site during the early 1820s, the town was successful in large part because the factory owners, the Merrimack Manufacturing Company, were able to attract a work force that met their labor requirements. Doing so depended upon the company's ability to convince farmers in the New England region that their daughters would be living and working in a decent environment if they came to Lowell to work in the mills. Thus, the provision of a clean, safe and pleasant living environment was for the most part a response by the company to existing societal attitudes and a strategy to attain a specific required labor force.²⁶

Later, the Lowell mills were expanded and other industries were established in the town. The Merrimack

²⁶Bender, *Toward an Urban Vision*, 33-38; Boyer, *Urban Masses and Moral Order in America*, 78-84.

Company continued to provide housing, although their work force eventually expanded beyond young female operatives to include a significant number of male machinists, operatives, and laborers. Consequently, quality housing became less of a strategy for attracting labor for production. As Lowell grew and agglomeration economies attracted other textile manufacturers and large numbers of new employees to the community, the Merrimack Company's control began to weaken. Many of the new workers were unable to obtain housing from the company or other landlords, and were forced to build their own shelter on unoccupied tracts of land.²⁷ Thus, by 1845, living conditions in Lowell mirrored those that were developing in the larger industrial cities of the United States.

Another example of an early industrial company town was Hopedale, Massachusetts, created by the Draper Company for the production of textiles and the housing of workers. The town was founded as a business proposition, and was intended mainly to ensure the presence of a reliable workforce. During later periods of growth, however, professional architects and planners were retained to create "model neighborhoods" within the community. Eventually, the town was commended as a model in urban social reform; receiving a gold medal for its housing exhibit at the Louisiana Purchase Exhibition, a silver medal at the Paris Exposition of 1900, and other gold

²⁷Ibid.

medals at expositions in Liege in 1905 and Milan in 1906.²⁸ The Draper Company took advantage of these accolades by incorporating the model image of Hopedale into its advertisements. By publicizing their model town and their perceived progressive attitude towards labor, the Draper Company hoped to improve its public image.

Later in the nineteenth century, the town of Pullman, Illinois was founded by the Pullman Palace Car Company of Chicago. In providing housing, meeting halls, a library, and a shopping precinct near his sleeper car works, the company's owner George Pullman hoped to

"attract and retain a superior type of workingman, who would in turn be "elevated and refined" by the physical setting. This would mean contented employees and a consequent reduction in absenteeism, drinking, and shirking on the job. Furthermore, such workers were expected to be less susceptible to the exhortations of "agitators" than the demoralized laborers of the city slums."²⁹

Mr. Pullman also believed that in addition to retaining a high-quality, controllable work force, that he (and his company) could receive a direct return on the housing investment made in the community. He attempted to achieve these goals through an expert urban design that would provide an ordered physical setting for the daily work routine.

When the construction of Pullman was completed in 1884, the total cost was eight million dollars, an

²⁸John S. Garner, *The Model Company Town: Urban Design Through Private Enterprise in Nineteenth Century New England* (Amherst, MA: The University of Massachusetts Press, 1984), 205-210.

²⁹Buder, *Pullman: An Experiment in Industrial Order and Community Planning*, 44.

astronomical sum for the period. The large capital investment was used to build housing furnished with gas, running water, and indoor toilet facilities, macademized streets, two large public parks, a municipal sewage system, and a large Arcade building which housed a restaurant, post office, shopping area, public library, and theater. Much consideration was given to landscape and architectural design, with manicured flower beds and public buildings in the "secular Gothic" and "Queen Anne" styles. The Pullman Palace Car Company had begun the production and repair of railroad sleeper cars in early 1881, and maintained control over the entire physical fabric of the community. Thus, the company's reign extended over not only wages, but also housing supply, public space, and rent levels.³⁰

Most social commentators during the early years of Pullman's history sang its praises, not perceiving the undercurrent of worker dissatisfaction that had emerged in the town over a period of years. By the early 1890s, this undercurrent was brought to the surface by the continuation of some of the Pullman Company's policies and perturbations in the national economy. Because George Pullman and his investors had sought a six percent return on housing, rents were set at fixed levels. At the same time, the company maintained a sliding wage scale in the rail car works based on output and current market prices. In tough financial

³⁰Buder, *Pullman*; Almont Lidsey, *The Pullman Strike: The Story of a Unique Experiment and of a Great Labor Upheaval* (Chicago: The University of Chicago Press, 1942).

times, such as those following the economic downturn of 1893, it became very difficult and in some cases impossible under these policies for workers to afford housing in the Pullman community. The company, however, refused to lower rent levels or to fix a minimum wage for employees. This left workers with two options, moving to another area for housing or rebelling against the policies of the company. Worker sentiment was expressed in the Pullman Strike of 1894, which resulted directly in a prolonged shutdown of the Pullman Palace Car Company's works and indirectly in the paralysis of the national rail system from Ohio to California with the sympathy walkout of the American Railway Union.³¹

The successes and failures of these places created by industry had an effect on the development of other places. For example, the positive publicity given to the communities of Lowell, Hopedale, and Pullman at various times more than likely encouraged similar "experiments" at other production sites in the United States. The labor unrest and violence that later resulted from company strategy at Pullman no doubt also impacted perspectives toward paternalism and the development of model company towns. The continuum of this impact is evident when analyzing the development of industrial communities during this period.

³¹Ibid.

The rise of corporate capitalism and the advent of company communities signified new strategies in the historical and spatial sequence of capital accumulation and industrial production. Not only were these strategies distinguished by the increasing importance of the corporate form, technological innovation, and new social relations, but also by the spatial restructuring of economic activity. Thus, the geographic significance of how these strategies played out on the landscapes of specific regions.

Industrial Capital in the Upper Tennessee River Valley:
The Establishment of the Roane Iron Company

In the late 1860s and early 1870s, a positive environment existed for the establishment of industrial enterprises in Tennessee. Governmental leaders were touting industry as the state's hope for economic development and recovery, and were instituting policies that encouraged industrial location within its borders. Union soldiers had been exposed to Tennessee during the Civil War, and had seen industrial possibilities in its regions (East Tennessee in particular) and resources. It was in this context that the first large-scale industrial activity came to the Upper Tennessee River Valley.

The Roane Iron Company was organized and incorporated in 1867, the brainchild of Union General John T. Wilder, one of the principal "economic carpetbaggers" of the

reconstruction era. During the Civil War, as Wilder traveled through the region during military operations, he took notice of the deposits of coal and iron ore that were present along the slopes of Walden's Ridge, and became intrigued with the possibility of a business enterprise in Tennessee.

At the close of the Civil War, Wilder and another Union officer stationed in East Tennessee, Captain Hiram S. Chamberlain, set about establishing an iron production facility in the Tennessee Valley. Both men had previous experience in the iron industry. Wilder had served an apprenticeship at an iron foundry in Columbus, Ohio during his formative years, and moved west to Greensburg, Indiana in 1857 where he established his own foundry before the war.³² Chamberlain had been the Union chief quartermaster of East Tennessee, and while stationed in Knoxville had operated a foundry that produced iron products for use by Federal forces.³³ Their initial step was the purchase of 928 acres of Roane County land from local land owners in September of 1865.³⁴ It wasn't until almost two years later in June of 1867 that the Roane Iron Company was officially organized as a branch company of the East Tennessee Union Petroleum, Coal, Iron & Salt Company

³²Samuel C. Williams, *General John T. Wilder: Commander, The Lightning Brigade* (Bloomington, IN, 1936), 2.

³³Michael J. McDonald and William B. Wheeler, *Knoxville, Tennessee: Continuity and Change in an Appalachian City* (Knoxville, TN: University of Tennessee Press, 1983), 21.

³⁴Office of the Register of Deeds, Roane County, TN, Deed Book O, 354-359. Office of the Register of Deeds will hereafter be cited as ORD.

(ETUPCI&S). The ETUPCI&S, controlled by important Knoxville business figures, had procured the land that Wilder and Chamberlain had purchased in 1865, and the newly formed Roane Iron Company with Wilder and Chamberlain as directors, immediately reacquired it.³⁵

Wilder and Chamberlain were initially joined by five Midwestern capitalists in the venture: W.O. Rockwood, Antrim R. Forsythe, David E. Rees, John M. Lord, and Henry C. Lord. These men were apparently associated with Wilder and Chamberlain either through wartime contacts or through business connections in Indiana or Ohio, and were well equipped to aid in the acquisition of startup capital for the company. W.O. Rockwood was an Indiana native who had been a major in the Union army and served under General Wilder in East Tennessee. Forsyth was an Indiana railroad promoter and banker; Rees was a banker in both Indianapolis and Chattanooga; John Lord was a wealthy Mexican War veteran from Indianapolis; and Henry Lord was a railroad promoter from Ohio.³⁶ In December of 1867, the Roane Iron

³⁵Roane Iron Company, *Board of Directors Minutes*, June 8, 1867. Roane Iron Company will hereafter be cited as RIC. In previous studies of the Roane Iron Company, it was suggested that no records of the Company were still in existence. However, I discovered through local citizens that a man named Tom Ward had salvaged the board of directors minutes when the rest of the records had been hauled off for scrap in the 1950s. Mr. Ward informed me that he had donated these records to the University of Tennessee in the early 1980s, and upon investigating this I found that the Special Collections Library at the University indeed had a microfilm copy of them.

³⁶Judge John Allison, Ed. *Notable Men of Tennessee, Volume II*. (Atlanta, GA: Southern Historical Association, 1905), 303-304; Snyder Roberts, "Roane County's Industrial Belt, 1868-1932," 11. This is a collection of historical essays written by Mr. Roberts and published by the *Roane County News* from December 30, 1981 to September 15, 1982.

Company was officially incorporated by the state of Tennessee, with a stock capitalization of \$100,000.³⁷ All of the stock declared at this time was owned by the original seven principals. Thus, although legally incorporated, the company was closely held and managed along proprietary lines.

Wilder and Chamberlain had chosen a site for Roane Iron that was close to the iron and coal deposits of Walden's Ridge, and within five miles of the navigable Tennessee River. The Company began activity in the region almost immediately in 1867. An additional 1,000 acres of land was purchased in December of that year, and a contract was drawn up for the construction of a blast furnace to be completed by September 1st of 1868. John Lord and W.O. Rockwood were to undertake the building of the furnace, and they agreed to build the furnace to specifications: a furnace to be powered by bituminous coal or coke, with a capacity of at least 15 tons of pig iron per day.³⁸ These specifications are significant because charcoal was the dominant fuel nationally for iron production, and there were no pig iron facilities utilizing mineral fuel in the South at this time. They indicate that the management of Roane Iron was intent on creating a state-of-the art production facility, one on par with leading plants in the North.

³⁷*Acts of Tennessee, 1867-1868, Chapter 27, 34-36.*

³⁸ORD, Roane County, TN, Deed Book P, 566-567; RIC, *Board of Directors Minutes*, September 9, 1867.

Over the ensuing year and a half, the Roane Iron Company laid the groundwork for the efficient production and distribution of pig iron. Rights-of-way were secured for a rail line to the Tennessee River, and for a road into coal extraction areas. The company continued its policy of obtaining local land for mineral extraction, either through outright purchase or mineral lease agreements. Also, a thirteen acre tract was purchased on the Tennessee River to serve as a company landing.³⁹ In December of 1868, the Roane Iron Company's first blast furnace was "blown in," initiating the production of pig iron.

Laborers at the rural Roane Iron production site required housing, and in response to this need, the company founded a settlement adjacent to the production facility. The community was named Rockwood, in deference to W.O. Rockwood, the first president of the company, and the reality that former Confederates in the area might not look favorably on the new project if it had been named for the more celebrated General Wilder.⁴⁰ The fact that the establishment of a town was not mentioned at early board of directors meetings suggests that the settlement was a spontaneous product of needs generated by the production facility. The first mention of housing or lot subdivision at a meeting was in June of 1869, seven months after the startup of production. In this instance, the plant superintendent (John Wilder) was authorized by the board of

³⁹RIC, *Board of Directors Minutes*, December 18, 1868, June 2, 1869.

⁴⁰Shelley, Galloway, Wolfe, and Sneed, "Towns - Old and New," 60.

directors to subdivide company land in certain areas, and lease it with restrictions.⁴¹ This would suggest that company land around the facility had not been subdivided previously, and was being divided and leased on a need basis.

Expansion and Integration: The Early Years of Roane Iron

The Roane Iron Company's early years of operation in the Tennessee Valley were both innovative and tenuous. The use of mineral fuel at the production facility's Upland South location was the company's most significant technological breakthrough. The coal found in this part of the Tennessee Valley was bituminous, typified by softness and high gas content. To be used effectively for iron production, bituminous coal had to be put through a process which would expel its gases, leaving a denser product which more nearly approximated pure carbon -- coke. The coking process involved burning the coal in ovens in the absence of air to expel the gases and leave the carbon. Coke ovens were required to protect the process from outside elements, and to retain maximum heat for the operation. Coke had not been used as furnace fuel in the South prior to the Civil War because of the high sulfur content of coal found there, which contaminated iron made from it.⁴² The Roane Iron Company was able to produce coke of high enough quality by

⁴¹RIC, *Board of Directors Minutes*, June 2, 1869.

⁴²Temin, *Iron and Steel in Nineteenth Century America*, 89, 201.

1868 to make acceptable pig iron, the first instance of this innovation in the former Confederacy. This enabled the Company's facility at Rockwood to turn out from twelve to fifteen tons of pig iron per day, three times as much as charcoal furnaces could produce.⁴³

Upon solving the coke fuel problem, Roane Iron built rows of coke ovens between its coal mines on Walden's Ridge and the iron furnaces to the east. Coal was brought on narrow gauge tracks from the mines to the ovens, and then in its coke form was taken to the furnaces for use as fuel. Iron ore was transported in the same manner from more dispersed areas of the company's holdings to the furnace. The pig iron produced was hauled on tracks five miles to the Tennessee River, initially by mules and later, after 1870, by a company-owned locomotive.

In the Roane Iron Company's early years of operation, the Tennessee River provided the only feasible means of transporting pig iron to demand points. Because in general the production of blast furnaces exceeded the demand of single refiners, Roane Iron required more than one steady consumer of pig iron.⁴⁴ Early on, its principal consumers were rolling mills found upriver in Knoxville, Tennessee (the Knoxville Iron Company) and downriver in Chattanooga, Tennessee (the Southwestern Iron Company). The company struggled during this early period with production

⁴³Morrow Chamberlain, *A Brief History of the Pig Iron Industry in East Tennessee* (Chattanooga, TN, 1942), 6.

⁴⁴Porter and Livesay, *Merchants and Manufacturers*, 41-43.

processes and unpredictable markets. Because the coke fuel method was new in the region, the company had to experiment with the intricacies of the process using Tennessee coal, causing irregularities in production. Also, the economy of the region was still recovering from the war, making demand for pig iron variable at best.

The Roane Iron Company survived this early period, and by 1870, began expanding its operations. From its inception, Roane Iron had been backwardly integrated, controlling most of its coal, iron, and limestone supplies through large land holdings in the Upper Tennessee River Valley. In 1870, the company made a move toward forward integration by purchasing the Chattanooga Rolling Mills, the property of its former customer the Southwestern Iron Company. The purchase price was \$225,000 in Roane Iron stock. In effect, the transaction served as a merger, making the principals in Southwestern Iron significant stockholders in the company.⁴⁵

The Chattanooga Rolling Mills facility had been constructed by the Construction Corp of the United States Military Railroads during the Civil War, after Federal forces had captured Chattanooga. The mission of the mill was to reroll tons of iron rails that had been damaged by retreating Confederate armies, so that they could be used for repairs on captured Southern rail lines. In 1866,

⁴⁵RIC, *Board of Directors Minutes*, April 22, 1870, May 12, 1870. The capital stock of the company was increased at this time to \$600,000, presumably to reflect the new acquisition.

shortly after the close of the war, the Southwestern Iron Company acquired ownership of the facility, to use it as a rerolling operation for used iron rails. During the next three years, Southwestern Iron struggled to make the Chattanooga mill profitable in the post-war South. Southern railroads needed rails repaired and rerolled, but did not have enough capital to pay for the service. Because of this the supply of used iron rails was not steady, and the mill frequently had to operate at less than capacity level. In 1869, Southwestern Iron remedied this problem by installing puddling furnaces at the Chattanooga facility, which allowed the production of rails from both old rails and pig iron.⁴⁶ This made the rolling mills much more versatile, and attractive to a company such as Roane Iron looking to expand its operations.

With the acquisition of the Chattanooga Rolling Mills by the Roane Iron Company, the original blast furnace operation at Rockwood became part of an integrated iron production system. Pig iron produced at Rockwood was shipped very cheaply down the Tennessee River by boat to Chattanooga, where it increasingly became the dominant component in the manufacture of rails. During the 1870s, Roane Iron supplied iron rails to railroads that were beginning to expand lines into the South. The Louisville and Nashville Railroad was constructing significant mileage

⁴⁶James F. Doster, "The Chattanooga Rolling Mill: An Industrial By-Product of the Civil War," *East Tennessee Historical Society's Publications*, 36 (1964), 45-51.

of rail lines during the early to mid 1870s, as was the Cincinnati Southern Railway.⁴⁷ The company was able to compete successfully for iron rail contracts with northern producers because of its efficient integrated production system and its proximity to Southern construction areas.

The creation of an integrated iron production system with its relatively steady demand for pig iron necessitated further investment at the Rockwood furnace site. In late 1871, the stock capitalization of the company was increased to \$1,000,000, with proceeds from the issue dedicated for the construction of a second blast furnace at Rockwood.⁴⁸ The company apparently felt that larger supplies of pig iron would be needed at Chattanooga in the future with the favorable market for iron rails. In addition, negotiations were being carried on with the Cincinnati Southern Railroad by 1872 for a right-of-way through Roane Iron land holdings in Roane County. The company wanted the Cincinnati Southern's Cincinnati to Chattanooga route to go through Rockwood, providing another transportation outlet for pig iron in addition to the Tennessee River. The result of these negotiations was Roane Iron's donation of land and timber and stone for construction through Roane County, land in Rockwood for depot and shop grounds, as well as right-of-way over company land in Chattanooga.⁴⁹

⁴⁷Ibid, 53; R.O. Biggs, "The Cincinnati Southern Railway: A Municipal Enterprise," *East Tennessee Historical Society's Publications*, 7 (1935), 81-102; RIC, *Board of Directors Minutes*, January 22, 1875.

⁴⁸RIC, *Board of Directors Minutes*, December 15, 1871.

⁴⁹Ibid, July 10, 1872.

By 1876, the Roane Iron Company was operating successfully in the Southern iron rail market. It was employing approximately 500 workers at the Chattanooga mill and 300 in the two blast furnaces at Rockwood. These facilities had output capacities of 28,000 tons of rails per year and 24,000 tons of pig iron per year respectively at this time.⁵⁰ Unfortunately, just as Roane Iron had begun to operate profitably in the Southern iron market, technological innovation altered preferences of rail consumers. Bessemer and open hearth steel making had been gradually perfected in the United States during the late 1860s and early 1870s. In fact, as early as 1865, the first Bessemer steel rails were rolled in Chicago. This was followed by the founding of large Bessemer plants at Bethlehem, Pennsylvania in 1868 (Bethlehem Iron Company), Johnstown, Pennsylvania in 1871 (Cambria Iron), and Braddock, Pennsylvania in 1872 (Edgar Thompson Steel Works). The Trenton Iron Company at Trenton, New Jersey was using the open hearth method to make steel rails by 1868, and was supplying railroads in the Northeastern United States by 1870.⁵¹

Steel rails were stronger and more durable than iron ones. Since the late seventeenth century, iron makers had known that blister steel, a material stronger than iron,

⁵⁰The company struggled somewhat during the recession years of 1873 and 1874, but continued to operate throughout the period.

⁵¹Joseph G. Butler, Jr., *Fifty Years of Iron and Steel* (Cleveland, OH: The Penton Press Co., 1923), 56-60; Allan Nevins, *Abram S. Hewitt, with Some Account of Peter Cooper* (New York: Harper & Brothers, 1935), 246-250.

could be made by heating wrought iron sheets until the impurities were burned away. But blister steel was of uneven quality, and could only be produced in small amounts. Bessemer and Open Hearth innovations solved these problems, and made steel available in large amounts. Railroad managers realized that steel rails would allow the use of heavier and more powerful locomotives, larger freight trains, and permit more efficient overall operation. By the mid to late 1870s, the purchase of steel rails as replacements for iron by railroads was only limited by capital availability and rail supply. This left the Roane Iron Company in a undesirable position, as the railroads it used to supply switched to steel rails for new construction and replacement. In order to stay in the rail supply business, the company had to adapt.

Iron to Steel: Roane Iron Enters the Steel Rail Market

The Roane Iron Company endeavored to become the first enterprise to make steel in the South. The possibility of manufacturing steel rails was first discussed at a board of directors meeting in April of 1877, and the idea was accepted as a sound one. By July of 1877, Captain Chamberlain had traveled to steel works in Cleveland, Ohio, and Harrisburg, Pennsylvania investigating steel production methods. He had also met with Alexander Holley, a partner in the firm of Winslow, Griswold and Holley, which held Sir

Henry Bessemer's American steel-making patent and had built the first commercial bessemer steel plant in the United States at Troy, New York.⁵² Chamberlain apparently preferred the Siemans-Martin (open hearth) over the Bessemer process for steel production at Chattanooga, for by April 1878 construction of a Siemans-Martin works was under way.⁵³

The Siemans-Martin production process was a variation of the open hearth principle originally devised by Josiah Marshall Heath in 1845. It involved a regenerative furnace, which used the heat of combustion normally lost in hot chimney gases, in combination with the practice of charging scrap iron to dilute pig iron impurities.⁵⁴ The choice of the Siemans-Martin process was a logical one for the Roane Iron Company at this time. It did not require high quality pig iron as did the Bessemer process. High quality pig iron would have been prohibitively expensive given the company's existing iron ore supplies. The quality of output could also be more effectively controlled with the Siemans-Martins process, in contrast to the uncertain

⁵²RIC, *Board of Directors Minutes*, July, 10, 1877. Alexander Holley was instrumental in the adoption of the Bessemer steel-making process in the United States. He helped to develop the first successful Bessemer converter in the United States at Wyandotte, Michigan in 1865, and was also involved in the construction of the Cambria Iron Company's Bessemer works at Johnstown, Pennsylvania in 1867.

⁵³Ibid, April 17, 1878.

⁵⁴Leo F. Reinartz, "The Open Hearth Furnace - Part I" in *History of Iron and Steelmaking in the United States* (New York: American Institute of Mining, Metallurgical, and Petroleum Engineers, 1961), 75. The use of the regenerative furnace was patented by Sir William Siemans, a German-born English citizen in the early 1860s. The method of using scrap iron to dilute pig iron impurities was patented by the Martin Brothers of France shortly thereafter. Hence the name Siemans-Martin process.

quality of each Bessemer "cast."⁵⁵ One of the factors that was probably most important to Roane Iron was cost, and this also favored Siemens-Martin. The company probably wanted to build a fairly small facility, and the minimum size of an efficient open hearth plant was far smaller than that of a Bessemer plant.⁵⁶

By early 1879, two Siemens ten-ton acid open hearth furnaces and associated equipment were installed at Chattanooga, and steel was being produced for the first time in the South (Figure 2.1). The inputs were pig iron from Rockwood, scrap iron, and a mixture of raw iron ore from Cranberry, North Carolina, Cartersville, Georgia, and Maryville, Tennessee.⁵⁷ This combination did not make high quality steel, however, and Roane Iron continued experimenting with the production process. The major problem was the high phosphorous content of the Rockwood pig iron, which contaminated the steel manufactured from it. The acid process which the company was using did not remove phosphorous in the course of refining the iron; the phosphorous would simply not combine with the acid lining in the refining vessel. In the years to come, experimentation revealed that the *basic* process, in which a basic vessel lining was substituted for an acid one, solved this problem by allowing phosphorus to combine with the lining and be carried off in the slag.⁵⁸ Unfortunately for

⁵⁵Nevins, *Abram S. Hewitt*, 241-242.

⁵⁶Temin, *Iron and Steel in Nineteenth Century America*, 141.

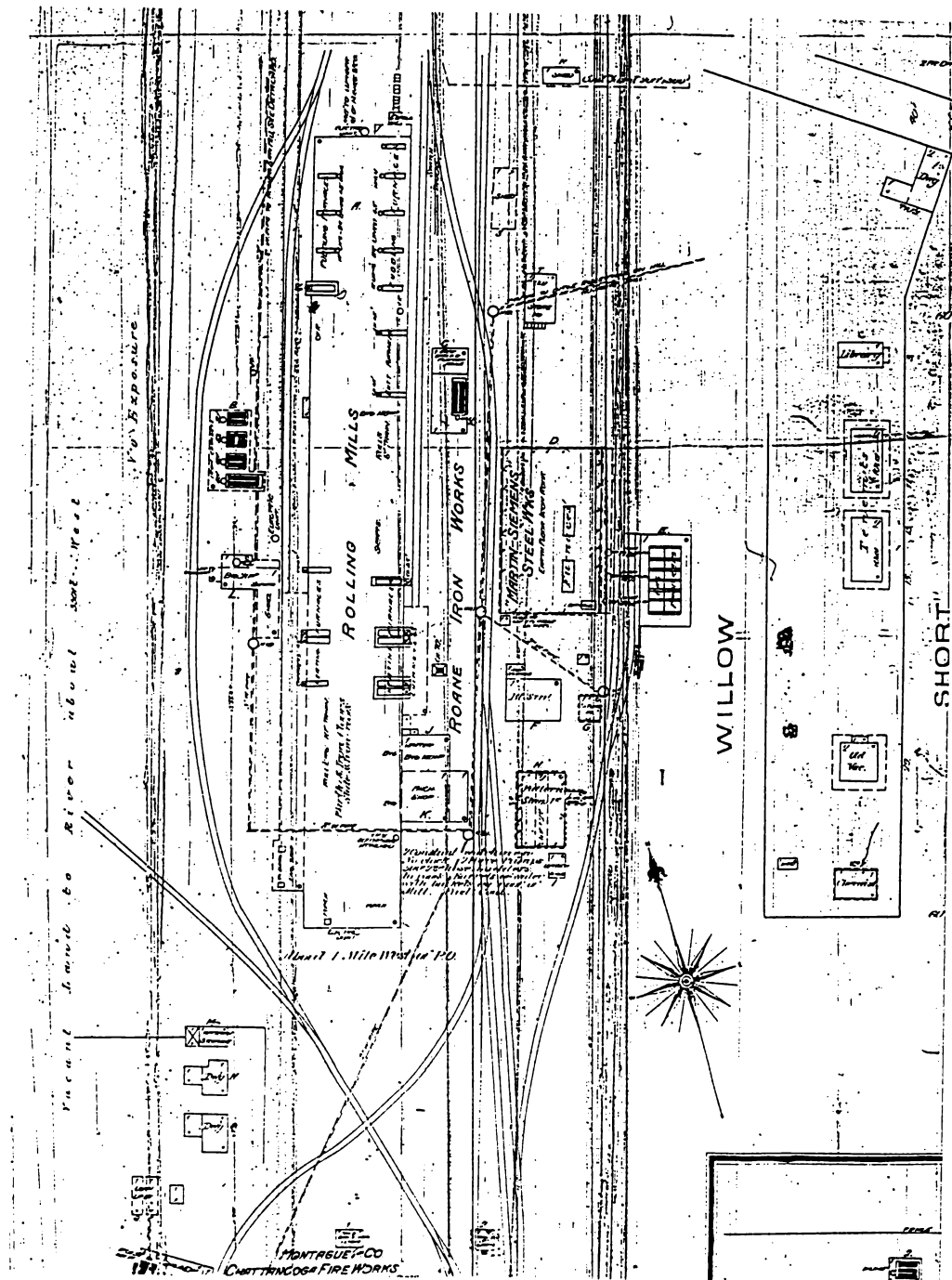
⁵⁷Chamberlain, *A Brief History of the Pig Iron Industry*, 138.

⁵⁸Temin, *Iron and Steel in Nineteenth Century America*, 141-142.

Figure 2.1.

The Chattanooga Rolling Mills Siemens-Martin
Steel Facility

Source: Sanborn Map Company, *Sanborn Fire Insurance Maps*
Chattanooga, Tennessee, 1885.



Roane Iron, this innovation did not come soon enough and the phosphorous content problem continually plagued the operation at Chattanooga, eventually causing its demise. Although 50,000 tons of steel rails were produced and sold over a four year period by Roane Iron, the constant problems with steel quality in combination with increased competition caused the company to close its Chattanooga operation in January of 1883.⁵⁹

This was not the end of the Roane Iron Company's attempt at profitable steel production, however. The company apparently felt that there was still a profit to be made in the steel rail market, and almost immediately after the Chattanooga shutdown in 1883 began inquiring about the Bessemer steel-making process.⁶⁰ By July of 1883, Roane Iron had obtained permission from the Bessemer Steel Company to use the basic Bessemer process for a royalty of one dollar per ton of finished steel.⁶¹ The switch to the Bessemer process, however, would require several prerequisites which the company did not have in 1883. The first of these was a supply of fairly pure iron ore from which to make low-phosphorous pig iron. It had become apparent during the company's experiment with the open hearth process that the phosphorous content of iron ore found in Roane County was too high to make consistent quality steel. Ore quality was even more important in the

⁵⁹Doster, "The Chattanooga Rolling Mill," 53-54; RIC, *Board of Directors Minutes*, January 18, 1883.

⁶⁰RIC, *Board of Directors Minutes*, January 18, 1883.

⁶¹*Ibid*, July 18, 1883.

Bessemer process, and a new source would have to be found. The second was the availability of large-scale capital. The purchase of a Bessemer converter was much more costly than smaller-scale open hearth equipment, and would require larger amounts of capital than the company had ever before had to raise.

The decision to produce steel using the Bessemer process forced the Roane Iron Company for the first time to look outside of its closed capital structure for operating funds. The company realized that it could not obtain the large amount of capital it would need through its traditional means of offering new stock issues to its limited group of existing stockholders. Thus, it looked to the national finance market for the capital needed to retool the Chattanooga facility. At this time, however, the company did not have a nationally-known business figure associated with it, and financial institutions did not generally loan large amounts of long-term capital to industrial enterprises. The Roane Iron Company needed a contact through which to gain access to finance capital.

Roane Iron found this contact in native East Tennessean Charles McClung McGhee. Charles McGhee had spent the majority of his adult life in Knoxville, Tennessee and since the pre-Civil War period had been involved in railroad development in the South. The company's initial connection to McGhee was through Hiram Chamberlain. The two men had met during the Union army's

occupation of Knoxville, when Chamberlain was chief quartermaster and McGhee was one of the city's most prominent businessmen. They had business dealings during this period, and apparently forged a profitable relationship, for they retained their association after the close of the war.⁶² By the mid 1880s, McGhee was a vice president of the East Tennessee, Virginia & Georgia Railroad (ETV&G), and was shuttling back and forth between Knoxville and New York City on business.⁶³ He was developing relationships with finance bankers through his railroad dealings that would prove valuable to Roane Iron.

McGhee became involved with Roane Iron in the spring of 1882, when, for the first time, he became a stockholder and member of the board of directors. This was shortly before the decision was made to produce Bessemer steel at Chattanooga.⁶⁴ For almost four years after the 1883 shutdown, the Chattanooga mill remained idle while Roane Iron made preparations and waited for the right time to re-enter the steel rail market. By 1886, market prices had risen sufficiently to prompt the company to commit to production at Chattanooga. The board of directors voted in

⁶²William J. MacArthur, Jr., "Charles McClung McGhee, Southern Financier," (PhD Dissertation, University of Tennessee, Knoxville), 199-200. MacArthur's dissertation provides a large volume of information on McGhee's financial and investment activity over his lifetime.

⁶³East Tennessee, Virginia & Georgia Railroad, *Board of Directors Minutes*, Railroad Manuscript Collection, Newman Library, Virginia Polytechnic University. East Tennessee, Virginia & Georgia Railroad will hereafter be cited as ETVG. The Newman Library at the Virginia Polytechnic University administers the records of all of the railroad companies that were incorporated into the Southern Railway in 1895.

⁶⁴RIC, *Board of Direstor's Minutes*, April 19, 1882.

October of 1886 to raise \$125,000 for the construction of the Bessemer works through the sale of bonds with the Chattanooga property as collateral. Chamberlain repeatedly requested and received McGhee's help in finding a lender to provide this capital.⁶⁵ The floating and sale of bonds was handled through the Central Trust Company of New York, one of the foremost financial institutions in the nation at this time.⁶⁶ McGhee lent invaluable assistance in the negotiations between Roane Iron and the Central Trust Company, as he had dealt with the trust company as a representative of the ETV&G Railroad.⁶⁷

In the ensuing year, Chamberlain and the Roane Iron Company attempted to build an efficient steel production facility at Chattanooga. There were problems, however, with the quality of iron ore to which the company had access for steel manufacture. Roane Iron was forced to buy iron ore land in Carter County, Tennessee, and also to import pig iron from England for use in the Bessemer process. As Chamberlain himself explained the situation:

I find it necessary to make a rail perfectly satisfactory [sic] that it is much better to use some English pig...I think it better that we have some foreign iron very low in phosphorous in our mixture...we are making rails for the Cincinnati Southern and they are applying very serious drop tests to show the breaking or non breaking quality of the rail. To stand this test I think it better to use this English iron, or to use a small percentage of it.⁶⁸

⁶⁵Chamberlain to McGhee, *McGhee Papers*, McClung Historical Collection, June 10, 1886, June 19, 1886, October 16, 1886, October 23, 1886. All letter references made in this chapter are to the McGhee Papers.

⁶⁶RIC, *Board of Directors Minutes*, January 19, 1887.

⁶⁷ETVG, *Board of Directors Minutes*.

⁶⁸Chamberlain to McGhee, October 25, 1887.

McGhee did everything in his power to make Roane Iron's steel venture at Chattanooga a success, including providing business from the railroads with which he was involved. The ETV&G ordered steel rails from Roane Iron at McGhee's behest, as did the Memphis & Charleston Railroad, of which McGhee was president.⁶⁹ Roane Iron supplied these Southern railroads during 1887 and 1888, but repeatedly ran into problems with the quality of rails made at the Chattanooga mill. In February of 1888, the ETV&G rejected a shipment of steel rails from Roane Iron, because of imperfections.

The unreliable quality of rails produced at Chattanooga caused the demise of Roane Iron's steel operation. The company was operating on such a thin margin that any temporary work stoppage was enough to prevent the payment of monthly bills. When the ETV&G suspended rail purchases, the company's major buyer was gone, and the mill had to be shut down. Although McGhee intervened for Roane Iron with the ETV&G in this case, the incident is indicative of the problems the company had with the quality of its steel rails.

Eventually, Roane Iron's damaged reputation among the railroads and lower steel rail market prices dictated an end to steel production at Chattanooga. The company was operating at a loss during 1888 and 1889, and the board of directors recognized that the Chattanooga mills was the reason. A decision was made to attempt to sell the

⁶⁹MacArthur, Jr., "Charles McClung McGhee," 201-204.

Chattanooga plant, and in late 1889 a group of buyers representing the Southern Iron Company became interested in the property. The sale of the mill was accomplished in October of 1889, for a price of \$250,000.⁷⁰ Thus, the Roane Iron Company's attempt at finished steel production in the South was at an end, and the company retreated to the less risky production of pig iron at Rockwood.

The Roane Iron Company from 1867 to 1889 was an innovative industrial enterprise, but with problems arising related to capital availability. Roane Iron's record as an industrial innovator during this period was impressive: it was the first iron manufacturer to use coke in the production of pig iron in the South (1868); the first company to produce steel of any type in the South at Chattanooga (1878); and the earliest enterprise to successfully manufacture Bessemer steel in the South (1887). The company, however, was in a constant struggle to obtain the capital to continue development and achieve its objectives. In this respect, it was representative of proprietary-competitive industrial enterprises that had closed ownership structures, and, consequently, limited access to capital. Throughout this period in the company's history, repeated attempts were made to obtain larger amounts of money for various purposes, mostly through the offering of new issues of stock to a small existing group of stockholders. For a while, this method worked and Roane

⁷⁰RIC, *Board of Directors Minutes*, October 16, 1889.

Iron managed to operate and innovate on a razor-thin margin. When the company decided to undertake the Bessemer venture, however, a new strategy had to be employed. Existing stockholders did not have the resources to cover a new stock issue of that amount, and they were not about to relinquish control of the company. This is when Roane Iron enlisted the help of Charles McGhee, and initiated its dealings with the Central Trust Company of New York. Throughout Roane Iron's growth and experimentation, its production facility and community at Rockwood remained constants, and were influenced by the company's shortage of capital.

Industrial Capital and Place Formation:
Rockwood as Roane Iron's Company Town

The Roane Iron Company's furnaces, and the settlement of Rockwood, were initially developed in an isolated and sparsely settled section of East Tennessee. The towns of Kingston and Loudon were more than 20 miles to the east, and the terrain in the western part of Roane County was rough and constraining. The location was secluded as well, as no railroads or even decent wagon roads passed through the area. Deposits of coal, iron ore, and limestone were abundant at and around the site, however, and the logic of transportation costs and industrial location guided Roane Iron's industrial development scheme.

The Roane Iron Company's actions with respect to the early development of Rockwood provide insight into its motives for community formation. The company did not sell any residential land in Rockwood, but rather rented housing to workers that needed it.⁷¹ In the beginning, worker housing was built as close as possible to the furnaces, to minimize the distance employees would have to travel to work. Some of the earliest housing built by Roane Iron was a group of one room huts, known as "Welsh Row" located adjacent to the furnaces.⁷² During this early period the Roane Iron Company spent a significant amount of capital on the construction of housing, as indicated by an 1870 company inventory (Table 2.1).⁷³ The company's housing policy suggests that it wanted to provide housing for its workers while maintaining control of land ownership. The return that the company expected on the housing was reliable labor in the mines and at the iron production facility, and rent payments which could be drawn directly from employee wages.

Rental agreements included clauses forbidding the sale of dry goods. This tied in with another of the company's profit strategies, monopoly control of the sale of consumer

⁷¹United States Congress, Senate, Committee on Education and Labor, *Report upon the Relations Between Labor and Capital*, 48th Congress, 1st Session, November 11-28, 1883, 5 Volumes, Volume IV, 129. Report upon the Relations Between Labor and Capital will hereafter be cited as Report upon Labor and Capital. Hiram S. Chamberlain, president of the Roane Iron Company in 1883, testified and was cited in this report.

⁷²Rockwood *Times*, December 18, 1924.

⁷³RIC, *Board of Directors Minutes*, June, 2, 1869, May 20, 1870.

Table 2.1.
Inventory of the Roane Iron Company, May 20, 1870

Item	Capital Expended
Real Estate	\$74,874.75
Houses	\$52,198.50
Engines & Cars	\$37,375.00
Mines	\$13,670.00
Furnace	\$61,845.00
Machine Shop	\$2,289.41
Blacksmith Shop	\$834.44
Foundry & Patterns	\$1,541.05
Furnace Shop	\$225.60
Sundries	\$113,118.19
Do Supplies	\$29,719.70
Accounts	\$32,835.23
Total Assets	\$428,702.86

Source: Roane Iron Company, *Board of Directors Minutes*, May 20, 1870.

goods at the company store. One of the earliest actions of the company was the founding of the company store in 1868, and the authorization of funds to stock it with goods.⁷⁴ No other stores existed in the settlement during the company's first decade of operation. Thus, during the town's early years, the company effectively controlled employee trade through its restrictive covenants and the establishment of the company store.

The Roane Iron Company did not develop a plan for Rockwood during its early period of operation. The company built housing based on immediate worker needs. When the iron operation increased its production, more employee housing was needed, and the company constructed more homes to be rented. Eventually, as construction continued this resulted in a block morphology around the furnace area, (Figure 2.2).

The production facility at Rockwood was typical of coke-burning blast furnace operations of the era (Figure 2.3). The facility site was located as far north as possible, abutting formidable Walden's Ridge. Tipples⁷⁵ were located adjacent to Walden's Ridge at mine openings, in which coal was sorted and loaded into railroad cars. The coal was transported in the cars the short distance down the tracks to rows of beehive coke ovens where the Bituminous coal was made into coke (Figure 2.4). The coke

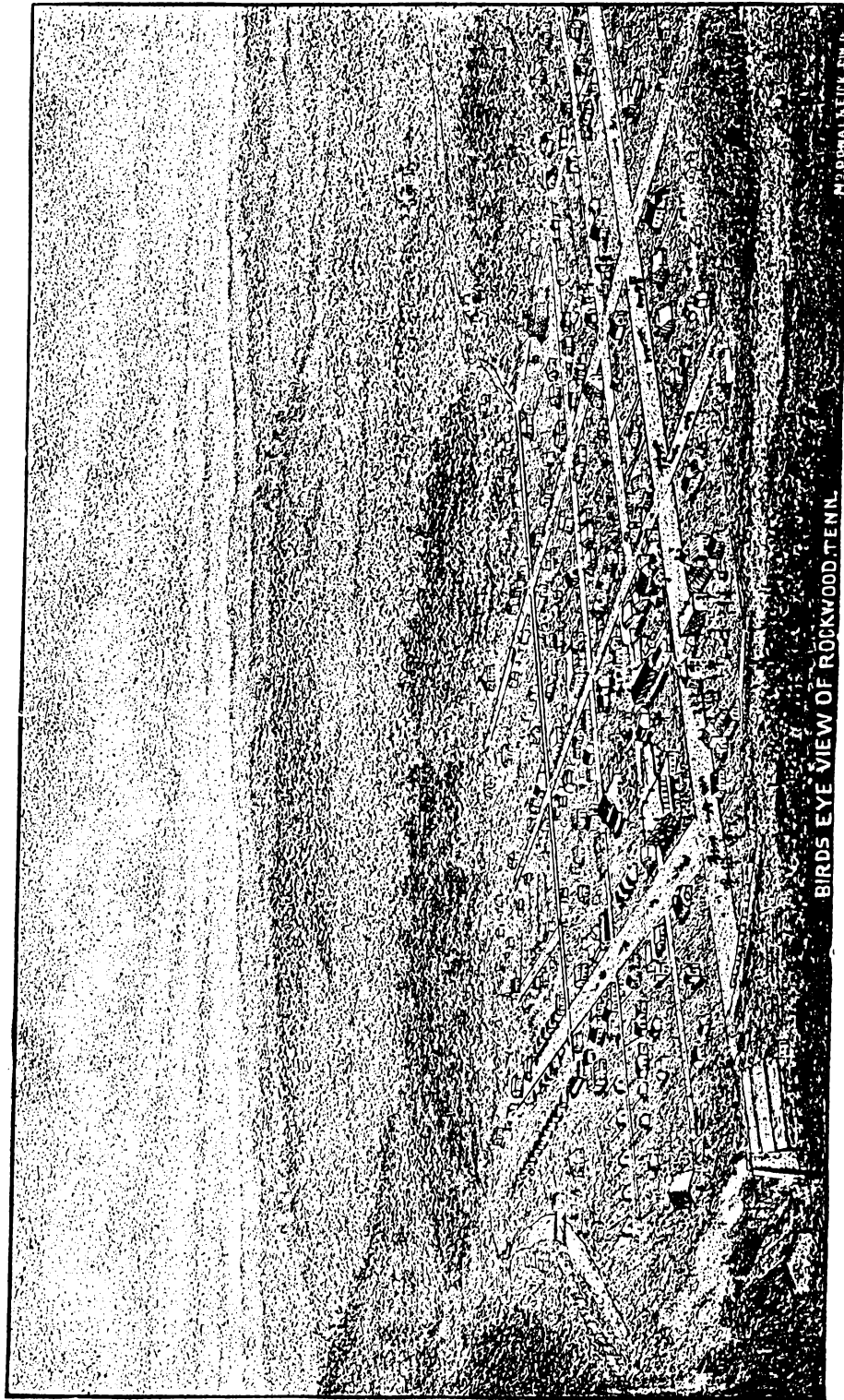
⁷⁴Ibid, December 18, 1868.

⁷⁵Structures at which coal was sorted and loaded into horse-drawn or railroad cars. Coal was sorted according to size in some instances, and excess rock was separated to be dumped in waste (culm) piles.

Figure 2.2.

Block Settlement Pattern in Rockwood, Tennessee
Circa 1890

Source: The Roane Iron Company, *Rockwood: The Pioneer Iron-Making Town in the South* (Cincinnati: McDonald & Eick Printers, 1890).



BIRDS EYE VIEW OF ROCKWOOD TUNN.

MEDWALKER S.W.D.

Figure 2.3.

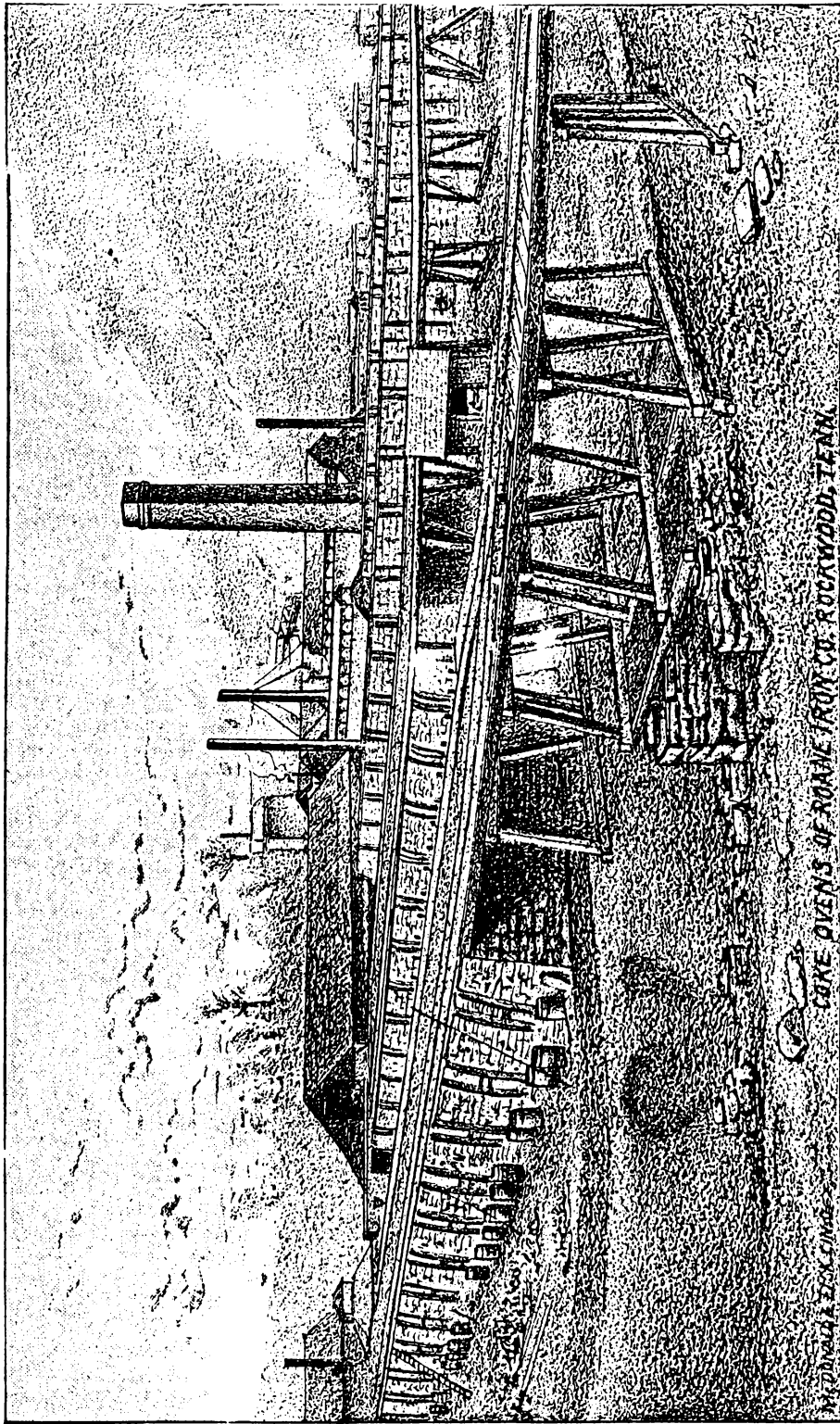
1893 Map of the Roane Iron Facility,
Rockwood, Tennessee

Source: Sanborn Map Company, *Sanborn Fire Insurance Maps*
Rockwood, Tennessee, 1893.

Figure 2.4.

Beehive Coke Ovens at Rockwood, Tennessee
Circa 1890

Source: The Roane Iron Company, *Rockwood: The Pioneer Iron-Making Town in the South* (Cincinnati: McDonald & Eick Printers, 1890).



CAST-IRON BRIDGE OF ROANE IRON CO. ROCKWOOD, TENN.

W. D. M. & S. C. S. 1886

was then used as fuel for the smelting of the iron ore, also obtained from the company's mines, in 65 foot high blast furnaces (Figure 2.5). Lime, which was needed as a flux to produce the desired chemical reaction, was also extracted and transported by rail from the company's kilns to the furnaces. The resulting product was pig iron, which was cast into ingots and stored in an adjacent yard until it could be transported to a buyer who would use it for the production of iron and steel implements.

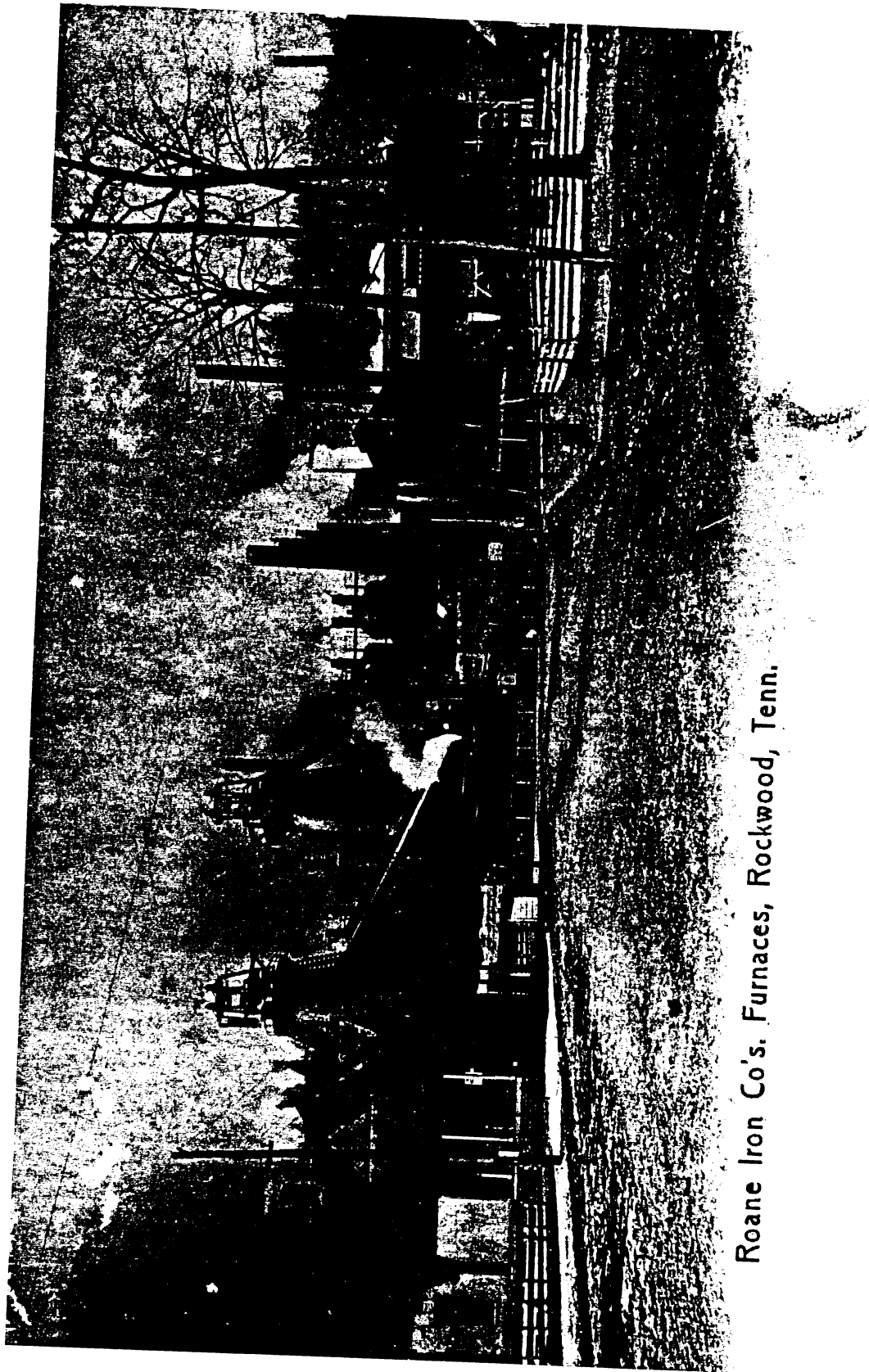
This production system was geared toward a division of labor, for which the Roane Iron Company attempted to procure a corresponding workforce at the isolated Rockwood production site. In large part the labor needed for manual work to be done around the coke ovens and blast furnaces was unskilled. Hiram Chamberlain expressed this during his 1883 testimony in front of the Senate Committee on Education and Labor, in which he described in general terms his assessment of the labor force required at Rockwood: "The labor employed there is of a cheaper class than that about rolling mills as a general thing, because there is more common labor employed directly about the furnace."⁷⁶ There were some functions that could only be performed by skilled labor at Rockwood, however, and Roane Iron had to attract skilled workers to the isolated production site to operate successfully in the early years. Pools of skilled, experienced iron-industry labor did not exist in the Upland

⁷⁶*Report upon Labor and Capital*, 129.

Figure 2.5.

The Roane Iron Company Blast Furnaces

Source: Roane County Heritage Commission Photograph
Collection, Kingston, Tennessee



Roane Iron Co's. Furnaces, Rockwood, Tenn.

South in the late 1860s, thus Chamberlain explained that "...directly after the war all skilled labor in our line was, of course, brought down from the North...it is true in this country, as in the North, that iron-workers as a class, are foreigners -- are not Americans. They are Englishmen, Welshmen, Irishmen, and other foreigners."⁷⁷

Federal Manuscript census data show Chamberlain's descriptions of labor requirements at Rockwood to be accurate. Over 54 percent of workers residing in Rockwood in 1870 were unskilled blue-collar workers, while slightly less than 27 percent were skilled blue-collar workers.⁷⁸ Only a small percentage of residents were involved in white-collar occupations, and most of those were related to the company operations (Table 2.2).

The majority of employed persons in Rockwood in 1870 were born in the United States, but ethnic groups performed different roles within the industrial division of labor (Table 2.3). The industrial occupations that required the most skill and experience (and which were the highest paying) were those in coal mining, and these jobs were dominated by workers from the British Isles. The coal seams within Walden's Ridge were vertically tilted, and

⁷⁷Ibid, 133.

⁷⁸This data was compiled from the 1870 U.S. Federal manuscript census data for Rockwood. The classification is based on a scheme developed by Olivier Zunz for his study of late nineteenth and early twentieth century Detroit. See Olivier Zunz, *The Changing Face of Inequality: Urbanization, Industrial Development, and Immigrants in Detroit, 1880-1920* (Chicago: The University of Chicago Press, 1982), 420-433 (Appendix 3).

Table 2.2.

Occupational Breakdown of Rockwood, Tennessee, 1870, 1880

Occupational Class	1870	1880
Unskilled Blue-Collar	54.4%	69.0%
Skilled Blue-Collar	26.9%	22.5%
Low White-Collar	16.6%	7.9%
High White-Collar	2.0%	.6%
Total Number Employed	193	316

Source: U.S. Department of Commerce, Bureau of the Census, *Ninth Census, 1870: Population Manuscripts; Tenth Census, 1880: Population Manuscripts*, Tennessee, Roane County.

Table 2.3.

Ethnic Breakdown of Selected Industrial Occupations,
1870, 1880

Population Group	Coal Mining		Ore Mining		Iron Furnace		Coke Ovens	
	1870	1880	1870	1880	1870	1880	1870	1880
Foreign-born	65.6	*	0.0	*	0.0	0.0	0.0	0.0
Native White	34.4	*	68.0	*	40.0	22.2	21.0	0.0
Native Black	0.0	*	31.8	*	60.0	77.8	78.9	100.0
Total Number Employed	32	*	22	*	17	27	19	5

* Coal and iron mining could not be distinguished in the 1880 census manuscript for Rockwood.

Source: U.S. Department of Commerce, Bureau of the Census, *Ninth Census, 1870: Population Manuscripts; Tenth Census, 1880: Population Manuscripts*, Tennessee, Roane County.

mining coal from them required a considerable level of expertise. In 1870, of 32 coal miners in Rockwood, over 65 percent were English, Scottish, or Welsh. The remaining minority were white, United States citizens from Tennessee, Kentucky, and Ohio. Of the 25 British Isle natives living in Rockwood with jobs in 1870, 21 (84 percent) were working as coal miners for the Roane Iron Company.

This pattern also extended to other representative industrial occupations. Jobs at the coke ovens, which involved long days of heavy labor working in high temperatures, were dominated by African-Americans. No foreigners worked at the coke ovens, and only a small minority of native whites were employed there (Table 2.3). Iron ore mining, considered to require less skill than coal mining because of the surface character of deposits, was also limited to certain groups. Native whites were the predominant group found in the iron mines, with a significantly smaller number of blacks involved in that occupation. Again, no foreigners had were employed in iron extraction.

Rockwood developed as a decidedly more ethnically-diverse settlement than Roane County as a whole. In 1870, over 14 percent of Rockwood residents were foreign born, as opposed to about one percent for the county as a whole (Table 2.4). In fact, 94 of the 148 foreign born residents

Table 2.4.

Ethnic Breakdown of Upper Tennessee River Valley Towns and
Roane County, 1870, 1880

Population Group	<u>Rockwood</u>		<u>Kingston</u>		<u>Loudon</u>		<u>Roane Co.</u>	
	1870	1880	1870	1880	1870 ^a	1880	1870	1880
Foreign-born	14.4	3.2	4.0	*	trace	*	1.1	0.9
Native White	59.6	65.5	66.0	*	75.0	*	83.1	84.8
Native Black	26.0	31.3	30.0	*	25.0	*	15.8	14.3

* No data available

^a Data for the Loudon Civil Division, of which the town of Loudon was part.

Source: U.S. Department of Commerce, Bureau of the Census, *Ninth Census, 1870: Population Manuscripts; Tenth Census, 1880: Population Manuscripts, Tennessee, Roane County; Compendium of the Ninth Census, 1870, 337; Compendium of the Tenth Census, 1880, 371.*

of the county lived in Rockwood at this time.⁷⁹ The Roane Iron Company made a concerted effort to attract desired foreign labor during its early period of operation; During the late 1860s and early 1870s General Wilder made several trips to England and Wales from which he brought back skilled workers.⁸⁰ The town also had a significantly larger proportion of black residents than other settlements in the county in 1870 (Table 2.4). This was also no happenstance. The company apparently preferred, and recruited, African-American workers for unskilled positions. Chamberlain explained Roane Iron's labor practices:

As far as unskilled labor is concerned, we always employed colored men. All the heavy work about the rolling mill was done by colored labor, and the same is true of the heavy work about the mines.... Around the furnaces, the great bulk of labor is colored labor, and it is almost entirely so about the blast furnaces. As far as our experience goes, we have found it to be a good, reliable character of labor. I think it is by far the best labor in the South -- I mean native to the South.⁸¹

By 1880, the settlement of Rockwood had existed for 12 years, and some significant changes had occurred both regionally and locally. Principal among these was the completion of the Cincinnati Southern Railway in 1879. The Cincinnati Southern stretched from Cincinnati, Ohio to Chattanooga, Tennessee and its route cut through Roane County and directly past Rockwood. The Roane Iron Company

⁷⁹U.S., Department of Congress, Bureau of the Census, *Ninth Census, 1870: Population Manuscripts*, Tennessee, Roane County; *Compendium of the Eleventh Census* (Government Printing Office, 1893), 507.

⁸⁰Nashville *Daily American*, May 15, 1875 cited in William H. Moore, "Rockwood: A Prototype of the New South," (Masters Thesis, University of Tennessee, Knoxville), 30.

⁸¹Report upon *Labor and Capital*, 133.

had invested large amounts of time and capital in trying to convince the Cincinnati Southern to construct this route, negotiating with the railroad since the early 1870s.⁸² The successful completion of the rail line shattered the isolation that had characterized Roane Iron's early operations in the Upper Tennessee River Valley. The company no longer had to operate according to wet and dry seasons and water levels on the Tennessee River. Building materials, supplies for the company store, and other items could be shipped in as readily as pig iron could be shipped out. The connection of Rockwood to the north-south rail line ended the community's initial pioneer phase, and linked it to more numerous potential customers and outside influences.

The work regime prevalent in the settlement changed little during 1870s. By 1880, the blast furnace operation itself was larger, with the addition of a second furnace in 1872. But the major differences evident over the decade were the proportional paucity of foreigners present in Rockwood, and the number of workers employed in skilled blue-collar occupations compared to 1870. By 1880, the

⁸²RIC, *Board of Directors Minutes*, July 10, 1872 and numerous others. The Cincinnati Southern was a municipal railroad financed and constructed by the City of Cincinnati. The major objective of the City in building the road was to establish a direct rail connection to southern markets, increasing its ability to compete with river cities such as Louisville, Kentucky. There was heated competition between the cities of Knoxville and Chattanooga to become the southern terminus of the Cincinnati Southern Railroad, in which the Roane Iron Company participated on behalf of the Chattanooga route. For an in depth discussion about the Cincinnati Southern Railway and route selection, see Biggs, *The Cincinnati Southern Railway: A Municipal Enterprise*."

proportion of foreigners had decreased to slightly over three percent of Rockwood's population. In skilled blue-collar occupations, they had been replaced to a large extent by native whites (Table 2.4). This was, more than likely, the result of the migration of the foreign-born to other mining and manufacturing areas, and the substitution of native whites that had acquired mining skills. The percentage of blacks living in Rockwood increased slightly over the decade, and they increasingly were the dominant labor source in the furnaces (Table 2.3, 2.4). The other employment pattern that was evident in 1880 Rockwood was the entrenchment of natives of Northern and Midwestern states such as Indiana, Ohio, and New York in the few white-collar jobs available in the town.⁸³ These white-collar workers were, more than likely, close associates or relatives of principals in the Roane Iron Company, most of whom came from these states.

The social landscape of Rockwood through 1880 seems to have been characterized by micro-scale segregation. White and black residents were most often clustered in groups by race. The dominant pattern was one in which blacks and whites lived on different streets or different blocks on the same streets. There were, however, instances of black and white men residing in the same boarding houses. In 1870, some clustering was evident among the foreign-born, but this pattern had diminished by 1880, with foreign

⁸³*Tenth Census, 1880: Population Manuscripts, Tennessee, Roane County.*

residences being almost totally intermixed with those of native whites. The 1880 census also shows the appearance of boardinghouses that housed workers involved in same-class or closely-related occupations. For example all residents might be skilled blue-collar workers or coal miners.⁸⁴

During the 1870s, the population of Rockwood grew with industrial production, and by 1880 the settlement was the largest in the Upper Tennessee River Valley (Table 2.5). In twelve years, Rockwood had grown into a larger urban place than Kingston or Loudon, settlements which had existed for more than half a century. The engine for this fast growth was industrial production, and its concomitant labor needs. Throughout the late 1860s and 1870s, the Roane Iron Company employed more than two-thirds of all working residents of Rockwood at occupations within its industrial complex.⁸⁵

A plan for the growing town was not filed with Roane County until 1887, 19 years after Roane Iron began operation (Figure 2.6). The plan shows the Roane Iron

⁸⁴*Ninth Census, 1870: Population Manuscripts; Tenth Census, 1880: Population Manuscripts.* Because the population manuscripts of Rockwood for 1870 and 1880 do not include street names or house numbers, it is impossible to accurately map the residential location of persons listed. Therefore, the only accurate spatial inferences that can be drawn from the manuscripts are relational ones.

⁸⁵This includes coal and iron miners, furnace workers, coke oven workers, and other occupations that could be linked to company operations. Unspecified laborers were also included, because there is an overwhelming probability that they worked for the Roane Iron Company in some capacity. Unspecified laborers were distinguished from farm laborers in both the 1870 and 1880 Census manuscripts, supporting this interpretation.

Table 2.5.

Population of Upper Tennessee River Valley Towns, 1860,
1870, and 1880

Town	1860	1870	1880
Rockwood	--	649	1,011
Kingston	307	739	858
Loudon	*	*	832

* No data available

Source: U.S. Department of Commerce, Bureau of the Census,
*Ninth Census, 1870: Population Manuscripts; Tenth
Census, 1880: Population Manuscripts, Tennessee,
Roane County; Compendium of the Ninth Census, 1870,
337; Compendium of the Tenth Census, 1880, 295;
Compendium of the Eleventh Census, 1890, 380.*

Figure 2.6.

The Roane Iron Company's Plan for the
Village of Rockwood, 1887

Source: Roane County Register of Deeds, Deed Book A-2, 233.

complex (including coal mines, coke ovens and furnaces) at the far northwest corner of the settlement. This was where coal could be most easily and efficiently extracted from Walden's Ridge. The company-built Rockwood and Tennessee River Railroad snaked through the town in a southeasterly direction from the production facility and connected the furnaces to the Cincinnati Southern main line. The plan for the rest of the settlement, which stretched out onto a flat valley site to the south and east of the furnaces, incorporated the block pattern which had been incrementally created during the construction of early company housing (Figure 2.2). Hence, by waiting to formalize Rockwood's community plan until 1887, the company did not impose a predetermined morphology on the landscape, but developed the community in fits and starts of housing construction related to the production process. The 1887 plan was simply an articulation of the early nucleated pattern that the Roane Iron Company had unintentionally created, at a time later in the company's history when it was more established and had become more interested in the regularization of space under its control.

Throughout the mid to late nineteenth century, the Roane Iron Company used paternalism as a means to attract and retain a labor force at the Rockwood production facility. The company assumed the responsibility of providing housing for a majority of the workforce, especially in the early years. Over the years it also

supported institutions that it felt were positive influences in the community, and that the labor force might desire. Roane Iron built a school house in Rockwood early on, and provided \$25 a month for the building's upkeep. Later, when a new school building was constructed, the company donated \$750 towards the project. A lot was also donated for a school for blacks in Rockwood.⁸⁶ A church was built with company funds soon after the furnaces opened, and was made available for non-sectarian services. On numerous occasions, Roane Iron donated lots in Rockwood to religious groups, so that they could build churches in the community. Social clubs such as the Masonic Lodge and the Independent Order of Odd Fellows were also supported by the company.⁸⁷

The limits to Roane Iron's generosity were apparent in some of its other policies, however. Until the late 1880s, the company prevented outside commercial establishments from doing business in Rockwood, preserving the monopoly of the company store. Restrictive covenants against commercial activities in lease agreements were the major avenue through which this was accomplished. When a resident made a specific request to remove this restriction from his deed agreement in 1883, the motion was voted down handily by the board of directors, maintaining the

⁸⁶RIC, *Board of Directors Minutes*, October 22, 1874, January 22, 1885, January 15, 1886, January 17, 1889.

⁸⁷*Ibid*, April 19, 1877, January 26, 1880, March 12, 1890, January 14, 1874, October 16, 1889.

monopoly.⁸⁸ Roane Iron also paid its employees in scrip⁸⁹ if they desired, a form of currency issued by the company through the company store. Once a worker's wages had been paid in scrip, it could not be converted back into U.S. currency, and had to be redeemed at the company store for merchandise. The scrip system was a way for the company to siphon much of its payroll back into its coffers, while at the same time making a profit on the merchandise sold. Because the company store was the only commercial enterprise in Rockwood, it was possible for workers to be caught up in the scrip system, receiving little cash take-home pay. The company also balked at paying for certain amenities which it felt were unnecessary. An example of one of these instances was when the board of directors voted against a motion by Hiram Chamberlain to build a reading room for employees at the furnaces.⁹⁰

⁸⁸Ibid, July 18, 1883.

⁸⁹Some industrial companies, including the Roane Iron Company, offered scrip as an alternative to scheduled salary payments of U.S. currency. Scrip could be drawn at any time by an employee, and was subtracted from one's regular paycheck. Instances have been documented in which scrip was the sole method of payment in company towns, but this was not the case in Rockwood.

⁹⁰Ibid, January 15, 1886.

Appraisal

The activities of the Roane Iron Company in the Upper Tennessee River Valley in the period between the close of the Civil War and 1890 were representative of proprietary-competitive industrial business methods. Although the company was incorporated from the outset, it was very closely held, and principal investors were involved in the management of production facilities. Until the late 1880s, the company depended on its small group of stockholders for expansion capital, operating with a closed ownership structure and limited capital availability. Roane Iron did make worthy attempts at technological innovation and vertical integration, but these many of these efforts were plagued by problems with production processes and raw materials as well as capital availability. When the company did finally look to an outside source for capital, it did not change its ownership structure to any degree, but gained access to large-scale loan capital through an associate of Hiram Chamberlain.

Roane Iron's development of Rockwood as a company community was influenced by its capital situation. In its early years, the company had barely enough money to get its iron production facility up and running in isolated western Roane County. The company provision of worker housing at this time was considered a necessity, and was built with little thought to planning or amenities. Over time, Roane

Iron repeatedly allocated its small amount of disposable capital to production processes and vertical integration, as opposed to the development of Rockwood. The company did what it felt had to be done to maintain a labor force at Rockwood, and not much more. Thus, it did not become very involved in trying to dictate the details of community development at Rockwood. This is reflected in the fact that Roane Iron did not draft a plan for its community until 19 years after its foundation. Because Roane Iron had neither the capital nor the inclination to rigidly plan and control the morphology and residential landscape of Rockwood from the outset, the patterns which emerged were largely a reflection of societal norms and the harried pace of industrial development. The result was a settlement segregated by class and race at the street and block scales, but in which no more pronounced segregation was planned by the company. This "hands-off" approach to company community formation would change in the Upper Tennessee Valley in the near future, with the operation of new types of companies and creation of urban places with new, distinct settlement patterns.

Chapter III

FINANCIAL AND ORGANIZATIONAL INNOVATION: LAND COMPANIES AND THE THIRD ROUND OF CAPITAL INVESTMENT

The National Capital Market Situation in the Late 1880s

The maturation of American capital markets had an enormous impact on the business environment in the United States in the 1880s. Eastern capital markets had developed as a result of American railroads' need for capital. The market for rail securities began during the railroad boom of the 1840s, when rail companies for the first time needed more capital for construction than could be obtained from farmers and merchants living along their rail lines. Those seeking funds for new lines in the late 1840s increasingly came to New York City, which had emerged as the national financial center because of its low interest rates on borrowed capital.¹ During the same period, Europeans also began to look for investment opportunities in the United States in lieu of those in politically unstable European countries. To meet the needs of American railroads seeking funds and Europeans seeking investment opportunities, a number of importing and exporting firms in New York began to specialize in handling railroad securities. Some of

¹Chandler, *The Visible Hand*, 91. According to Chandler, Philadelphia and Boston were the leading financial centers in the United States prior to New York during the first four decades of the nineteenth century. New York became the major national financial center after the late 1840s mainly because of a general capital shortfall among Boston lenders, which led to higher lending rates than were available in New York.

these firms eventually dealt almost entirely in railroad securities, and became the nation's first specialized investment banking firms. As agents for a railroad, they sold its securities for a fee or on commission, acted as a transfer agent in New York, and advised on financial matters. At the same time, these firms also became agents for larger European investors who were interested in purchasing American railroad stocks and bonds. This supply and demand cycle of railroad capital was the impetus for the growth of the New York City capital market (as well as secondary markets in Boston and Philadelphia) by the mid-1850s.²

Responding to the needs of railroad financing, the New York financial district had become one of the largest and most sophisticated capital markets in the world by the outset of the Civil War. The volume of business brought to the New York Stock Exchange by the buying and selling of railroad securities brought about trading and speculation in its modern form. Where hundreds of shares had been traded weekly in the 1830s, hundreds of thousands of shares were traded in the 1850s. The modern call loan market began in the 1850s, as New York banks began to lend speculators money on call in order to provide funds for the interest they were beginning to pay on their deposit accounts. Skillful railroad securities speculators such as

²Ibid.

Jay Gould made their first fortunes in the market, and became nationally-known figures.

The capital market spawned by railroad activity was thus fully developed and institutionalized by the late 1880s. The railroad industry had matured by this time, however, and its heavy demand for capital relative to investment funds available had begun to diminish. Until this time, the market had been used almost exclusively by railroads and allied enterprises such as telegraph, express, and sleeping car companies. These had been the only enterprises that operated at a large enough scale to require large amounts of outside capital. The relative paucity of railroad demand for capital beginning in the late 1880s did, for the first time, open the capital market to other potential users.³

The Regional Economic and Transportation Situation in the Late 1880s

By the late 1880s, transportation in the Upper Tennessee River Valley had improved markedly from the early post-war period. In 1887, *Goodspeed's History of Tennessee* reported that Roane County had "...transportation facilities (that) are the best of any county in East Tennessee."⁴ This was mainly because rail lines had been constructed in the region in the late 1870s and 1880s. The

³Navin and Sears, "The Rise of a Market for Industrial Securities," 107; Chandler, *The Visible Hand*, 92-93.

⁴*Goodspeed's History of Tennessee*, 821.

Cincinnati Southern Railway had been completed through western Roane County by 1880; and the East Tennessee, Virginia & Georgia Railway (ETV&G) also expanded into the region during the 1880s. The ETV&G first acquired a locally-owned, coal-extraction rail line (the Walden's Ridge Railroad) in the Spring of 1887. It then added trackage to the line, connecting it to the Cincinnati Southern Railway at Emory Gap and to the Knoxville & Ohio Railroad (already part of the ETV&G system) at Clinton. The major impetus of the ETV&G's rail development in the region was potential service to coal extraction areas, as its principals felt the Walden's Ridge line would have "...excellent connections to the coal fields of the Cumberland Mountains, and that the coal tonnage would justify acquiring it, and that the entire region is rich in iron ore, coal, limestone, and timber."⁵ The resulting network linked the Upper Tennessee River Valley to the national rail system, as well as the two largest urban markets in East Tennessee -- Chattanooga and Knoxville.

The 1880s were a period of economic expansion and increasing industrialization in the South. In part this was related to the upturn of the national economy in 1879, after the depression conditions of the 1870s. The subsidence of the depression once again brought about a positive investment environment and served to free Northern

⁵ETVG, *Board of Directors Minutes*, March 29, 1887, May 23, 1887.

and European capitalists seeking Southern outlets for investment. Woodward, in his seminal volume *Origins of the New South*, also attributes industrialization in the South during this period to an alteration of economic principles by a majority of Southern society, stating: "Undoubtedly the will, ambition, and even the cupidity of a class of Southerners had much to do with the speeding-up of Southern industrialization."⁶

In any case, evidence of the South's increasing reliance on the industrial sector was abundant in the 1880s. Southern cities were at the forefront of the industrial conversion. Several cities held large industrial expositions during the 1880s. Atlanta, Georgia held the International Cotton Exposition in 1881 and the Piedmont Exposition in 1887; Louisville, Kentucky hosted the Southern Exposition in 1885; and New Orleans, Louisiana administered 30 acres of exhibits at its Cotton Centennial Exposition of 1885. Each of these events touted the industrial development of the South, and was geared towards attracting outside capital and immigration. Production statistics in important industrial sectors such as iron-making also indicate Southern industrialization was on the rise. By the late 1880s, the South was producing more pig-iron than the entire nation before the Civil War. The capital invested in blast furnaces was also increasing at a

⁶Woodward, *Origins of the New South*, 113.

faster rate in the South as a whole than in any Northern state during this period.⁷

The combination of an institutionalized national capital market, a positive business environment in the South as a whole, and a vastly improved regional transportation system in the late 1880s created an attractive situation in the Upper Tennessee River Valley for potential investment. The Roane Iron Company had already proven that pig iron could be made successfully in the region under primitive conditions. Vast timber and mineral resources were known to be present in the area, but prior to the 1880s were relatively isolated from transportation systems and urban markets. By the late 1880s, the region was well connected into the national rail system, and new capitalists began to see industrial promise in its varied mineral deposits, rivers, and timber covered ridges.

The Arrival of Sophisticated Capitalism:
Land Companies in the Upper Tennessee River Valley

The capital that was funneled into the Upper Tennessee River Valley during the late 1880s and early 1890s came through the activities of land companies. Specifically, three land companies -- the East Tennessee Land Company, the Cardiff Iron & Coal Company, and the Lenoir City

⁷Ibid., 124-128; Victor S. Clark, *The History of Manufactures in the United States* (New York, 1929), 211-220.

Company -- coordinated the industrial development, mineral extraction, and community building that took place in the region during this period. These companies were different than the previous industrial entities that had operated in the region with respect to organizational structure, financial methods, and development strategy. They were among those business enterprises that took advantage of available capital in the securities market of the late 1880s, using it to purchase land and advance industrial development strategies in the Upper Tennessee River Valley. Their operation methods resulted in urban places that exhibited different morphologies than pre-existing settlements.

Each of the aforementioned land companies began operation in the Upper Tennessee River Valley in 1889 or 1890. The East Tennessee Land Company was the first of these, obtaining its charter from the State of Tennessee in April of 1889. The Cardiff Coal & Iron Company and the Lenoir City Company followed soon after, incorporating with the State in March and April of 1890, respectively.⁸ In general, these companies had similar methods of operation.

⁸*Corporation Records, State of Tennessee*, April 21, 1889, March 18, 1890, April 12, 1890.

The East Tennessee Land Company

The East Tennessee Land Company (ETLC) was formed by a group of notable capitalists from outside the immediate region. Frederick Gates, a New York native who moved to Chattanooga in the mid 1880s for health reasons was the driving force behind the formation of the company. Before his move to Chattanooga, Gates managed a large Diamond Match Company plant in Frankfort, New York. He also invested in real estate, and helped route the West Shore Railroad connecting New York City and Buffalo through Frankfort. While in New York, Gates had been a member of the Prohibition Party, and the party's candidate for New York Secretary of State in 1883.⁹ It was upon the tenets of Prohibition that the East Tennessee Land Company was founded.

While in Chattanooga, Gates initiated a plan to combine temperance and business in an industrial-urban development scheme in the Upper Tennessee River Valley. Gates sought out friends and associates to invest in the venture, and with them created the East Tennessee Land Company. All of the eventual principals in the company were staunch Prohibitionists, and most were prominent politicians and/or businessmen. Perhaps the best known of these was General Clinton B. Fisk, former commissioner of the Freedman's Bureau for Kentucky and Tennessee, the

⁹Walter T. Pulliam, *Harriman: The Town That Temperance Built* (Maryville, TN: Brazos Press, 1978), 19-23.

founder of Fisk University for freedmen in Nashville, Tennessee, and Prohibitionist candidate for President of the United States in 1888.¹⁰ Fisk, a native of New York, was appointed president of the East Tennessee Land Company because of his prominence in the Prohibition movement, and was successful in attracting capital to the company. Other inaugural officers and directors of the company included: Dr. I. K. Funk and Adam W. Wagnalls, president and vice president, respectively, of the New York City publishing firm Funk & Wagnalls Company;¹¹ Ferdinand Schumacher of Akron, Ohio, a pioneer in the manufacture of oatmeal and president of the F. Schumacher Milling Company (predecessor of the American Cereal Company (1891) which later became the Quaker Oats Company (1901));¹² John Hopewell, Jr. and Ernest M. Goodall, both members of prominent New England textile families and principals in the Sanford (Maine) Mills blanket manufacturing company; Walter C. Harriman, Jr., former United States Congressman from New Hampshire; William H. Russell, former attorney for the Louisville, New Albany & Chicago Railway and senior member of the Chattanooga law firm of Russell, Daniels and Garvin;¹³ and Alphonso A. Hopkins, former Prohibition Party candidate for Governor of New York (1882), and well-known author and

¹⁰*Dictionary of American Biography*, Vol. 6, (New York: Charles Scribner's Sons, 1931), 413-414.

¹¹*Dictionary of American Biography*, Vol. 7, 72-73; *The National Cyclopaedia of American Biography*, Vol. 23 (New York: James T. White and Company, 1925), 44.

¹²Pulliam, *Harriman*, 54; Chandler, *The Visible Hand*, 294.

¹³Pulliam, *Harriman*, 47-60.

biographer of Clinton B. Fisk (1888).¹⁴ The influence that this distinguished group of men had in political and business circles was useful in facilitating the East Tennessee Land Company's operations in the region.

The developmental strategy of the East Tennessee Land Company encompassed a wide range of activities within the region. In a bound, illustrated prospectus targeted at potential investors, the company explained:

The East Tennessee Land Company will not expend its energies and its working capital in general mining or manufacture, nor in any miscellaneous fashion distributed over such broad territory. It is what its name indicates, primarily a Land Company, and having acquired magnificent heritage in lands, its one purpose is to turn these, by systematic development, to the best advantage possible.¹⁵

In more specific terms, the ETLC articulated the development activities that it believed would yield the "best advantage." Under a heading "Plans and Policy of the Company," the following items were listed:

To sell 250,000 acres of farming land, reserving all mineral rights.

To do this by systematic colonization.

To establish a manufacturing city, at a strategic valley point.

To establish an upland town, as a health resort and an agricultural outlet.

To sell 3,000 acres of land in town and city lots.

To develop 250,000 acres of coal and iron deposits.

To do this largely through subordinate companies, organized under supervision of the parent Company, in which this Company shall hold controlling interest wherever control is essential to insure best results.

¹⁴Ibid., 50; *Dictionary of American Biography*, Vol. 7, 72-73.

¹⁵*Prospectus of the East Tennessee Land Company* (New York: The South Publishing Company, 1890), 23.

To secure from such interest in these companies, and from the royalties they will pay, a large and perpetual revenue.¹⁶

Thus, the role that the company envisioned for itself in the development process was as an overseeing body that would coordinate these wide-ranging activities.

A large amount of capital was needed. The company had a sophisticated financial structure for the time period, and was organized from the outset to be publicly-owned.¹⁷ When it was incorporated in April of 1889, the amount of the company's capital stock was specified at \$3,000,000. More than a half million dollars of its stock was subscribed before the organization of the company, indicating that this amount was probably bought by those that became its officers and directors. The ETLC planned on obtaining the rest of its stock capitalization from outsiders, and published its prospectus in 1890 to woo investors. Much space was devoted to convincing potential investors that the company's development scheme in the Upper Tennessee River Valley was a sound investment:

Whoever has carefully read and fully comprehended the pages preceding, must perceive how small is a capitalization of \$3,000,000 on such a basis as has been described, compared with the capital of every other company of this kind. The capital stock of this Company represents actual value, without inflation, but does not approximate the entire values of the properties on which it is based. It was the intention of the projectors and

¹⁶Ibid.

¹⁷Navin and Sears point out that some of the largest manufacturing concerns of the 1880s were either family owned or incorporated and closely held. Examples include the Singer Manufacturing Company, Carnegie Steel Company, and the McCormick Harvesting Machine Company. Although land companies were not industrials, they apparently were among the first American non-railroad companies to embrace the public ownership structure. See Navin and Sears, "The Rise of a Market for Industrial Securities," 109-110.

incorporators to shape this enterprise so that its stock should be as solid as that of a national bank.¹⁸

On the last page of the prospectus, potential stock purchasers were directed to inquire at the company's New York City headquarters, located in the Times Building.

The company was also sophisticated with respect to its organizational structure and profit-making strategy. The organization of the ETLC was one of compartmentalized, with different development activities assigned to subsidiary companies. Casting itself in the role of parent company, the ETLC described its plan to use subsidiaries:

...(the company) has organized, and will organize, other companies, with abundant capital drawn from its own individual membership and from investors outside, and to these subordinate companies it will transfer by lease the timber upon its lands, or the excess thereof beyond the need of settlers, and the minerals under them, devoting itself chiefly to surface development and improvement.¹⁹

The three subsidiary companies that the ETLC established in its first year were the East Tennessee Mining Company, the Harriman Coal and Iron Railroad, and the Harriman Manufacturing Company. The East Tennessee Mining Company leased all the coal and iron properties owned by the ETLC, and administered all coal and iron ore extraction operations on company lands. The Harriman Coal & Iron Railroad Company's function was to build rail lines over company lands, including a belt line around a proposed town site and branch lines into iron and coal extraction areas. The Harriman Manufacturing Company was to attract industry

¹⁸*Prospectus of the East Tennessee Land Company*, 44.

¹⁹*Ibid.*, 23.

to the ETLC's land holdings by providing from one-third to one-half of the start-up capital for desired firms, in exchange for significant stock holdings in them (Figure 3.1).²⁰ This profit strategy was advanced for the era. The acquisition of common and preferred stock in the ETLC's subsidiary companies, and in manufacturing concerns that received start-up capital from the Harriman Manufacturing Company was a major profit tactic. The ETLC explained this strategy to potential investors:

The Manufacturing Company will thus hold a large interest, as it does already, in many substantial factories at Harriman, and through proper officers will exercise careful supervision over these, making sure they are conducted to the best possible advantage, and that all means within the power of the Harriman Manufacturing Company and the East Tennessee Land Company are used to promote their welfare and assure a wide market for their products.

This plan, it is believed, will carry to the utmost point yet attained, the spirit and method of co-operation among manufacturing establishments of different character, so that all shall work as one concern for their own interest, the interest of the town, and the consequent greater success of the parent company.... It follows that the stock to be held in each, by the Harriman Manufacturing Company, must be a profitable source of income to that Company, and must make its own stock return handsome dividends and increase handsomely in value. This is more certain because the stock which the Harriman Company will hold in many subordinate companies will be preferred stock, with six per cent dividend fairly assured upon it, by such preference from the start.²¹

The organizational structure that the ETLC set up delegated many development responsibilities to subsidiaries, but ultimately insured that revenues would return to it through common and preferred stock dividends.

The properties alluded to in the ETLC's prospectus were obtained during the first months after its

²⁰*Two Years of Harriman, Tennessee* (New York: The South Publishing Company, 1892), 44-52.

²¹*Ibid.*, 64-69.

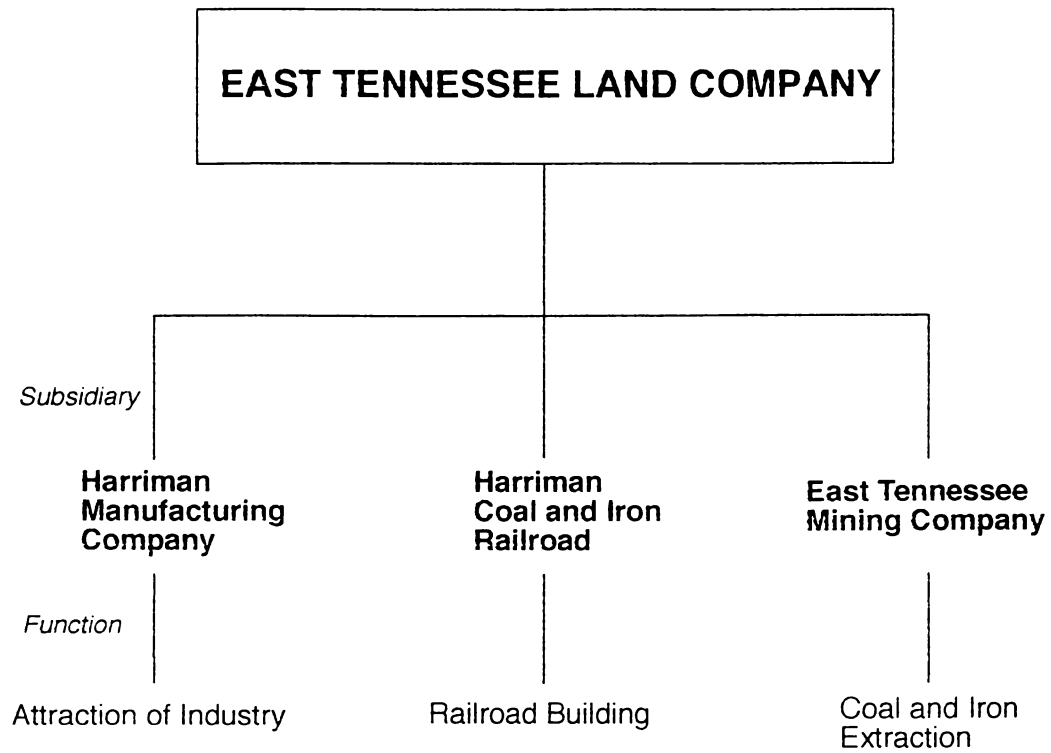


Figure 3.1. East Tennessee Land Company
Organizational Structure

incorporation in 1889. By March of 1890, less than a year after its incorporation, the company had purchased 268,124 acres of land in the Upper Tennessee River Valley for \$2,095,879.30.²² The company got some of this money from stock sales, but also some from the national bond market. In late 1889 or early 1890, the ETLC negotiated a \$1,000,000 bond issue with the Central Trust Company of New York,²³ which had administered trust conversions for the cottonseed oil (1884) and sugar (1887) industries, as well as bond issues for several American railroad companies.²⁴ The bond issue allowed the ETLC to acquire large tracts of regional land, and to put its plan into operation.

The ETLC characterized its development plan as multifaceted, its emphases were resource extraction, industrial development, and community building. The company expressed its belief in the relationship between the location of raw materials, industrial production and urbanization:

The selling of city lots, where growth is rapid and where great industries congregate, is more productive of wealth than a gold mine. A dozen lusty young cities in the South might be named in proof of this, and these have but anticipated the great current of immigration from the North now fairly setting in...Locate your town where railroads are, or are bound to be, and where minerals are abundant close at hand, and you may build as many as you please during the next decade without overdoing it. "The South is going to make the iron of this country for the next fifty

²²*Prospectus of the East Tennessee Land Company*, 43.

²³*Harriman Daily Advance*, January 30, 1893, January 31, 1893, February 14, 1893.

²⁴Navin and Sears, "The Rise of a Market for Industrial Securities," 119; Chandler, *The Visible Hand*, 319-328; ETVG, *Board of Directors Minutes*, June 30, 1886, May 23, 1887. In the creation of a trust, a number of companies in a particular industry turned their stock certificates over to a board of trustees, receiving in turn trust certificates of equivalent value. Reasons for trust conversion in an industry usually were related to limiting competition and price fluctuations.

years." So declared recently an iron manufacturer of the North. So believe the most sagacious men who have studied the iron problem North and South. Grant that they are right, and the wisdom of prudent town-building is granted as well. For iron will be made where it can be made cheapest; it can be made cheapest where iron-plants have place in close proximity to the iron mines, and where coal supplies exist in the same neighborhood. To establish furnaces, coke ovens and iron-works, and to open coal beds at any given point, is to create a town... Considerations like these determined the East Tennessee Land Company to establish the CITY OF HARRIMAN.²⁵

The City of Harriman was to be the centerpiece of the ETLC's industrial development scheme in the Upper Tennessee River Valley. If the ETLC felt that community building in association with industrialization was a logical progression, it also recognized that the endeavor could be lucrative:

...while so large a proportion of the East Tennessee Land Company's territory can be sold for agricultural purposes, and at handsome profit... the Company expects to reap its chief gains, after those realized from coal and iron interests, from its work of town building.²⁶

The location chosen by the ETLC for its industrial-temperance city was at Big Emory Gap, where the Emory River had eroded a narrow valley through Walden's Ridge. This site was approximately 80 miles northeast of Chattanooga via the Cincinnati Southern Railway, and 50 miles west of Knoxville via the Walden's Ridge division of the East Tennessee, Virginia & Georgia Railway (Figure 3.2). The town was named Harriman, in honor of Colonel Walter C. Harriman, a Union officer who had operated in the area during the Civil War and father of ETLC director Walter Harriman, Jr. The original city site was on a large oxbow

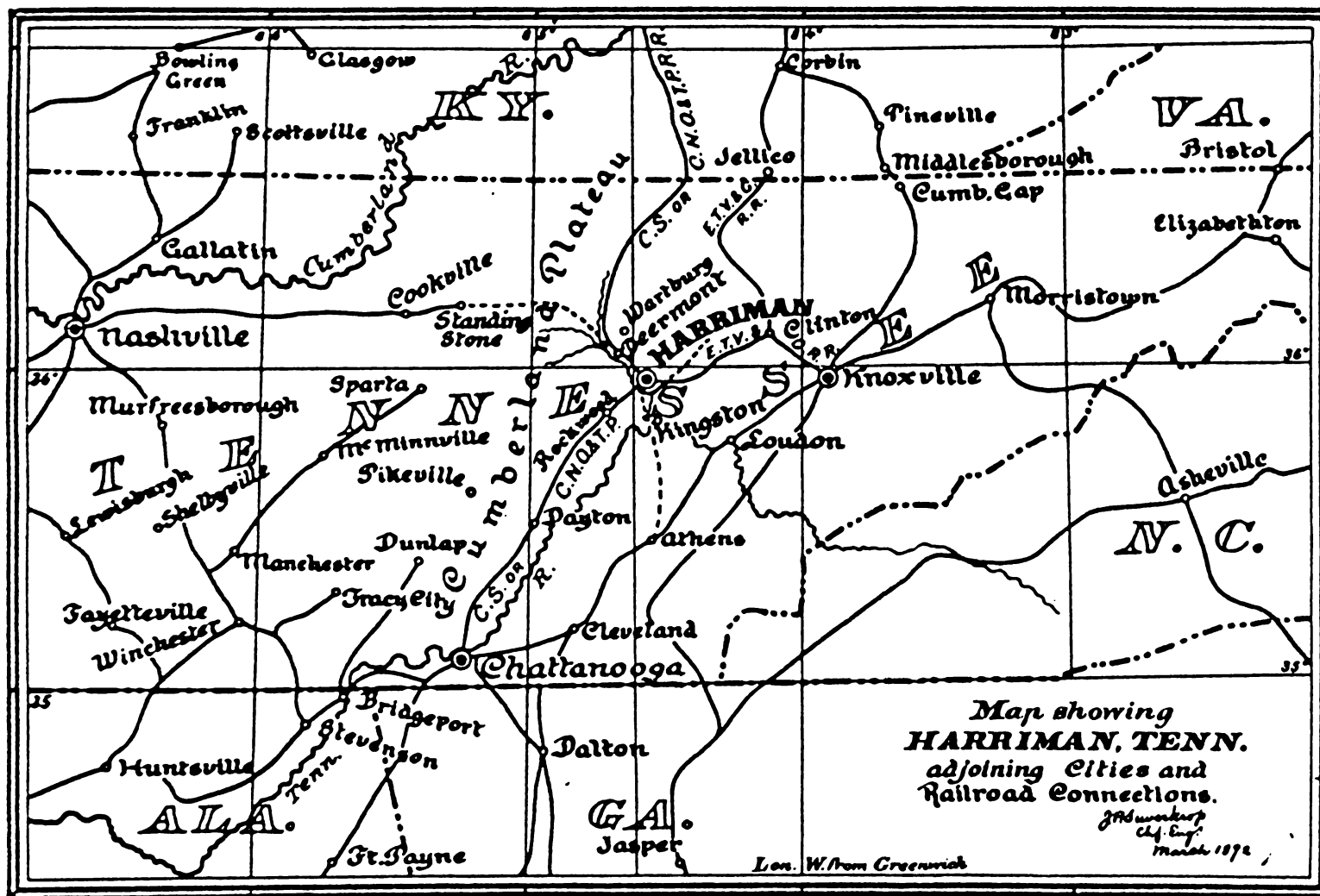
²⁵*Prospectus of the East Tennessee Land Company*, 25-26.

²⁶*Ibid.*, 25.

Figure 3.2.

Map Showing Harriman, Tennessee, Adjoining Cities
and Railroad Connections

Source: G.M. Connelly, *City Directory of Harriman,
Tennessee* (Chattanooga: Times Printing Co, 1890).



in the Emory River, with the Cincinnati Southern Railway directly to the west and the East Tennessee, Virginia & Georgia Railway to the north (Figure 3.3). A location chosen, the ETLC "staked out" a portion of the site on Christmas Day, 1889, and commissioned a plat for Harriman.²⁷ From this point forward, Harriman became the focus of the ETLC's development strategy in the region.

The Cardiff Coal and Iron Company

The Cardiff Coal & Iron Company (CCIC) was also an enterprise conceived by Northern capitalists. The company's origin was rooted in an exploratory expedition taken by W.P. Rice and some of his associates to the Upper Tennessee River Valley in the Spring of 1889. Rice was a native of Maine who had been an executive with several financial institutions in Kansas City, Missouri during the 1880s, and who also had presided over the establishment of the new industrial city of Fort Payne, Alabama in late 1888.²⁸ Apparently Rice and his group were impressed with the area, for in the next six months they commissioned an agent to buy land in the region, and, by March of 1890, the Cardiff Coal & Iron Company had been incorporated.

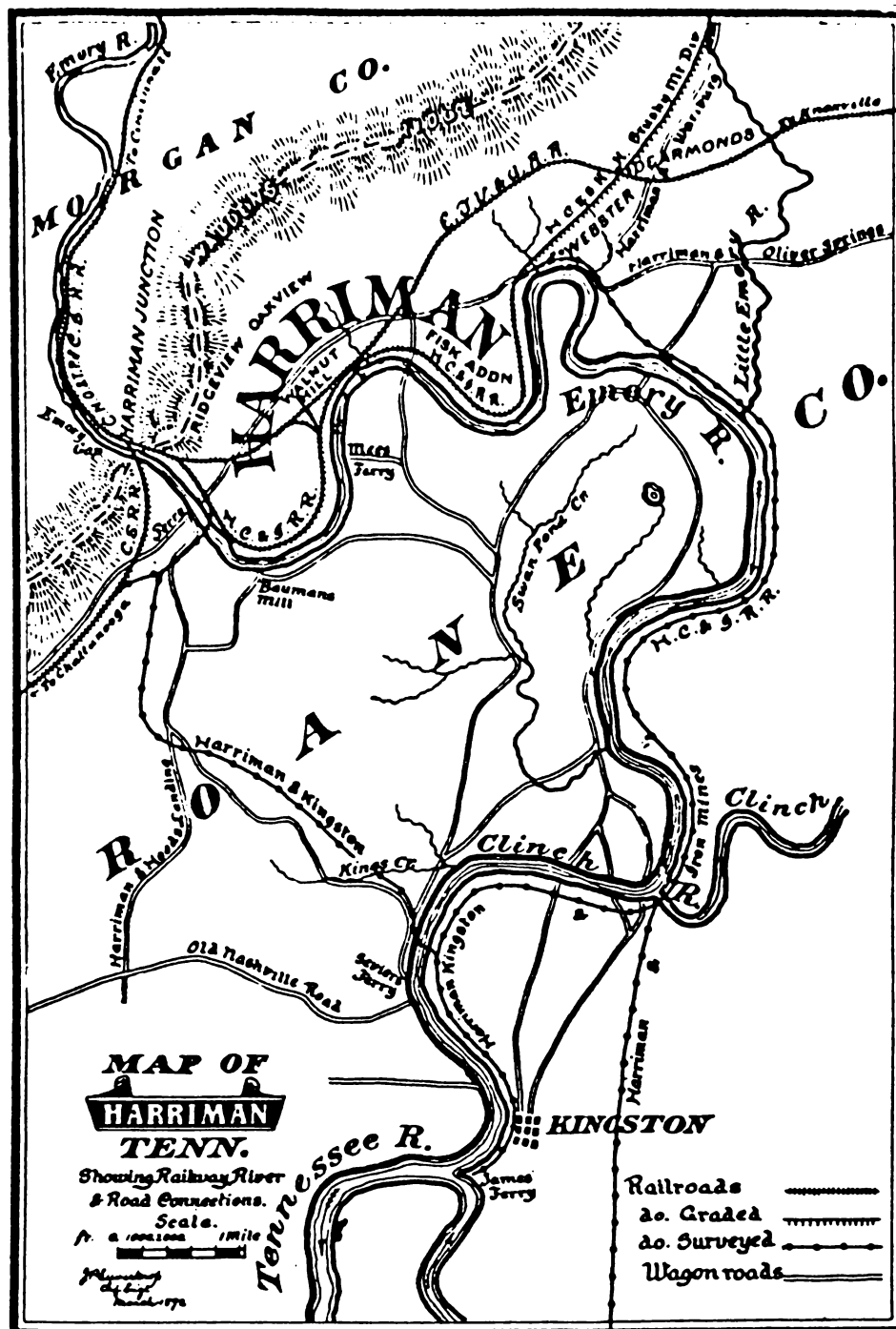
²⁷*Two Years of Harriman*, 11-12.

²⁸*The Cardiff Herald*, April 23, 1890, May 7, 1890; W.P. Rice to J.F. Randolph, December 20, 1890, Cardiff Coal & Iron Company Papers, Roane County Heritage Commission, Kingston, TN. Rice was the president of the Fort Payne Coal and Iron Company during the late 1880s and early 1890s.

Figure 3.3.

Local Map of Harriman City Site

Source: G.M. Connelly, *City Directory of Harriman, Tennessee* (Chattanooga: Times Printing Co, 1890).



In large part, the group of investors that became principals in the Cardiff Coal & Iron Company were from Rice's native New England. The initial president of the company was B.B. Smalley of Burlington, Vermont, president of the Ogdensburg and Lake Champlain Railroad, vice president of the Burlington Trust Company, and former secretary of the National Democratic Committee. Other officers and directors from the New England region were: General Joshua L. Chamberlain, former four-term Governor of Maine and president of Boudoin College (Brunswick, Maine); Charles L. James, head of the Boston lumber firm James & Abbott, as well as partner in the finance banking firm of Cordley & Company; Samuel Pingree of Hartford, Vermont, former Governor of Vermont and member of the state legislature, as well as Chairman of the Vermont Board of Railroad Commissioners; John M. Whipple of Claremont, New Hampshire, a member of the New Hampshire legislature; Carlos Heard, a partner in the Biddeford, Maine hardware firm of McKenney & Heard; and Henry C. Young, a junior partner in the Boston finance banking firm of Cordley & Company.²⁹ Some members of the inaugural board of directors were businessmen from East Tennessee, such as J.F. Tarwater, T.G. Montague, and Robert Pritchard. Each of these men was a regional business leader: Tarwater was head of the Rockwood iron-mining firm of Tarwater & Brown

²⁹*The Town of Cardiff, and Lands and Mines of the Cardiff Coal and Iron Company* (Cardiff Coal & Iron Company, 1890), unattached insert; *The Cardiff Herald*, April 23, 1890.

and a director of the Roane Iron Company; Montague was president of the First National Bank of Chattanooga; and Pritchard was the head of the Chattanooga law firm of Pritchard, Sizer, and Moore.³⁰ This combination of regional and national capitalists as administrators was used by the company as a selling point when the time came to cultivate investors.

From the outset, the Cardiff Coal & Iron Company's development program in the region was focused on industrialization. The company's view of the worth of its land holdings in the Upper Tennessee River Valley was linked to resources and their utilization in production processes:

The Allegheny Belt is full of coal and iron and limestone fluxes, and possesses other useful mineral resources in great abundance, with vast supplies of timber. It contains places where many manufactures (and the iron manufacture in particular, by reason of the richness of the ores and the facility of charcoal and coking coal) can be carried on to more advantage than anyplace else in the world...

With these preliminary considerations, (the Cardiff Coal and Iron Company) has selected a town site adjoining some of the richest mineral deposits in the great Allegheny Belt, two hundred miles nearer than Birmingham to Northern and Western markets, with the advantage of the good-will and hearty cooperation of the resident and neighboring population, combined with the experience of successful managers of similar enterprises in the South, as the guarantee for its steady development into a flourishing centre of industry.³¹

The CCIC planned to administer most aspects of development on its land, including mineral extraction, the construction and management of some industrial facilities, and the development of a new city. That the company advertised its

³⁰Ibid.

³¹*The Town of Cardiff*, 4-5.

intention to use this approach is suggested in an early addition of *The Cardiff Herald*, the local newspaper:

The Cardiff Coal & Iron Co., officered by men of national reputation, men whose good name is above reproach, has pledged itself to expend a vast amount in the development of our fair city.

One million and two hundred thousand dollars in cash to be put into iron furnaces, coking ovens, rolling mills, rolling mills, planing mills, churches, store houses, water supplies, ice manufactories, etc., etc., ad infinitum.³²

The CCIC's comprehensive development strategy required concomitant capital, which the company obtained through two avenues. The first was a public ownership structure. When it was incorporated in March of 1890, the company declared its capitalization at \$5,000,000, consisting of 50,000 shares at a par value of \$100 each. A prospectus, published to advertise CCIC stock to investors, emphasized the company's advantages over other similar enterprises. Under the heading "Personal and Financial Strength of the Company," the company suggested why it would succeed where others had failed:

Unlike many of the corporations organized for Southern development, a number of the corporators of the Cardiff Iron and Coal Company consist of respected, wealthy and influential citizens of the neighborhood where the property is located, which is a local guarantee of the solidarity and success of the corporation, and of the friendship of the people and government of the State of Tennessee, that claims respectful attention. With them are associated representatives of capital and labor of other States, and men of approved experience in kindred enterprises; the whole making an aggregate of wise counsel, executive ability, and monetary strength such as has been seldom combined. Too many of the attempts at development in the South have been prosecuted by promoters without sufficient resources to counterbalance the mistakes inevitable from the lack of experience and absence of local associations. From the present undertaking, every such source of weakness is eliminated.³³

³²*The Cardiff Herald*, April 30, 1890.

³³*The Town of Cardiff*, 11-12.

The second avenue through which the CCIC derived its initial "monetary strength" was from its association with the Boston banking firm of Cordley & Company. Two of the members of the company's board of directors -- Charles James and Henry Young -- were partners in the banking firm, and it is probable that capital for early land purchases came from it in association with the American Loan & Trust Company of Boston.³⁴ In fact, Cordley & Company was very much involved in land acquisition in the Upper Tennessee River Valley, sending an agent to the region several months before the incorporation of the CCIC.

Most of the property eventually acquired by the CCIC was actually purchased by Henry Young, the agent acting on behalf of Cordley & Company. Young went to Roane County in early 1890, and soon after began to survey land and investigate titles in anticipation of purchasing several large tracts. According to a resident of Rockwood, who eventually purchased land from the CCIC:

...Young represented himself as being a member of the banking house of Cordley & Co., of Boston, Mass., and that his said firm, in whose behalf he claimed to be acting, as well as upon his own account, was possessed of large means and practically unlimited credit, and that there was associated with him and them in said scheme and enterprise a syndicate of gentlemen of unlimited means and national repute, who would give to said enterprise all requisite attention and afford to it all requisite capital to carry to a full consummation all the plans and schemes of industry, enterprise and development...³⁵

³⁴*The Cardiff Herald*, April 23, 1890.

³⁵*Haley & Ingram vs. Henry C. Young* (No Date), Complainant Report, Cardiff Coal & Iron Company Papers, Roane County Heritage Commission, Kingston, TN., 1-2.

By April of 1890, 50,000 acres of land in the Upper Tennessee River Valley had been purchased by Young acting for Cordley & Company and the CCIC. During that same month, the CCIC assumed ownership of the land, issuing Young stock in exchange. Thus, the Cardiff Coal & Iron Company's initial land holdings in the region were accomplished almost entirely through the activities of Northern financiers.

As with the East Tennessee Land Company, the focus of the CCIC's industrial complex was to be a planned urban settlement. The location selected for the city was on the Cincinnati Southern line, five miles north of Rockwood and approximately the same distance southwest of the new town of Harriman (Figure 3.4, 3.5). The town was named Cardiff, in hopeful anticipation that the settlement would emulate the bustling coal mining town of Cardiff, Wales. The city site encompassed 2,000 acres between Walden's Ridge on the northwest and a range of lesser ridges on the southeast. The CCIC explained the proposed city's advantageous location in relation to transportation and urban markets:

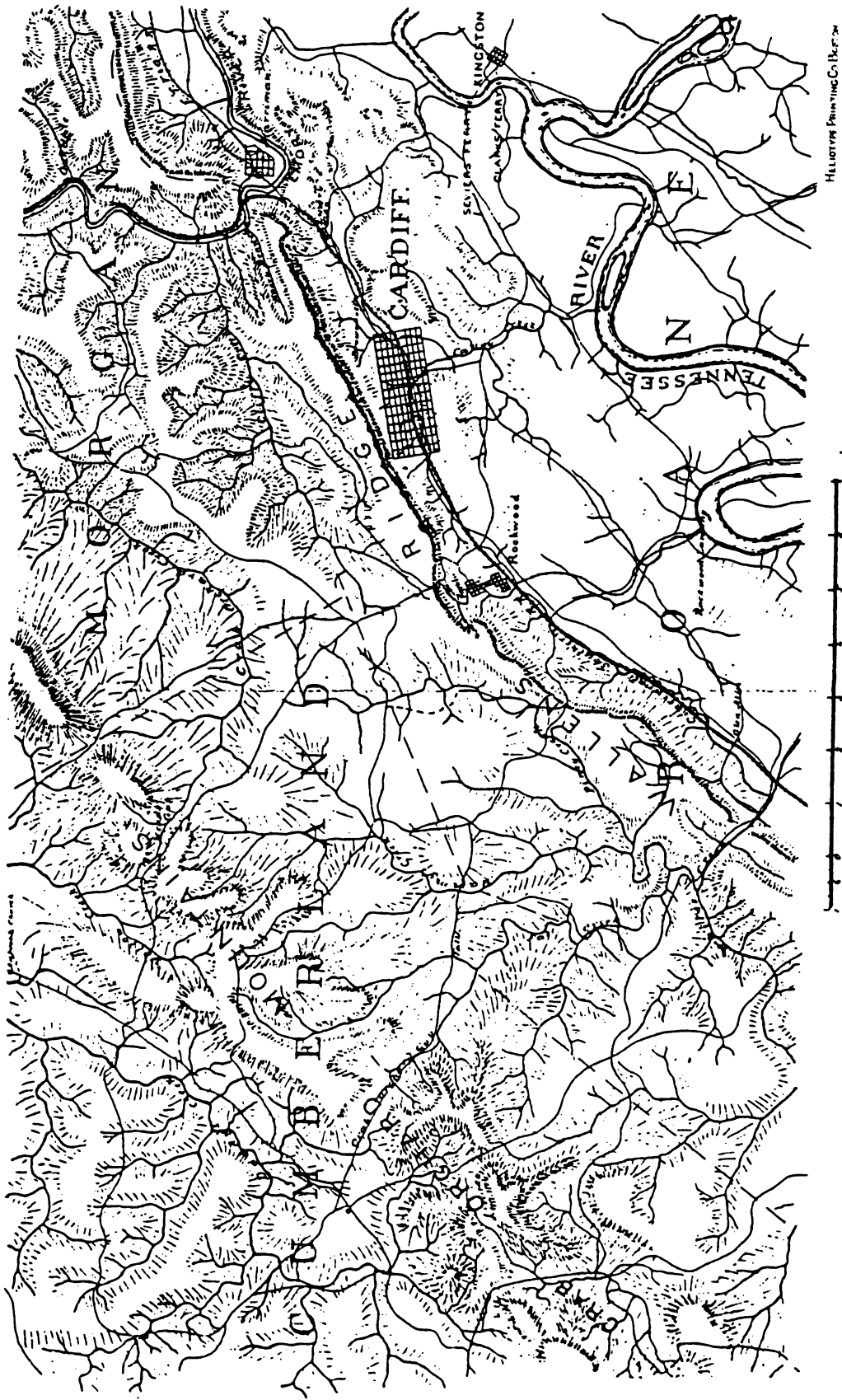
...the company's possessions comprise lands not taken at hazard, but carefully chosen for their natural wealth and adjoining them the town site (chosen with equal care) at the foot of Walden's Ridge, in the fertile Tennessee Valley, traversed north and south by the Cincinnati Southern Railroad (the main highway of travel and transportation between Cincinnati and Louisville, the great cities of the Ohio Valley, and Chattanooga and Birmingham, the great cities of the mineral belt), and so situated in relation to the mountain gaps eastward, and also to those westward... that it is sure to command the lateral lines of railroad communication which are multiplying in Northeastern Tennessee.³⁶

³⁶*The Town of Cardiff*, 8.

Figure 3.4.

Map of Cardiff Coal & Iron Company Properties

Source: Cardiff Coal and Iron Company, *The Town of Cardiff,
and Lands and Mines of the Cardiff Coal and Iron Company*
(Cardiff Coal & Iron Company, 1890).

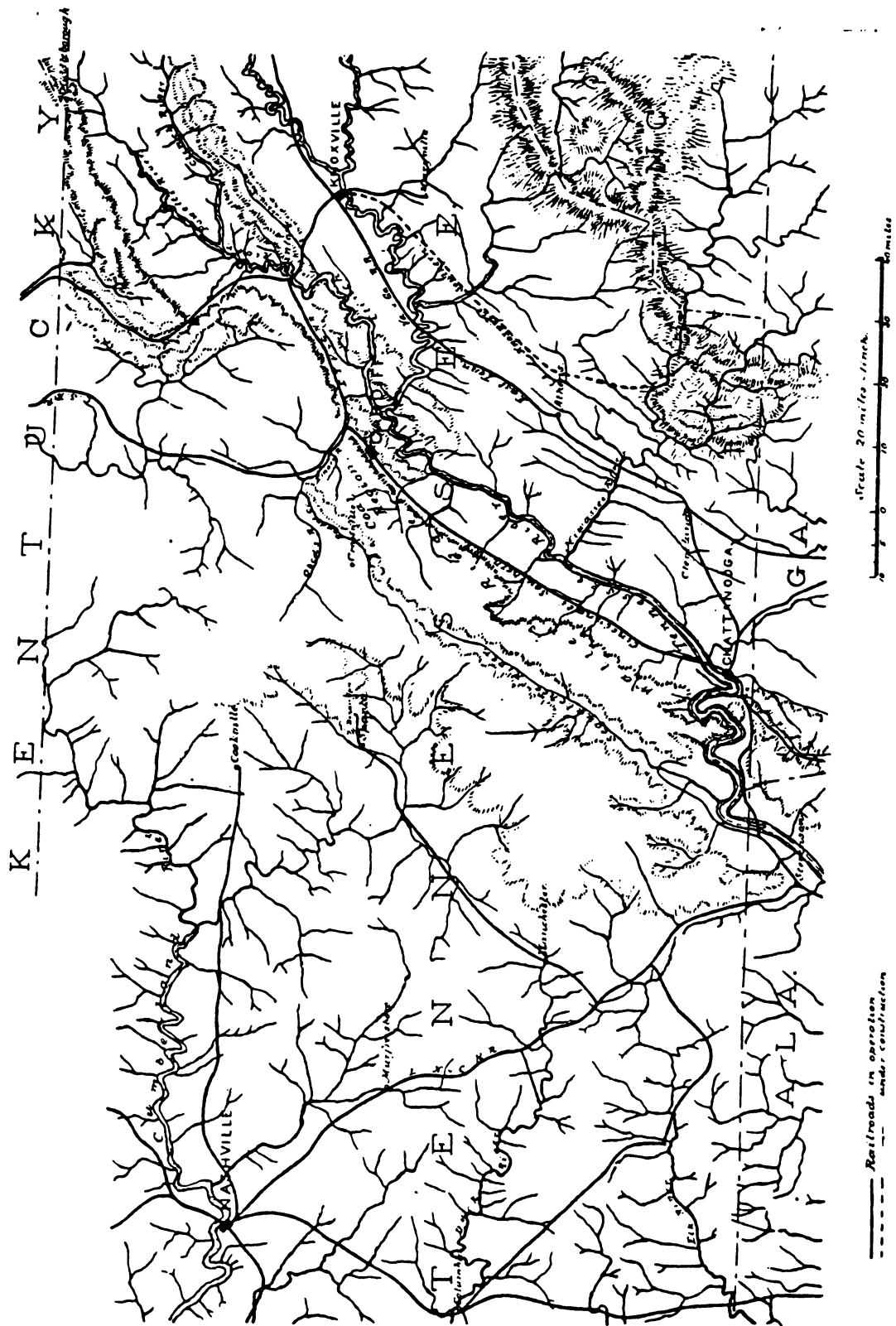


HILLTOPS PRINTING CO. INC.

Figure 3.5.

Map Showing Location of Cardiff, Tennessee

Source: Cardiff Coal and Iron Company, *The Town of Cardiff,
and Lands and Mines of the Cardiff Coal and Iron Company*
(Cardiff Coal & Iron Company, 1890).



The company also had definite ideas about how the internal structure of Cardiff should be arranged, and turned next to planning the urban landscape of the settlement.

The Lenoir City Company

The Lenoir City Company (LCC) was established by a partnership of Knoxville entrepreneurs and New York City financiers and businessmen. The early catalyst was E. J. Sanford, a prominent regional entrepreneur involved in a wide range of business undertakings in Knoxville and East Tennessee. In early 1890, Sanford was at the apex of his business career: he was president of the Knoxville drug firm of Sanford, Chamberlain and Albers, as well as the Mechanics National Bank of Knoxville; vice president of the East Tennessee National Bank; and on the board of directors of the Knoxville Woolen Mills, the Knoxville Iron Company, the Coal Creek Mining and Manufacturing Company, and the East Tennessee, Virginia & Georgia Railway.³⁷ Sanford's ability to spur an urban-industrial development initiative in the Upper Tennessee River Valley was directly related to his relationship with another successful East Tennessee native, Charles McClung McGhee. McGhee, a former resident of Knoxville, had as previously mentioned been involved in railroad development in the South since before the Civil

³⁷Mary U. Rothrock, Ed., *The French Broad-Holston Country: A History of Knox County, Tennessee* (Knoxville: East Tennessee Historical Society, 1946), 479-480.

War. In 1886, he had moved from Knoxville to New York City in order to fulfill his duties with the East Tennessee, Virginia & Georgia Railway, of which he was a vice president in 1890. Although he left the area, McGhee maintained a continuing interest in development in East Tennessee, and remained an investor in several companies operating in the region (such as the Roane Iron Company). Sanford and McGhee had become close friends and business associates when they were Knoxville residents, and continued their business dealings after McGhee's departure. The two had frequently corresponded during the late 1880s, with McGhee inquiring about investment opportunities in East Tennessee and Sanford providing regional business news.³⁸ The Lenoir City development came to fruition through this correspondence.

In June of 1887, Sanford suggested to McGhee that an urban-industrial development in East Tennessee would be an sound investment. McGhee rejected the idea for the moment, but expressed to Sanford what his role would be if it were ever undertaken:

I fully agree with you in the views that you entertain with reference to the City... and would like very much to see the enterprise undertaken and carried through. But I do not feel willing that our Syndicate should embark in the enterprise. We have as you say made a success and I do not feel like embarking in anything that will take the profits that we have already made. A capital of one million dollars would be required to ensure the success of a city and while I would be willing to put in \$50,000

³⁸Sanford and McGhee wrote to each other on a fairly steady basis during the late 1880s and early 1890s. A survey of these letters provides much useful information about businesses in Knoxville and East Tennessee during this period. See the McGhee Papers, preserved at the McClung Historical Collection in the Customs Building, Knoxville, Tennessee.

as my part of the venture, yet the temper and spirit here is not now favorable to the giving of the other \$950,000. I think if I would father the scheme and undertake to do so I could secure the needed amount of money but if I did so I would have to assume the management of it to some extent and would have to become morally responsible to my friends who I would induce to go into it, this I feel unwilling to do.³⁹

Without McGhee's leadership in obtaining outside financing, Sanford abandoned the idea for the immediate future. Less than two years later, however, the project was underway, and McGhee had enlisted his "syndicate" to fund and participate in the management of the company to be founded.

The syndicate to which McGhee belonged was made up in large part of New York financiers and businessmen with whom he had become associated during his work with the East Tennessee, Virginia & Georgia Railway. These men were among the most powerful and respected businessmen of their era, and most had begun their careers working for railroads in some capacity. Probably the best known of these was Samuel Thomas, president of the East Tennessee, Virginia & Georgia Railway at this time.⁴⁰ Also part of the syndicate with McGhee, Sanford, and Thomas were: Calvin S. Brice, vice president of the East Tennessee, Virginia & Georgia Railway as well as president of the Lake Erie & Western Railroad;⁴¹ Oliver H. Payne, a principal in the innovative Standard Oil Company in association with John D.

³⁹McGhee to Sanford, June 10, 1887; Partially quoted in MacArthur, *Charles McClung McGhee*, 227.

⁴⁰ETVG, *Board of Directors Minutes*, January 8, 1889 and numerous others.

⁴¹*Dictionary of American Biography*, Vol. 1, (New York: Charles Scribner's Sons, 1936), 31-32.

Rockefeller;⁴² and John G. Moore and Elverton R. Chapman, partners in the New York brokerage firm of Moore & Schley.⁴³ McGhee and Sanford also brought some of their Knoxville relatives and business associates into the enterprise. These were E.T. Sanford, J.M. Thornburgh, Calvin M. McClung, A.J. Albers, William P. Chamberlain, and T.H. Heald. Sanford and Thornburgh were prominent Knoxville law partners, while McClung, Albers, Chamberlain, and Heald were principals in some of the city's largest businesses (C.M. McClung & Co., wholesale hardware, Sanford, Chamberlain & Albers, wholesale and retail drugs; Knoxville Iron Company; and Black Diamond Coal Co., respectively).⁴⁴ Thus, the Lenoir City Company was formed.

Like the East Tennessee Land Company and the Cardiff Coal and Iron Company, the Lenoir City Company was planned from the outset to be a publicly-owned enterprise. Upon its incorporation with the state in April of 1890, the company declared \$800,000 worth of stock, in the form of 8,000 shares worth \$100 each. The LCC planned to issue \$400,000 of this to the public at par value. It added a new twist, however, to the sale of stock to the public. Each buyer received not only stock certificates, but also a

⁴²Ibid., Vol. 7, 329-330; Chandler, *The Visible Hand*, 321-322.

⁴³Lenoir City Company, *Board of Directors Minutes*, May 20, 1890; Navin and Sears, "The Rise of a Market for Industrial Securities," 129. The board of directors minutes of the Lenoir City Company have been preserved and are available, as the company continues to maintain offices at Lenoir City, Tennessee.

⁴⁴*Prospectus of the Lenoir City Company* (Lenoir City Company, 1890), 4. C.M. McClung was McGhee's son-in-law, and E.T. Sanford was E.J. Sanford's son.

lot or lots in a city development worth the value of the stock subscription.⁴⁵ To cultivate potential investors, the company assured them of the stability of its development and the advantages of its stock sale strategy:

Lenoir City is not a "boom town"; it is not the effort of speculators to build upon some old, worn-out fields, a mushroom city that cannot withstand future financial storms, and by taking advantage of popular excitement to sell out the lots to outsiders at unreal and fancy prices, and then silently retire from the field, leaving the investors and so to speak, to "hold the bag," the poorer from their investment in everything except experience...

Having started out with this determination, they realize the fact, pointed out by reason, that the way to permanently utilize the unexcelled natural advantages of Lenoir City, is to offer this property to the public in such a manner that INVESTMENTS SHALL BE PROFITABLE TO THE INVESTORS, AND THAT EVERY INVESTOR SHALL BECOME DIRECTLY INTERESTED WITH THEM IN THE ENTERPRISE, and a zealous and co-operating agent in the upbuilding of the City."⁴⁶

Half of the proceeds of public stock sales were to be used to "pay for the original purchase of the property and debt contracted in the formation of the Company."⁴⁷ This indicates that bonds were probably floated to fund the early activities of the company, although no primary evidence has been found to support this.

The focus of the Lenoir City Company's developmental plans was its city development, to be "one of the healthiest, most attractive and prosperous manufacturing and commercial cities in the entire South."⁴⁸ The company based its expectations of industrial development largely on the proximity of its land holdings to the mineral resources of the Upper Tennessee River Valley. In its prospectus,

⁴⁵Ibid., 24-25.

⁴⁶Ibid., 23.

⁴⁷Ibid., 25.

⁴⁸Ibid., 8.

the LCC quoted iron-making experts of the period, I. Lowthian Bell and Abram S. Hewitt, stating that the Tennessee Valley was an ideal locale for iron production.⁴⁹ It emphasized that industrial facilities locating in Lenoir City would have access to the region's vast coal deposits. In fact, the same syndicate that was involved in the the LCC had a controlling interest in the Coal Creek Mining and Manufacturing Company (CCMMC), an enterprise principally involved in coal extraction. The CCMMC at this time owned 90,000 acres of coal lands in Anderson County, Tennessee, and the LCC planned to utilize the coal from this property to promote industry at Lenoir City.⁵⁰ The company was also cognizant of the site's transportation situation, noting:

...Lenoir City will be the meeting point of two great trunk lines, where the two streams of immigration and capital flowing southward - from the Eastern and Middle States, by the East Tennessee, Virginia & Georgia Railway; and from the valleys of the Ohio and Upper Mississippi rivers, by the Cincinnati-Southern Railroad - will unite and build up a great industrial center."⁵¹

This combination of resource availability and transportation-connectedness served as the LCC's major selling point in convincing investors of the future success of its proposed development.

The property that was purchased by the LCC for its development was part of the Lenoir Estate, which had been

⁴⁹Ibid., 12.

⁵⁰MacArthur, *Charles McClung McGhee*, 218-223.

⁵¹*Prospectus of the Lenoir City Company* (Lenoir City Company, 1890), 11.

ceded to General William Lenoir by the State of North Carolina for service in the Revolutionary War.⁵² The proposed town site consisted of a 2,700 acre tract located on the north shore of the Tennessee River, near its confluence with the Little Tennessee River (Figure 3.6). The site was located on the main line of the East Tennessee, Virginia & Georgia Railway approximately 23 miles southwest of Knoxville and 88 miles northeast of Chattanooga. Soon after the purchase of the property, the LCC commissioned a detailed plat of the proposed urban area. The development of Lenoir City became the main subject of the LCC's activities, as it attempted to administer the growth of a "commercial and industrial center of the first importance."⁵³

Harriman, Cardiff, and Lenoir City:
The Planning, Selling, and Peopling of New Communities
in the Upper Tennessee River Valley

As the land companies operating in the Upper Tennessee River Valley made the development of planned urban-industrial communities the focus of their activities, they were faced with decisions about the form and function

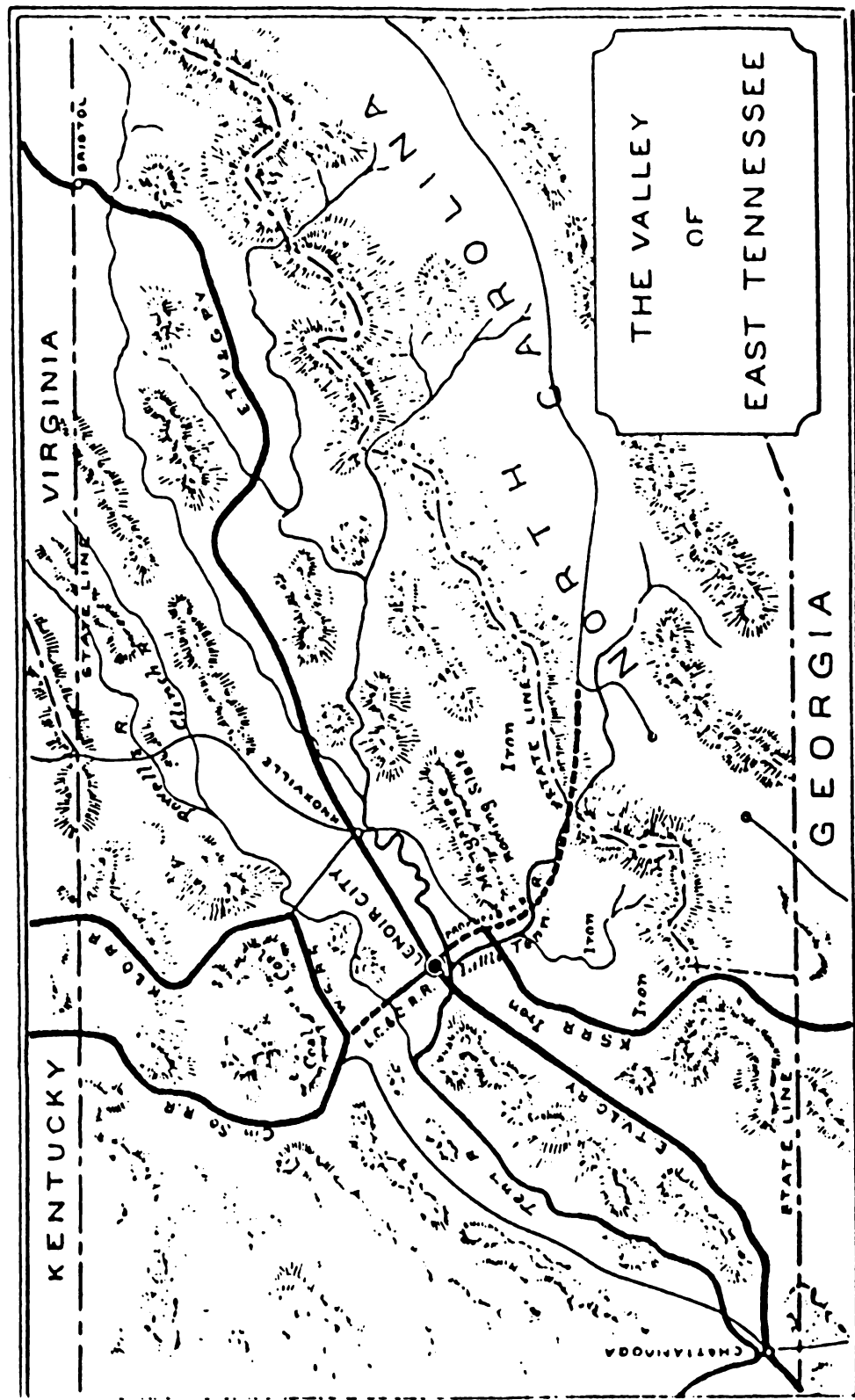
⁵²Ashley T. Hawn, "The Lenoir City Company, An Attempt In Community Development," (Master's Thesis, University of Tennessee, Knoxville), 7. In part because of this land grant, William Lenoir was an influential figure in western North Carolina and East Tennessee during the late 1700s and early 1800s. His vast land holdings were passed on to his sons at his death in 1839, and they in turn were important figures in these areas for the balance of the century. Hence, the name of the Lenoir City Company and Lenoir City.

⁵³*Prospectus of the Lenoir City Company* (Lenoir City Company, 1890), 12.

Figure 3.6.

The Lenoir City Company's Map
of The Valley of East Tennessee

Source: Lenoir City Company, *Prospectus of the Lenoir City
Company* (Lenoir City Company, 1890).



of these settlements. Company housing was not incorporated into any of the community plans. Instead, the companies used infrastructure improvements and professionally designed community plans as selling points, and attempted to make its money on the sale of improved lots to buyers. In addition to residential tracts, the land companies were especially interested in selling land to manufacturing enterprises, which they envisioned would be the major employment bases of the communities. Thus, rather than model company towns, Harriman, Cardiff, and Lenoir City can be more accurately described as model real estate ventures and model industrial communities.⁵⁴

In planning and developing their model industrial communities, the land companies operating in the Upper Tennessee River Valley uniformly drew upon urban sanitary reform ideals. With respect to city site choice, each of the companies justified its city location using the language of sanitary reform.⁵⁵ In describing the location of Harriman, the East Tennessee Land Company explained that:

⁵⁴The distinction between these terms is made because the land companies did not retain ownership of land in the subject communities and did not rent property as a profit strategy (as is often assumed when the term "company town" is used).

⁵⁵The sanitary reform movement was based upon an empirically-grounded explanation of origin and spread of infectious diseases, often called the "filth theory" by medical historians. Reformers, for instance, pointed to filth as the cause of numerous scourges -- among them yellow fever, cholera, typhoid, scarlet fever, and diphtheria. Filth, depending upon the disease and the observer, could encompass such conditions as odors arising from decomposing organic waste, stagnant water, sodden ground, and absence of sunlight. See Jon A. Peterson, "The Impact of Sanitary Reform Upon American Urban Planning, 1840-1890," 13-39.

It is nearly 1,000 feet above sea level, and beyond the yellow fever range. Its location is cool in summer, warm in winter, and healthful all of the time. There the days are never tropically hot, and the nights are deliciously cool.⁵⁶

The Cardiff Coal and Iron Company used like terminology to describe Cardiff's situation:

The town site of Cardiff lies like an undulating ocean at the foot of Walden's Ridge, and by it is protected from the March winds--those active agents and confederates of pulmonary diseases. It is an area within which malarial fevers and epidemic diseases have never been known.⁵⁷

Similarly, the Lenoir City Company summarized the characteristics of the area in which its community was to be located:

Lenoir City is situated in the Central South, 1000 feet above the sea-level, with a climate singularly equable and exhilarating, midway between the severity of the New England climate and the heat of the extreme South; lying north of epidemics, and south of blizzards. No hurricanes, cyclones or dangerous storms have ever been known in this section of the country; their forces are shattered on the outer wall of mountains that engirdles the East Tennessee Valley. All the conditions of a sanitarium are found here; elevation, pure air, healthful waters, and an atmosphere dry and bracing, acting as a tonic on debilitated persons. The elevated location of the City exempts it from the dangers of overflows and malarial diseases; its topography assures the advantages of perfect drainage.⁵⁸

Each of the companies also translated this awareness of reform ideals into the development and planning of their urban industrial communities: urban infrastructure and services that were thought to positively impact the physical and mental health of humans were to be provided. The East Tennessee Land Company spelled out to potential investors and buyers that:

⁵⁶*Prospectus of the East Tennessee Land Company*, 35.

⁵⁷*The Cardiff Herald*, April 23, 1890.

⁵⁸*Prospectus of the Lenoir City Company* (Lenoir City Company, 1890), 19-20.

The fixed policy of this Company, in town-building, is to establish all original town improvements--to lay the sewers, the sidewalks and the paving, to put in the water-works, and the lighting system, and the streetcar system--and then to operate all these, and secure the profit thereon, through subordinate companies which it shall control, by retaining a majority of stock in each.⁵⁹

The Cardiff Coal and Iron Company reported through its mouthpiece, the *Cardiff Herald*:

No where is greater care exercised in all matters relative to the health of a place than in Cardiff. Every precaution is taken, the utmost vigilance is observed in all sanitary matters. The sewerage system will be perfect, and the work already done indicates the policy to be followed. Health is of primary importance, and while nature has done her share for the place, sanitary science will keep abreast of the constantly changing condition of affairs here.⁶⁰

Also:

In establishing industrial towns, the advantages of a site from a business point of view too commonly decide the question of locality, while the inestimable value of health as a prime factor in the successful growth and development of all industrial centers is apparently lost sight of. No such mistake has been made in locating the town of Cardiff. It would be difficult to find anywhere in the South, or in fact, in the entire country, a site where the conditions necessary to the maintenance of a high standard of health prevail to a greater extent than they do here.⁶¹

Thus, the land companies recognized the infrastructural improvements that were to be part of their urban developments not only as promoting public health, but as being sound investments in a business sense.

The land companies operating in the Upper Tennessee River Valley also incorporated moral reform measures in their urban places. Like many model company town builders before them, the companies felt that the work ethic and

⁵⁹*Prospectus of the East Tennessee Land Company*, quoted in Pulliam, *Harriman: The Town That Temperance Built*, 31.

⁶⁰*The Cardiff Herald*, July 23, 1890.

⁶¹*Ibid.*, October 1, 1890.

business success could be fostered by the promotion of temperance. The East Tennessee Land Company made a concerted effort to identify its development with the movement, dubbing Harriman "The City of Temperance" during its early advertising campaign. The ETLC explained in one of its publications:

It is a well-known economic fact that sober labor, away from saloons, yields a positive percentage of gain to the capital employing it, over labor in a community where the liquor traffic is allowed. Statistics could here be cited were it necessary, to show that this is the fact, and that large manufacturing plants have actually yielded a much larger interest upon their capital in years when the liquor traffic around them was forbidden and abolished, than in years when the liquor traffic was permitted, but with the same financial conditions otherwise. By the policy of the East Tennessee Land Company the liquor traffic is prohibited in title deeds, and saloons can never be permitted, with their inevitable influences upon labor and its product.⁶²

The Lenoir City Company echoed these sentiments in relation to city-building. In its prospectus, under the bold-letter heading "NO BAR ROOMS," the LCC justified its temperance policy:

The promoters of this Company, as a matter of business, and for the protection and general welfare of the people already living on this property, and of those who will soon make this City the home of their families, and to prevent disorders and lawlessness, have determined to put into each deed executed by the Company a clause forfeiting the title if liquor shall ever be manufactured or sold on the premises conveyed. All manufacturers know that it is the convenient dram shop which does the most to demoralize workmen and impair their usefulness.

This will be especially valuable to the Furnace plants and all other manufacturing enterprises that are now and soon will be established here.⁶³

The emphasis of the companies was, therefore, on the creation of social conditions that would encourage stable

⁶²*Two Years of Harriman*, 94.

⁶³*Prospectus of the Lenoir City Company*, 19.

industrial workforces, facilitating efficient production and, in turn, the success of their urban-industrial places.

The land companies made property and home ownership defining elements of the urban places they were developing. This was related to two goals which the companies were trying to attain. The first was intrinsic to the place-making strategy employed in the development of urban settlements such as Pullman and Hopedale: that model company towns should be considered first and foremost as business ventures. The companies' investment in land and improvements could be recovered most quickly through the sale of lots. The second was related to the longer-term profitability of the urban developments: contributing to the creation of a favorable labor environment for industrial production. In relation to this, the East Tennessee Land Company wrote:

No class of workingmen ever is so profitable to its employers as the class which can come and does come, by reason of its labor, into the ownership of its own homes, covets permanency of employment, strives after superiority, and seeks that mutual welfare which labor and capital should each assure to each. Already the number of homes owned at Harriman by the workingmen employed there surpasses, as is believed, that of any other town of like proportion.⁶⁴

In making the decision to sell the lots in their cities, the land companies were forfeiting total property control for immediate monetary returns, while maintaining the ability to dictate the character of development that took place in them.

⁶⁴*Two Years of Harriman*, 94.

Spatial Strategies on the Landscape: The City Plans

Because the land companies expected industry to be the basis of the growth and development of their cities, the plans that they commissioned for their cities took into account the needs of manufacturers and potential residents. The companies, operating under the increasingly accepted logic that skillful place-making could improve labor pools and industrial production, spent a considerable amount of the capital they had obtained in attempting to do so. But what spatial characteristics did the companies perceive as desirable for efficient industrial production? With total control over the planning process, one would assume that the companies employed spatial strategies in their city plans that they believed would assist them in achieving economic and social goals.

The city plans created by the land companies had some components in common (Figures 3.7, 3.8, 3.9). One of these was a general grid pattern of streets and blocks, with service alleys bisecting most blocks. The grid pattern of subdivision was not distinctive, and suggests the companies' concern with ease of subdivision and obtaining large numbers of lots to sell in their city sites. Each of the plans also set aside large tracts of land for industrial use adjacent to railroad lines. Undoubtedly, this design feature was incorporated as an attraction to manufacturers considering location in the

Figure 3.7.

Harriman City Plan

Source: Roane County Register of Plans, Book C-2, 326-327.

Figure 3.8.

Cardiff City Plan

Source: Roane County Register of Plans, Cabinet 1, Slide 4.

Figure 3.9.

Lenoir City Plan

Source: Lenoir City Company, *Prospectus of the Lenoir City Company* (Lenoir City Company, 1890).

cities. Railyards sites would make loading and unloading of raw materials and finished products easy and efficient, and would contribute to the low-cost operation of any industrial facility.

The East Tennessee Land Company chose a tract within an oxbow of the Emory River for Harriman (Figure 3.7). The grid subdivision pattern was altered somewhat to fit the hexagonal shape created by the river and a proposed rail belt line. Some more distinctive urban reform-related elements of the plan were a block set aside for public buildings which faced Roane, Walden, Trenton and Morgan Streets, and the designation of an extensive public park (Block 36). Lots were not subdivided to uniform size throughout the city site. Residential lot sizes were significantly larger (50 x 190 compared to 25 x 127 1/2) in an area bounded by Clinton, Union, Clifty, and Walden Streets, that occupied a ridge looking down on the rest of the area.

The Cardiff Coal and Iron Company's plan for Cardiff incorporated the grid plan in most of the area north of Georgia Avenue (Figure 3.8). The Cincinnati Southern rail line bifurcated the city site, and land was designated for a depot at a central location on the north side of the tracks. Lot sizes were larger to the south of Georgia Avenue, and in one section of this area, curvilinear streets and irregularly shaped lots were laid out. The design of this residential area contrasted sharply with the

subdivision pattern of the rest of the site, mimicking features of Olmsteadian model suburbs.⁶⁵ This area was also set apart by a change in street naming protocol, with streets named after American statesmen, politicians, and commanders rather than states or cities.

The most distinctive feature of the Lenoir City Company's plan for Lenoir City was the provision for public space (Figure 3.9). Within the grid plan, public spaces such as Madison Square, Oakwood, The City Mall, the City Hall and Market, and The Piran Court Square interrupted the general pattern. This reflected an urban reform orientation towards open space as essential to maintaining public health. As in the other plans, some areas of the site were subdivided into larger lot sizes, including a sizable section in the northwestern part of the site and a smaller one in the extreme east adjacent to "The Strand." A block was also designated for public schools and other public buildings (Block 7).

The companies' perceptions of their planned urban landscapes were articulated in advertisement literature. The literature indicates preconceived ideas about the arrangement of urban-industrial landscapes, and suggests intentional spatial stratification of land uses and

⁶⁵Olmstead felt that the suburb should provide a setting for domestic life free of the commotion, crowding, and physical chaos that characterized the central areas of industrial cities. His suburban designs usually featured curvilinear streets, large irregularly shaped lots, and public open spaces, as well as sewer and water systems.

societal groups. The East Tennessee Land Company described Harriman in part in the following manner:

Cumberland Street... traverses the crest of the high ridge which runs across the town, and upon this street are many residences of an excellent class...At the eastern end of this street...stands the elegant home of Mr. Frederick Gates, in whose brain Harriman was conceived...his home commands a splendid prospect of the city which he and his colleagues have established.

Still another Cumberland Street home...is the residence of Mr. S.K. Paige, President of the Paige Manufacturing Company, which vies with that of Mr. Gates...in costliness and architectural design. From this, as from all residence sites in this part of town, a magnificent view of Emory Gap is had, with much of the town spread out below you upon the lower slopes.

...Even the homes of the cheapest class, such as abound in the manufacturing district, upon Clifty, Sewanee, Carter, Emory, and other streets, are noteworthy for their neatness, and their general average as above homes of a similar class in other manufacturing places.⁶⁶

It is obvious from this description that the ETLC envisioned different areas of the city site for various classes of residents. The ridge area was to be an upper class residential area, and the areas below on the periphery of the site adjacent to manufacturing facilities were to be for the working classes. The spatial delineation was clear enough in the company's eyes that specific streets could be associated with the residential areas of particular socioeconomic groups. Although not as specifically articulated, the other companies demonstrated similar methods of partitioning their urban landscapes. The Lenoir City Company summarized the features of its city site thus:

By reference to the map of the Lenoir City site...it will be seen that the East Tennessee, Virginia & Georgia Railway traverses the central portion of the City from north-east to south-west, and that Town Creek flows through the central portion

⁶⁶Ibid., 32-42.

from north-west to south-east, at nearly right angles to the railroad, thus dividing the site into four quadrangular divisions.

That portion which is north of the railroad and west of Town Creek will be the residence portion of the City, with several longitudinal and lateral streets near the railroad. The central and northern portions of this division consist of a succession of beautiful hills and vales covered with magnificent groves, which are most suitable for residential purposes.

Upon that portion lying south of the railroad and west of Town Creek, on a river front at considerable distance from the City site, will be located the larger and heavier factories, such as blast furnaces, steel works, saw mills and lumber yards.

Upon that portion lying south of the railroad and west of Town Creek, will be established woodworking plants, wagon spoke, handle and furniture factories, and canning establishments. On either side of Town Creek, cotton and woolen mills, and all kinds of textile factories will be located.

The northern portion of the remaining division, lying north of the railroad and east of Town Creek, will be laid off into lots, and sold to operatives and wage workers on the most liberal terms.⁶⁷

Again, the LCC had specific, preconceived ideas about how urban land was to be used prior to selling its land.

Strategies to Realities: The Selling of Urban Land

The land companies turned their perceptions and aspirations into realities through their land sale methods. In the case of Harriman, initial sales were accomplished through a company-administered auction. The East Tennessee Land Company advertised its land sale in newspapers in New York City, New Jersey, Pennsylvania, Ohio, and throughout New England during January and February of 1890. From the company's offices at No. 96 Broadway in New York's financial district, letters and leaflets were sent to prospective buyers and investors (Figure 3.10).⁶⁸ The

⁶⁷*Prospectus of the Lenoir City Company*, 21-22.

⁶⁸Pulliam, *The Town That Temperance Built*, 10.

CUNYON B. FISH, PRES.

A. A. HOPKINS, SEC.

East Tennessee Land Company.

96 BROADWAY.

NEW YORK, JANUARY 23D, 1890.

WE ARE HAPPY TO INFORM YOU THAT THE OPENING SALE OF LOTS AT OUR NEW CITY SITE OF HARRIMAN, WILL TAKE PLACE NEXT MONTH. WE HAVE BEGUN ACTIVE BUILDING OPERATIONS THERE BY BREAKING GROUND FOR OUR LARGE HOTEL, THE COMPANY'S HEADQUARTERS, THE ERECTION OF TEMPORARY BOARDING HOUSES, &c.; AND THE OFFICES

OF OUR GENERAL MANAGEMENT, OUR ATTORNEYS AND ABSTRACTORS, OUR ENGINEERS, SURVEYORS, AND OUR SELLING AGENTS, ARE TO BE ESTABLISHED THERE ON OR BEFORE FEBRUARY 1ST.

OUR STOCK BOOKS WILL CLOSE ON THE DAY PRECEDING THE DAY OF SALE, AND WILL NOT RE-OPEN FOR TEN DAYS. STOCK IS RECEIVABLE, IN WHOLE OR PART PAYMENT, FOR LOTS, AT A PREMIUM OF 33 $\frac{1}{3}$ %, AND, UNTIL FEBRUARY 10TH, WE WILL ALLOW YOU A DISCOUNT OF FIVE PER CENT. FOR FULL CASH IN ADVANCE PAYMENT ON ANY AMOUNT OF STOCK YOU MAY WISH. IT IS THUS MADE YOUR GREAT ADVANTAGE TO BECOME A STOCKHOLDER WITH US AT ONCE. BY SO DOING YOU WILL RECEIVE THE EQUIVALENT OF A FIVE PER CENT. DIVIDEND IN ADVANCE FOR THE FIRST YEAR; AND BE ABLE TO TURN YOUR STOCK INTO LOTS IF YOU SO PREFER, WHILE LOTS ARE YET LOW PRICED, AT FIGURES WHICH NO CASH BUYER OF LOTS CAN COMMAND.

IF YOU CHOOSE TO HOLD YOUR STOCK, HOWEVER, WE BELIEVE IT WILL PROVE ENTIRELY SATISFACTORY AS A PERMANENT INVESTMENT. OUR LARGEST HOLDERS, AND A GREAT MAJORITY OF

SEVERAL HUNDRED WHO SUBSCRIBED FOR THE MORE THAN \$800,000 OF STOCK ALREADY TAKEN, INVESTED FOR PERMANENCE, AND ANTICIPATE GREAT EARLY INCREASE IN THE VALUE OF THEIR STOCK, WITH GROWING DIVIDENDS THROUGH MANY YEARS TO COME.

THE IMMENSE VALUE OF THIS COMPANY'S MINERAL PROPERTIES, ITS WIDE AREA OF AGRICULTURAL LANDS, THE STRATEGIC SUPERIORITY OF OUR CITY SITE, AND OTHER FEATURES REFERRED TO AT LENGTH IN THE ACCOMPANYING PROSPECTUS, AMPLY JUSTIFY SUCH ANTICIPATION, AND AFFORD SUFFICIENT GUARANTEE FOR THE MOST CONSERVATIVE INVESTOR.

WE SHALL BE PLEASED TO NUMBER YOU AMONG OUR CO-OPERATORS.

RESPECTFULLY YOURS,

A. A. HOPKINS,

SECRETARY.

Figure 3.10. Advertisement Leaflet for East Tennessee Land Company Lot Sale at Harriman, Dated January 23, 1890

ETLC's sale ran from February 26 to February 28, 1890 and attracted from 3,000 to 4,000 prospective buyers from all over the eastern United States. During the three day period, 574 lots were sold for a total of \$604,703 (Figure 3.11).⁶⁹ Although the sale was conducted under an open auction format, there is evidence that the company was involved in determining the price at which lots were sold. According to an account of the sale:

Just such a land sale was probably never seen before in this country, under such conditions, and its like may never be witnessed again. Faith in the Company's character, and confidence in the location of the town, had created enthusiasm of a remarkable degree...It would have run the aggregate sales to a round million dollars, had not the Company sought in unusual ways to discount the speculative spirit, and hold men down to reasonable business bidding.⁷⁰

What the ETLC determined to be "reasonable business bidding" was dependent upon its preconception of how space was to be used in Harriman. When the company became involved in the bidding process, it more than likely imposed prices that it felt were fair and appropriate for lots in various parts of the city site. Thus, the results of the ETLC's handling of the land sale were more than satisfactory monetary returns and the maintenance of company influence on land values and land use through intervention in the auction process.

The Cardiff Coal and Iron Company and the Lenoir City Company also attempted to influence land use in their city through their land sale methods. Each of the companies

⁶⁹*Harriman Daily Advance*, April 8, 1890.

⁷⁰*City Directory of Harriman, Tennessee, Volume I, 1892* (Chattanooga, TN: G.M. Connelly, 1892), 26.

Figure 3.11.

The Great Land Sale at Harriman, Tennessee

Source: Roane County Heritage Commission Photograph
Collection, Kingston, Tennessee.



assigned values to lots in their cities before any buyers bid on them. Land in Cardiff was sold at an auction similar to that held by the East Tennessee Land Company. In addition to national newspaper advertisements, the CCIC commissioned at least one agent to travel to major cities of the United States and Canada soliciting buyers and investors in advance of the land sale.⁷¹ The Cardiff sale began on April 22, 1890 and continued for three days. A total of thirty-five Pullman rail cars, bringing an estimated 4,000 prospective buyers from the New England states, New York, Cincinnati, Louisville, Atlanta, and several other cities arrived in Cardiff for the sale (Figure 3.12). By the end of the auction, the CCIC had sold over a million dollars worth of lots, for prices ranging from \$500 to \$7,000.⁷² The method of sale was described by the CCIC:

A definite price has been fixed upon each offered lot, which will be the maximum price for the Company to receive therefore. The lots will be put up at auction and sold to the highest bidder for whatever price they bring, whether it amounts to more or less than the maximum price, but all premiums (of \$50 or any multiple thereof bid on lots) above the maximum price will be returned to the successful bidder in the stock of the Company, full paid and non-accessable...⁷³

⁷¹F.R. Cordley to J.F. Randolph, August 23, 1890; F.R. Cordley to J.F. Randolph, September 3, 1890; F.R. Cordley to J.F. Randolph, September 10, 1890; F.R. Cordley to J.F. Randolph, September 15, 1890; F.R. Cordley to J.F. Randolph, September 22, 1890; H.H. French to J.F. Randolph, September 22, 1890; H.H. French to J.F. Randolph, September 24, 1890, Cardiff Coal & Iron Company Papers, Roane County Heritage Commission, Kingston, TN. John F. Randolph was an agent of the Cardiff Coal and Iron Company, and traveled widely in advertising the company's activities and soliciting investors. The letters cited above discussed Randolph's activities as agent, and were mailed to him on the job in Boston, Ottawa, Toronto, and Detroit.

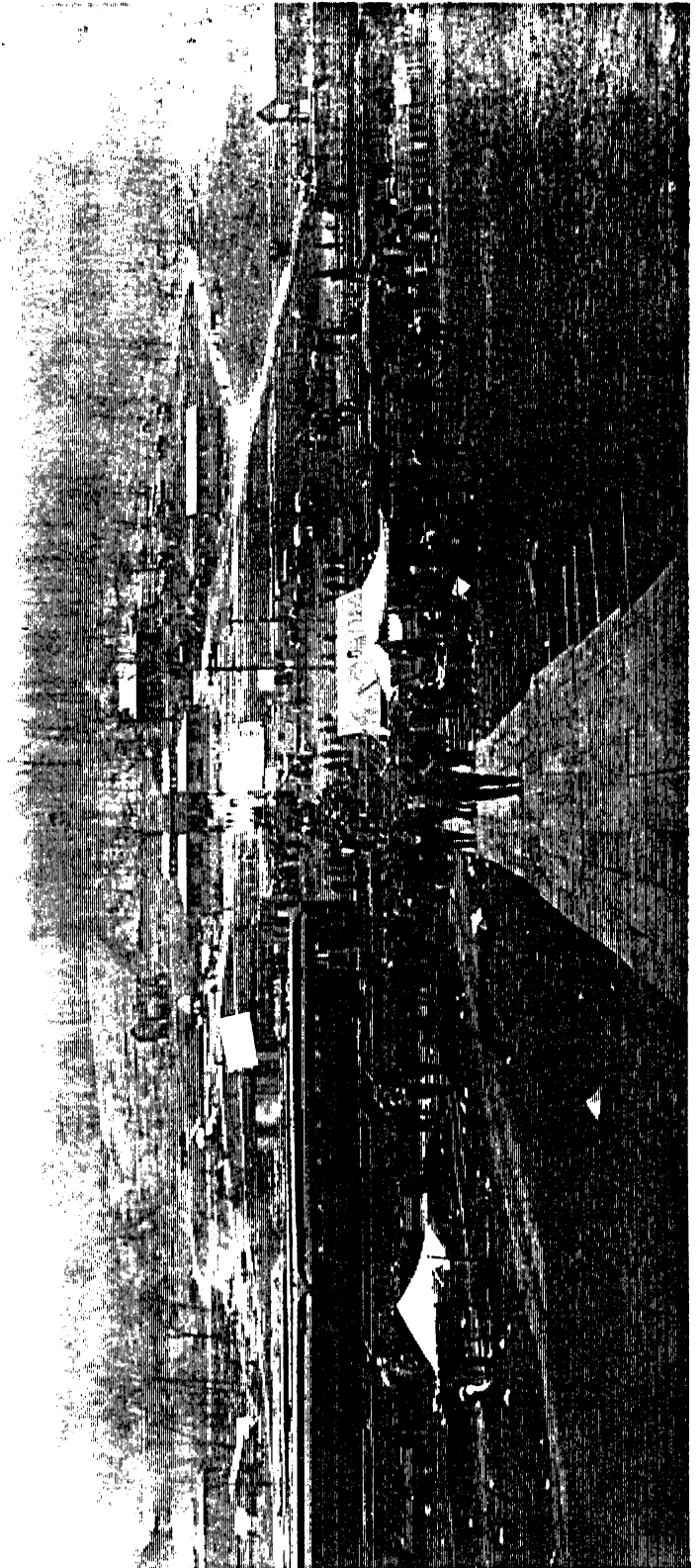
⁷²*Ibid.*, April 30, 1890.

⁷³*The Cardiff Herald*, April 23, 1890.

Figure 3.12.

The Cardiff Land Sale

Source: Roane County Heritage Commission Photograph
Collection, Kingston, Tennessee.



This method selling lots allowed the company to quantify its vision of how land should be used within the city site by placing *apriori* values on specific pieces of land. For instance, lots that the company thought should be used for prime commercial sites or high-class residential areas would be assigned high prices, and those for lower-class worker housing lower prices.

The Lenoir City Company treated urban land in essentially the same way in their development, although it did not conduct a public auction. The company assigned values to lots in advance, and placed those values on a map of the city site that was distributed with each company prospectus (Figure 3.9). Lots were not sold outright, *per se*, but were included as bonuses when a purchase of Lenoir City Company stock was made. The company described this process, which it dubbed the "Mutual Plan":

A large tract of land belonging to the Company, lying in the center of the locality where the City is to be built has been already laid off in streets and lots, and an accurate map has been made of the entire property showing in detail these streets and lots. These lots have been estimated in value, the valuations being as nearly uniform as possible, after making allowances for the different locations and sizes of the various lots and the uses to which they can be put...

These lots...are to be disposed of by the Company in connection with the \$400,000 of stock, in the following manner: THIS \$400,000 WORTH OF STOCK WILL BE SOLD TO THE PUBLIC AT PAR. EVERY PURCHASER OF THIS STOCK WILL, HOWEVER, RECEIVE NOT ONLY PAID-UP STOCK TO THE AMOUNT OF HIS SUBSCRIPTION BUT ALSO A LOT (OR LOTS) WHOSE ESTIMATED VALUE IS EQUAL TO THE AMOUNT OF HIS SUBSCRIPTION.⁷⁴

Of course, the locations and sizes of lots within the city site were determined by the LCC when it imposed its plan

⁷⁴*Prospectus of the Lenoir City Company*, 24-25.

upon the landscape, and the company had not wished to create a uniform settlement pattern when it subdivided the former Lenoir Estate.

What kinds of urban places were created in the Upper Tennessee River Valley by these land companies? Reconstruction of urban morphology and social landscape is possible from the large and well-preserved collection of materials on the early development of Harriman, Tennessee.

The Results of Land Company Development Strategy:
Harriman, Tennessee

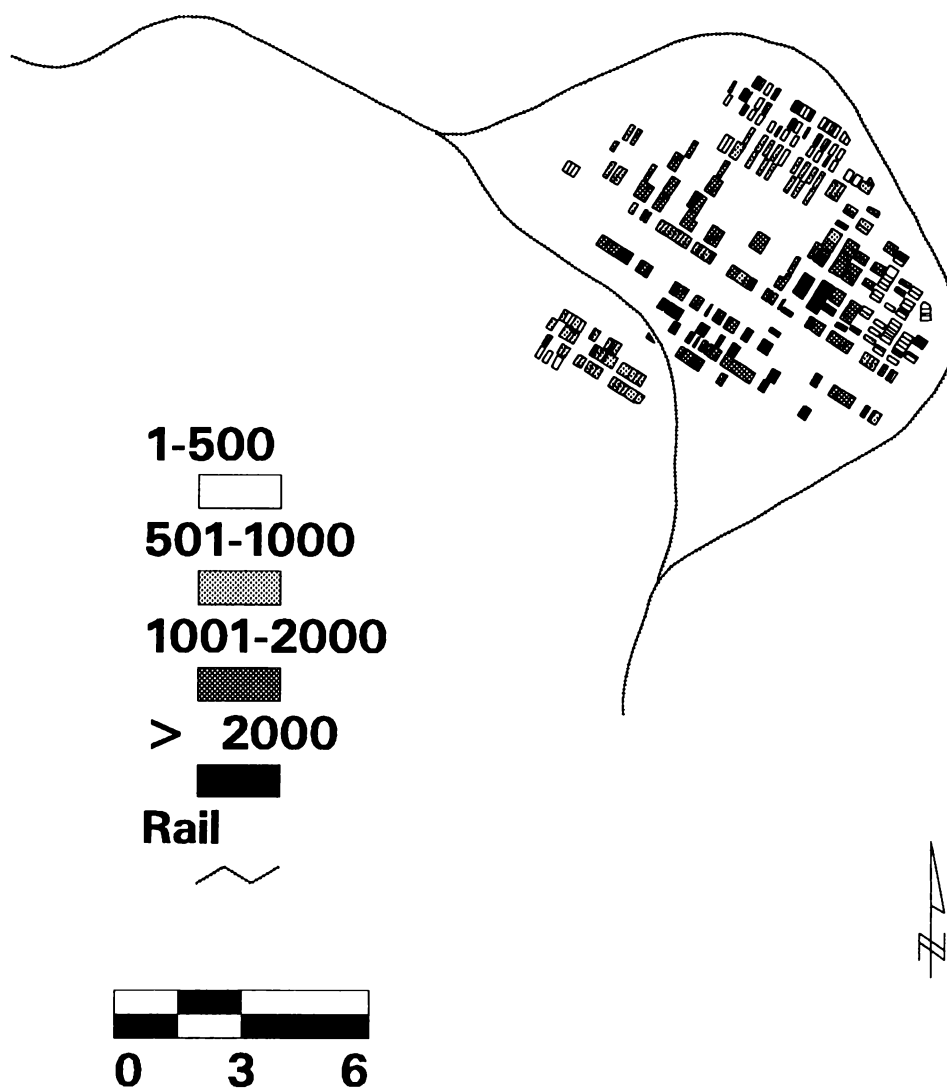
The first step in the East Tennessee Land Company's realization of its plan for Harriman was its land sale. Prices paid for city lots varied greatly, but generally, lot price variation corresponded to land uses which the company had envisioned (Figure 3.13). Lots that sold for less than \$500 usually were located in the periphery of the original platted area, to the south of Carter Street and the east of Clifty Street, the area intended for "homes of the cheapest class" encompassing Clifty, Carter, and Emory streets.⁷⁵ The other instance of lots sold for under \$500 was in an area not shown on the original plat, i.e. west of the East Tennessee, Virginia & Georgia Railway line. Lots bought for above \$2,000 were located in the ridge area on Cumberland and Walden Streets, or along Roane Street to the

⁷⁵Information on lot sale prices was obtained from the Harriman Daily Advance, April 8, 1890. This information was cross-checked against Roane County deed records.

Figure 3.13.

Inaugural Land Sale Lot Prices,
February, 1890

Data: Harriman Daily Advance, April 8, 1890;
Roane County Deed Records.



west. The ETLC had described the ridge area, and Cumberland Street in particular, as an upper-class residential area in its literature. Roane Street had been envisioned as the main commercial boulevard in the city, the company promising that it would "in due time [be] the central thoroughfare of Harriman...[which] will approximate three miles in length."⁷⁶ Thus the ETLC was successful in translating its envisioned land use regime into a stratified real estate market through its land sale.

For all of the planning that went into the early development of Harriman, the East Tennessee Land Company was forced to add two residential areas only three months after the inaugural land sale. Apparently, the company realized that it had not made adequate provisions for unskilled and semi-skilled workers, needed in various industrial facilities, but unable to afford property in most of the originally platted city area. The two "additions" were laid out approximately one mile northwest of the original city site, separated from it by the East Tennessee, Virginia and Georgia line and a tract of unplatted, undeveloped land. The company explained the need for these additions:

In May, 1890, an addition was platted one mile east for the special accomodation of workingmen who could not afford such prices as had been for a time established by the auction sale, and one hundred neat houses were built and occupied that year. It is known as Walnut Hills Addition, and forms a thriving suburb of the city proper, of which it is a corporate part. It has a school and a church, and number over 600 population. Oak View

⁷⁶*Two Years of Harriman*, 28.

Addition joins it, nearer the ridge, where colored residents have grouped themselves, with their own churches and schools...⁷⁷

Two important ideas were expressed in this description of the additions. First, the new residential areas were "additions," subordinate and apart from Harriman. They were separated from the original city site by a mile buffer and had their own institutions such as schools and churches. Second, these new areas were developed for defined groups of people. Walnut Hills was a residential area for the lower paid blue-collar white working class (workingmen), while Oak View was the section where any African-Americans working in the city would "group themselves." This initial omission of working-class residential areas from the plan gives an indication of the ETLC's priorities: they were more concerned with making money from sales of urban land than they were in creating the labor conditions needed for industrial production.

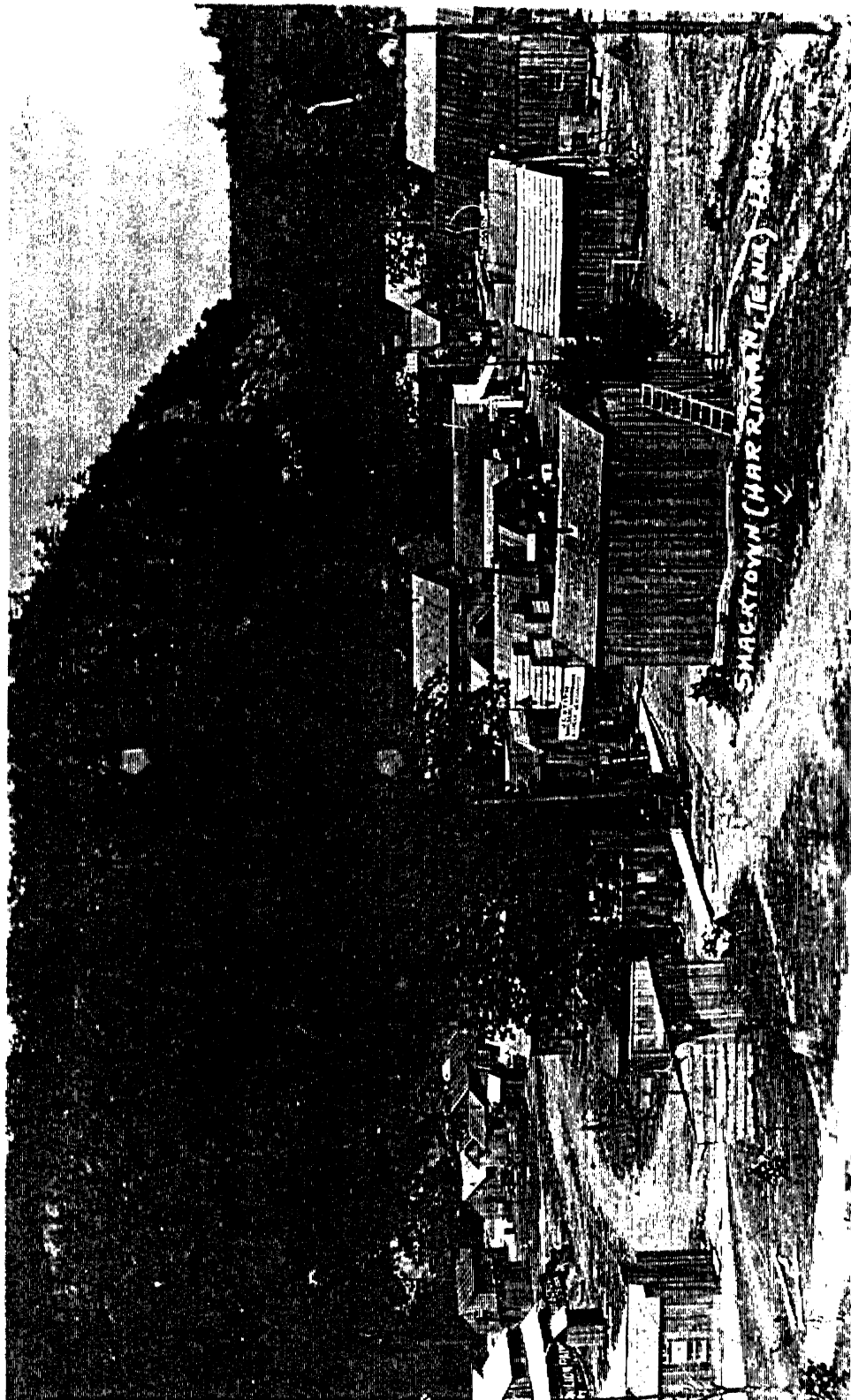
Construction of the city began in the months before the land sale and intensified in the months after it. Initially, temporary shacks were built to house workers and businesses in the settlement (Figures 3.14). This "Shacktown" area was gradually abandoned as permanent structures were constructed. The ETLC graded the entire city site, and carved streets and blocks out of the previously undeveloped landscape (Figure 3.15). In its first two years of operation, the company expended over \$50,000 in street improvements; established municipal

⁷⁷Ibid., 24-26.

Figure 3.14.

Shacktown, 1890

Source: Roane County Heritage Commission Photograph
Collection, Kingston, Tennessee.



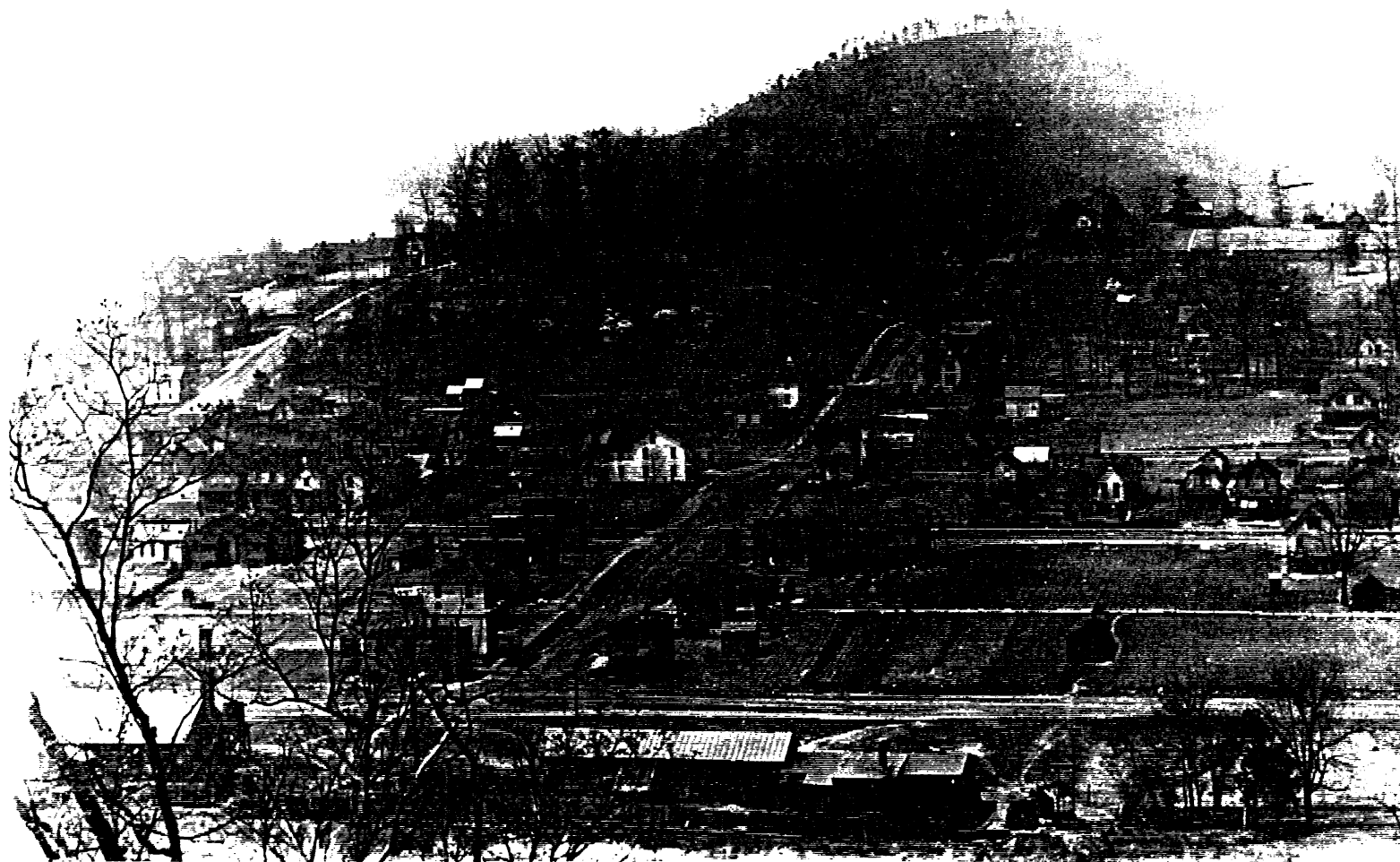


Figure 3.15. Development of the Harriman City Site

Source: Roane County Heritage Commission Photograph
Collection, Kingston, Tennessee.

electric power and water infrastructure; funded the construction of a public school building at a cost of more than \$6,000; constructed an exposition building to be used for public meetings; began construction of a public sewer system; and completed construction of an imposing company headquarters building.⁷⁸ The East Tennessee Land Company headquarters building was designed to be a symbol of the permanence and future prosperity which Harriman would attain. According to the company, it was:

...a substantial brick and stone structure, erected upon square reserved for public buildings...The four Norman towers of the office building give it a peculiar appearance of grace and strength combined. It is pronounced the finest building of any kind in Roane County, and the finest private office building in the State.⁷⁹

By 1892, the ETLC reported that nine industrial enterprises had located in Harriman, as the result of the activities of the Harriman Manufacturing Company. The largest of these was the Lookout Rolling Mills, which had formerly operated in Chattanooga, and employed 250 to 300 workers (Figures 3.16). Other production facilities included a furniture factory, a machine works, a brick works, an agricultural implement factory, a tack factory, and a tool works. Several of these had previously been in operation in other locations such as Knoxville, Chattanooga, Lancaster, Ohio, and Auburn, New York. The stock held by the Harriman Manufacturing Company in these

⁷⁸*City Directory of Harriman, Tennessee*, 30; *Harriman Advance*, March 1, 1890.

⁷⁹*Two Years of Harriman*, 48.



Figure 3.16. The Lookout Rolling Mills, Harriman, Tennessee, 1891
Source: Roane County Heritage Commission Photograph
Collection, Kingston, Tennessee.

industries in 1892 was \$268,000.⁸⁰ After two years of applying its development strategy, the ETLC seems to have been successful in building an industrial base in Harriman.

Interpreting Harriman

Also in 1892, the first and only Harriman city directory was produced. Its publisher, G.M. Connelly, proclaimed:

The upbuilding of a great city will undoubtedly be the result of the united labors of the community which so liberally supported the publication of Vol. I, of the Harriman City Directory. No town of double the population has ever exhibited such enterprise. The book is as complete in its arrangement as all large directories.

The East Tennessee Land Company at this time must have seen the city directory as just another symbol of Harriman's urban legitimacy. The "enterprise" of Harriman's early population and the ETLC in encouraging and cooperating with Mr. Connelly in the publication of the directory, besides lending credence to Harriman as an emerging industrial city, has served another purpose which they never could have foreseen. It provides the only data available to interpret the social landscape created by the East Tennessee Land Company in Harriman.

In 1892, the Harriman City Directory announced that Harriman's population had grown to 3,762 from one farm family in January of 1890. The directory reported the name, address, occupation, and race of each head-of-

⁸⁰Ibid., 72-76.

household in the city in 1892. Analysis of these data show that Harriman was a spatially-stratified urban settlement with respect to class and race in 1892. When the heads-of-household in 1892 Harriman are grouped into social classes according to occupation, a distinct residential pattern is evident (Figure 3.17).⁸¹ The central ridge area of the original city site was dominated by high-and-low-status white-collar residents; very few unskilled or skilled blue collar workers lived in this area. On the periphery of the original city site, somewhat lower in elevation adjacent to the industrial district, were the streets on which skilled blue-collar and low-status white-collar workers predominated. A small number of unskilled blue-collar headed families also lived in this peripheral area. By far the largest number of unskilled blue-collar heads lived in Walnut Hills and Oak View Additions to the west of the railroad tracks. Some skilled blue-collar workers lived in this section, as well as a small number of low white-collar workers. No high-status white-collar heads lived west of the railroad tracks.

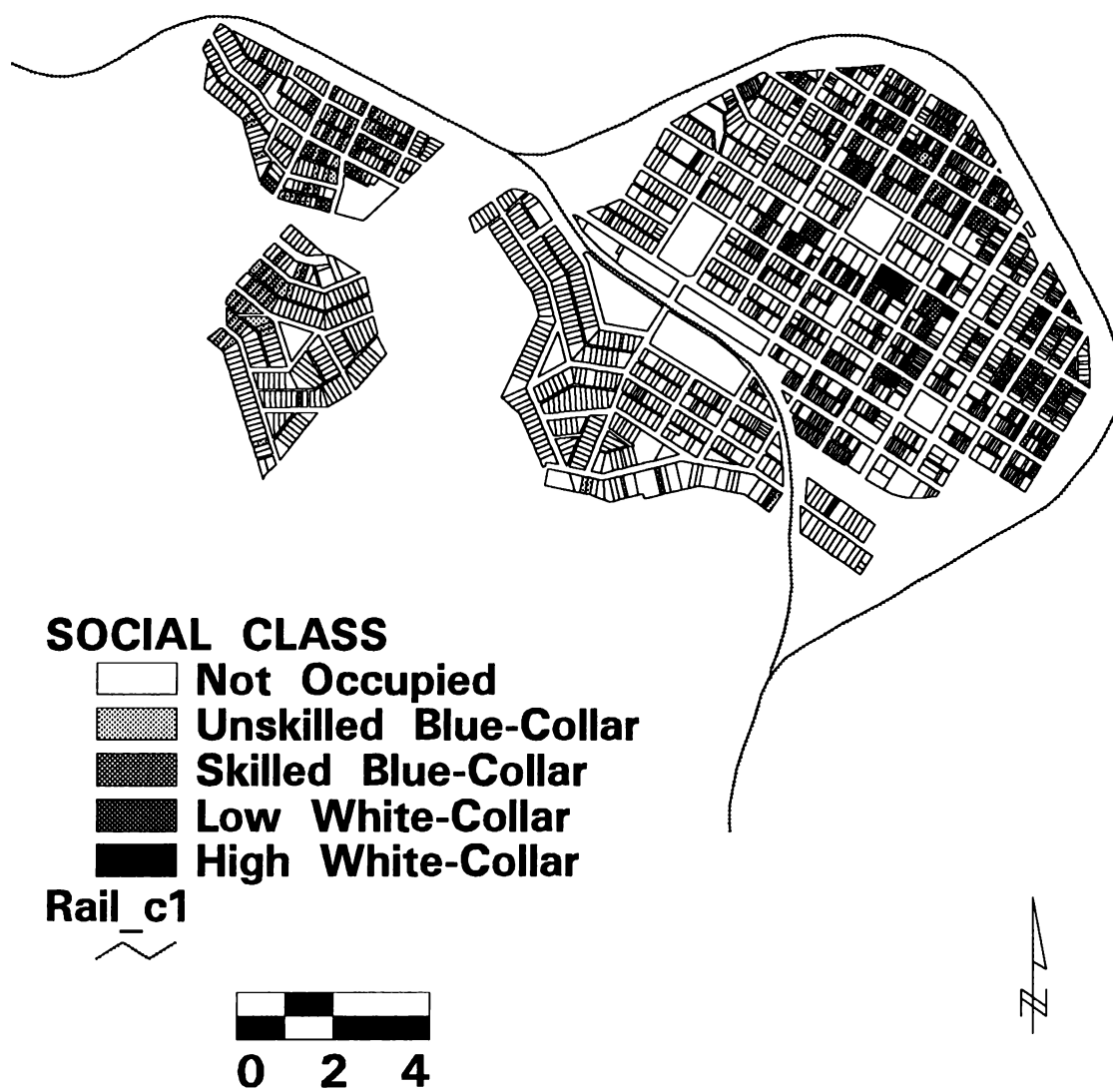
The visual perception of a residential separation of classes is supported by statistical testing. Two and three area Chi-Square analyses of 1892 Harriman show non-random proportional distributions of occupational class groups. The two area analysis was performed using the originally platted area east of the East Tennessee, Virginia and

⁸¹As in Chapter II, Zunz's occupational classification scheme was used to place residents in class groups.

Figure 3.17.

Occupational Class Map of Harriman, Tennessee, 1892

Data: Harriman City Directory, 1892; Sanborn Insurance
Maps, 1895.



Georgia tracks, and the later platted additions to the west of the tracks (Figure 3.18). The two-area analysis shows a significant overrepresentation of unskilled blue-collar heads in the area to the west of the tracks, and a significant underrepresentation of both the high and low white-collar class groups (Table 3.1).⁸² The results are reversed in the analysis of the original plat area, with an overrepresentation of low and high white-collar heads, and a marked underrepresentation of unskilled blue-collar workers (Table 3.2). These disparities translate into significant Chi-Square values for each area, indicating a non-random proportional spatial distribution of the class groups. The three area analysis was performed using the following areas: a core area of the original plat, bounded by Carter Street on the south and Clifty Street on the east; a peripheral area of the original plat, separated from the core area by the same streets; and an area to the west of the railroad tracks (Figure 3.19). A significant underrepresentation of unskilled and skilled blue-collar heads is evident in the core area, as is an overrepresentation of low and, especially, high white-collar workers (Table 3.3, 3.4). The most striking residential pattern in the periphery was a paucity of

⁸²Statements of over or under representation of class groups are made in reference to the number of given class group heads-of-household expected under an assumption of random proportional spatial distribution. This assumption is made when using the Chi-Square analysis.

Figure 3.18.

Study Areas for Two-Area Chi-Square Analysis

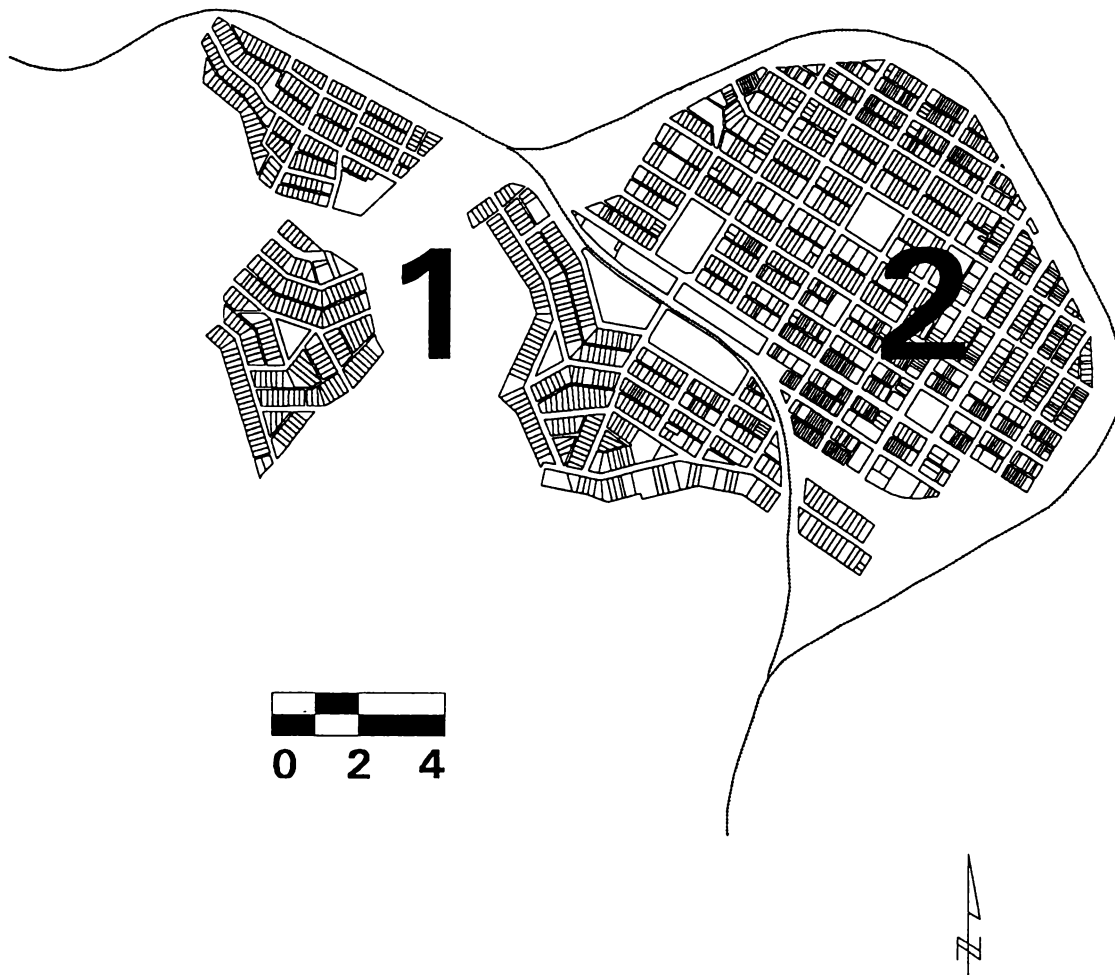


Table 3.1.

Chi-Square Calculation (2 Area Analysis)
(Area West of Tracks)

	Obs.	Exp.	(O-E)	(O-E) ²	(O-E) ² / E
unskilled blue-collar	64	26	38	1444	55.53
skilled blue-collar	37	40	3	9	.23
low white-collar	9	34	25	625	18.38
high white-collar	0	10	10	100	10.00

$$\chi^2 = 84.14$$

Table 3.2.

Chi-Square Calculation (2 Area Analysis)
(Main Plat)

	Obs.	Exp.	(O-E)	(O-E) ²	(O-E) ² / E
unskilled blue-collar	13	50	37	1369	27.38
skilled blue-collar	79	76	3	9	.19
low white-collar	90	65	25	625	9.61
high white-collar	28	19	9	81	4.26

$$\chi^2 = 41.44$$

Figure 3.19.

Study Areas for Three-Area Chi-Square Analysis

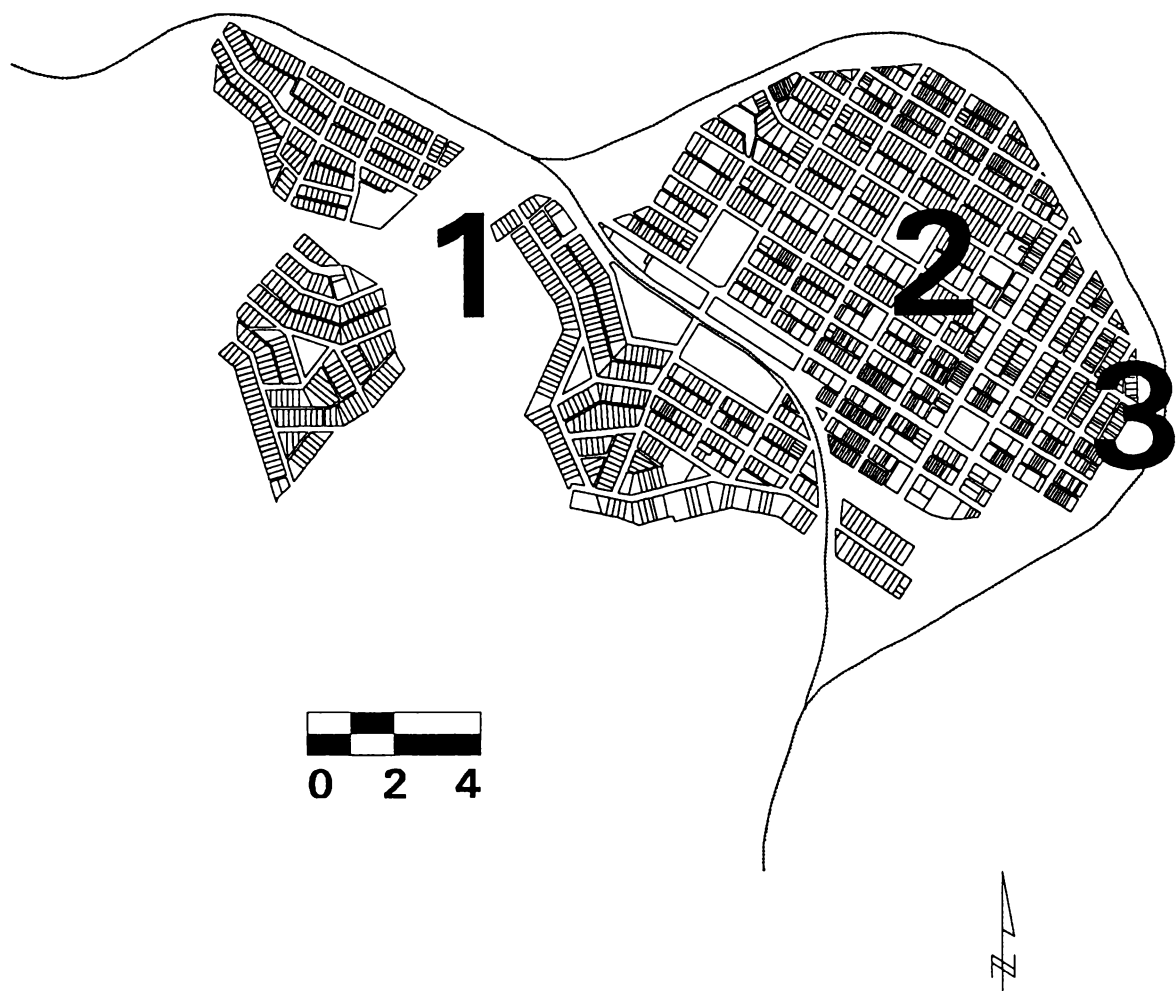


Table 3.3.

Chi-Square Calculation (3 Area Analysis)
(Area West of Tracks)

	Obs.	Exp.	(O-E)	(O-E) ²	(O-E) ² / E
unskilled blue-collar	64	26	38	1444	55.53
skilled blue-collar	37	40	3	9	.23
low white-collar	9	34	25	625	18.38
high white-collar	0	10	10	100	10.00

$$\chi^2 = 84.14$$

Table 3.4.

Chi-Square Calculation (3 Area Analysis)
(Core Area)

	Obs.	Exp.	(O-E)	(O-E) ²	(O-E) ² / E
unskilled blue-collar	3	21	18	324	15.43
skilled blue-collar	21	32	11	121	3.78
low white-collar	43	28	15	225	8.04
high white-collar	22	8	14	196	24.50

$$\chi^2 = 51.75$$

unskilled blue-collar heads compared to expectation (Table 3.5). Again, the Chi-Square value for each area was significant, indicating a nonrandom spatial distribution of class groups.

The spatial distribution of 1892 Harriman residents by race shows a pattern of almost complete residential segregation (Figure 3.20). The vast majority of African-Americans lived west of the railroad tracks in Oak View Addition.⁸³ In fact, there was only one instance of African-Americans living to the east of the tracks in the original city site, where a boarding house for single men was located. Thus, the ETLC's vision of Harriman as a racially segregated industrial city was indeed a reality in 1892.

Taking Harriman Apart

Although Harriman was spatially stratified to a large degree by class⁸⁴, the stratification was not uniform. An investigation of the spatial relationships between individual class groups provides insight into the type of urban community that Harriman was in 1892. Index of

⁸³The 1892 Harriman City Directory did not give exact street addresses for residents of Oak View Addition. It did, however, designate Oak View as a residence area for heads-of-household, which gave a general indication of residence location.

⁸⁴The grouping of heads-of-household into occupational class groups is also useful in discerning income earning levels of particular occupations based on previous research. This makes the analysis of spatial stratification by income group possible, in addition to class groups per se. See Zunz, *The Changing Face of Inequality*.

Table 3.5.

Chi-Square Calculation (3 Area Analysis)
(Peripheral Area)

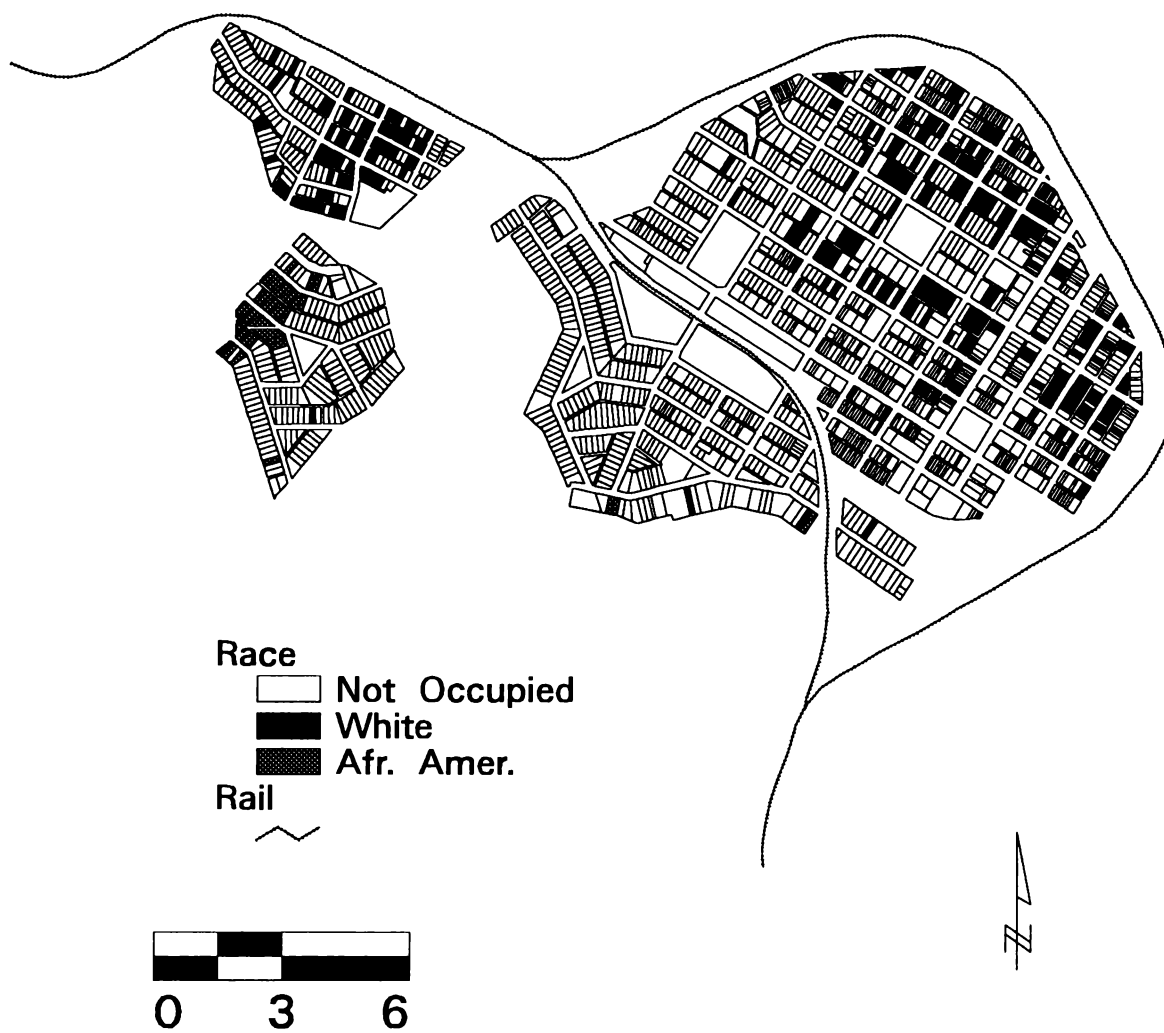
	Obs.	Exp.	(O-E)	(O-E) ²	(O-E) ² / E
unskilled blue-collar	10	29	19	361	12.45
skilled blue-collar	55	44	11	121	2.75
low white-collar	48	38	10	100	2.63
high white-collar	6	11	5	25	2.25

$$\chi^2 = 20.08$$

Figure 3.20.

Residence By Race, Harriman, Tennessee, 1892

Data: Harriman City Directory, 1892; Sanborn Insurance
Maps, 1895.



residential segregation analyses, utilizing the same areal divisions as in the Chi-Square tests, were conducted to explore these relationships (Tables 3.6, 3.7). Both the two and three area analyses show the residential distributions of low white-collar and skilled blue-collar workers to be most similar (16% and 28%, respectively), and the distributions of low white-collar and unskilled blue-collar to be most dissimilar (44% and 64%).⁸⁵ Overall, the distribution of unskilled blue-collar heads was the single most dissimilar when compared to those of the other class groups in both analyses. When compared to the residential distributions of high and low white-collar workers, the pattern of unskilled blue collar workers was very concentrated west of the railroad tracks (Figures 3.21, 3.22). There were very few cases in which unskilled blue-collar heads lived on the same block with white collar heads. The residential patterns of skilled and unskilled blue collar heads were more similar, especially in Walnut Hills Addition where there were numerous instances where households of these classes were on the same block and adjacent to each other (Figure 3.23). However, the most similar residential patterns were exhibited by skilled blue-collar heads and low white-collar heads, who often lived on the same blocks, especially on the periphery streets of the original site (Figure 3.24). This indicates

⁸⁵The index of residential segregation is a variation of the index of dissimilarity areal association measure. It is a measure of differences between areal associations and, therefore, an inverse measure of areal association.

Table 3.6.

Index of Residential Segregation by Occupation Class
(2 Area)

	1	2	3	4
1 unsk. blue-collar				
2 skil. blue-collar	28%			
3 low white-collar	44%	16%		
4 high white-collar	33%	30%	19%	

* percent value denotes the amount of one occupational class group that would have to be moved to to be integrated with another given occupational class group

Table 3.7.

Index of Residential Segregation by Occupation Class
(3 Area)

	1	2	3	4
1 unsk. blue-collar				
2 skil. blue-collar	41%			
3 low white-collar	64%	28%		
4 high white-collar	41%	37%	32%	

4

Figure 3.21.

Residential Patterns of Unskilled and High-White Collar
Heads-of-Household in Harriman, 1892

Data: Harriman City Directory, 1892; Sanborn Insurance
Maps, 1895.

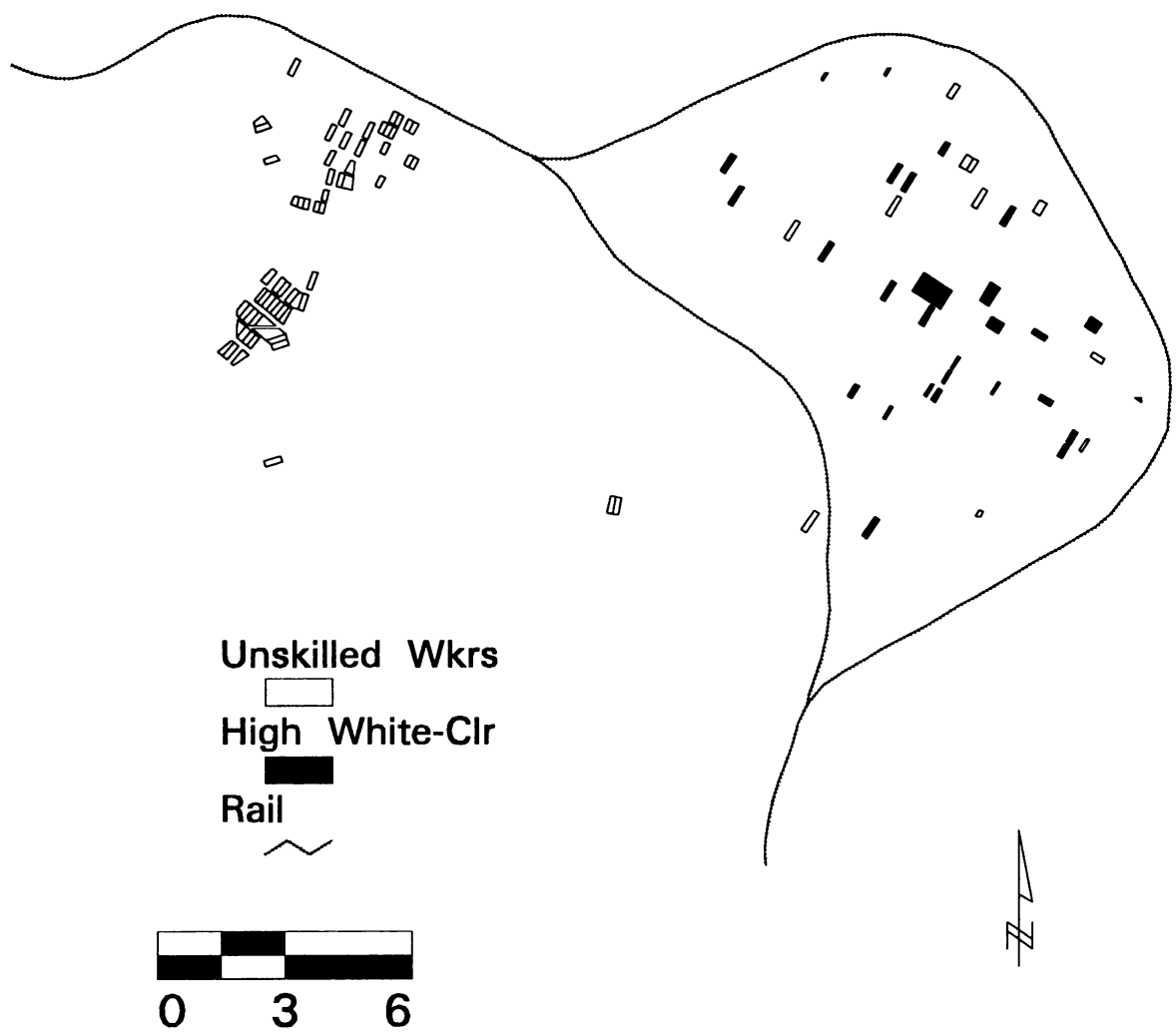


Figure 3.22.

Residential Patterns of Unskilled Workers and Low-White
Collar Heads-of-Household in Harriman, 1892

Data: Harriman City Directory, 1892; Sanborn Insurance
Maps, 1895.

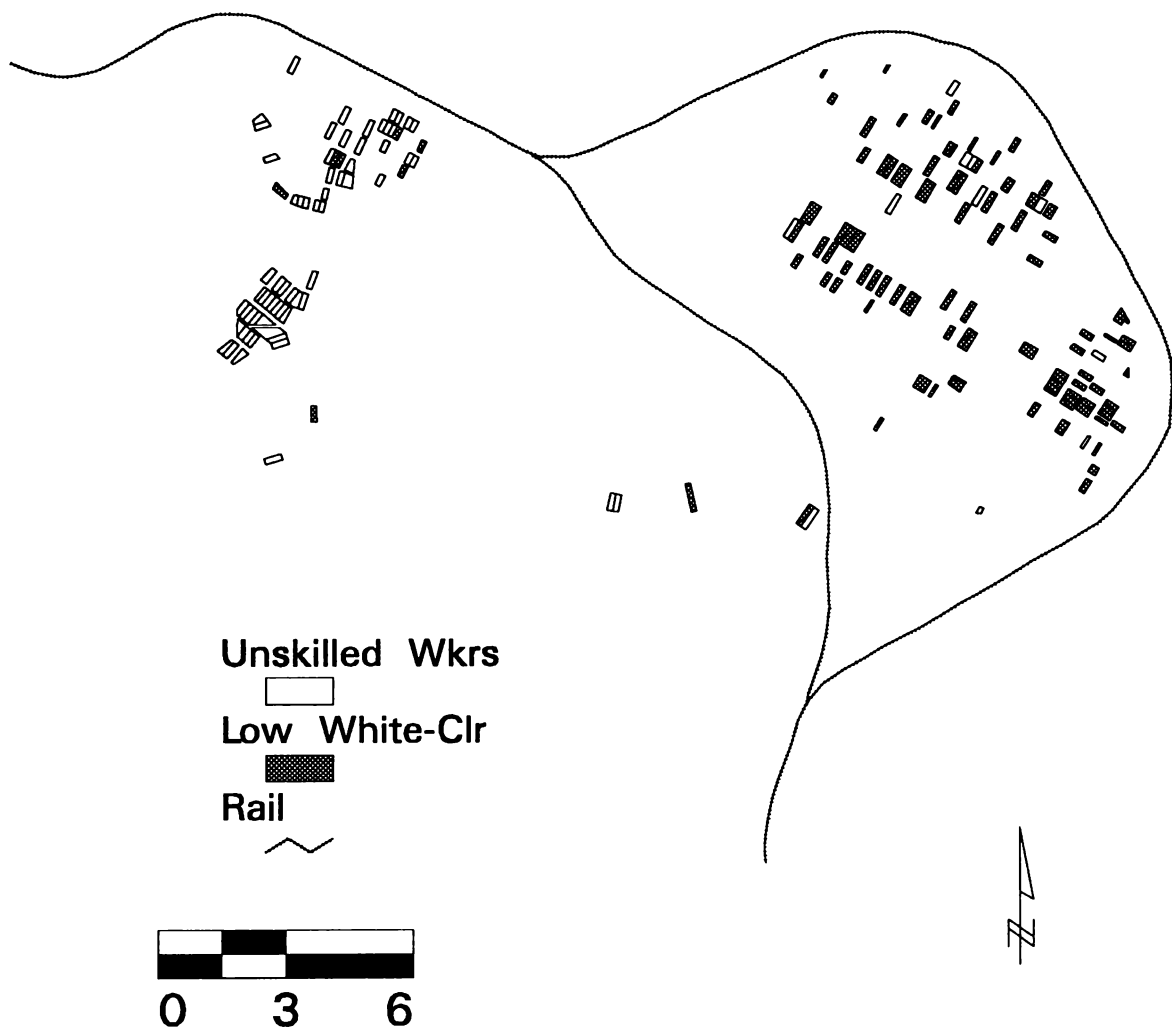


Figure 3.23.

Residential Patterns of Unskilled Workers and Skilled Blue-
Collar Heads-of-Household in Harriman, 1892

Data: Harriman City Directory, 1892; Sanborn Insurance
Maps, 1895.

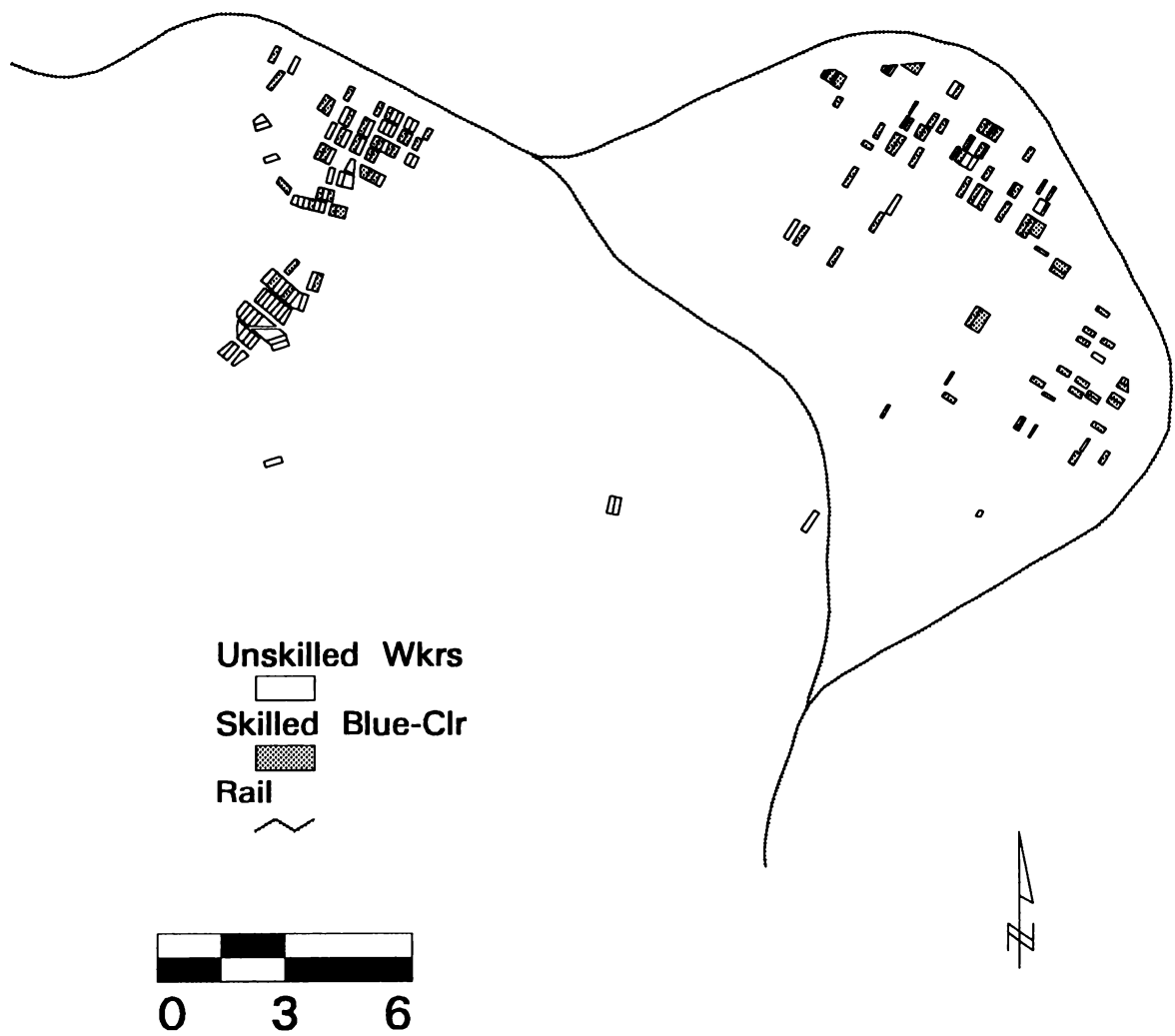
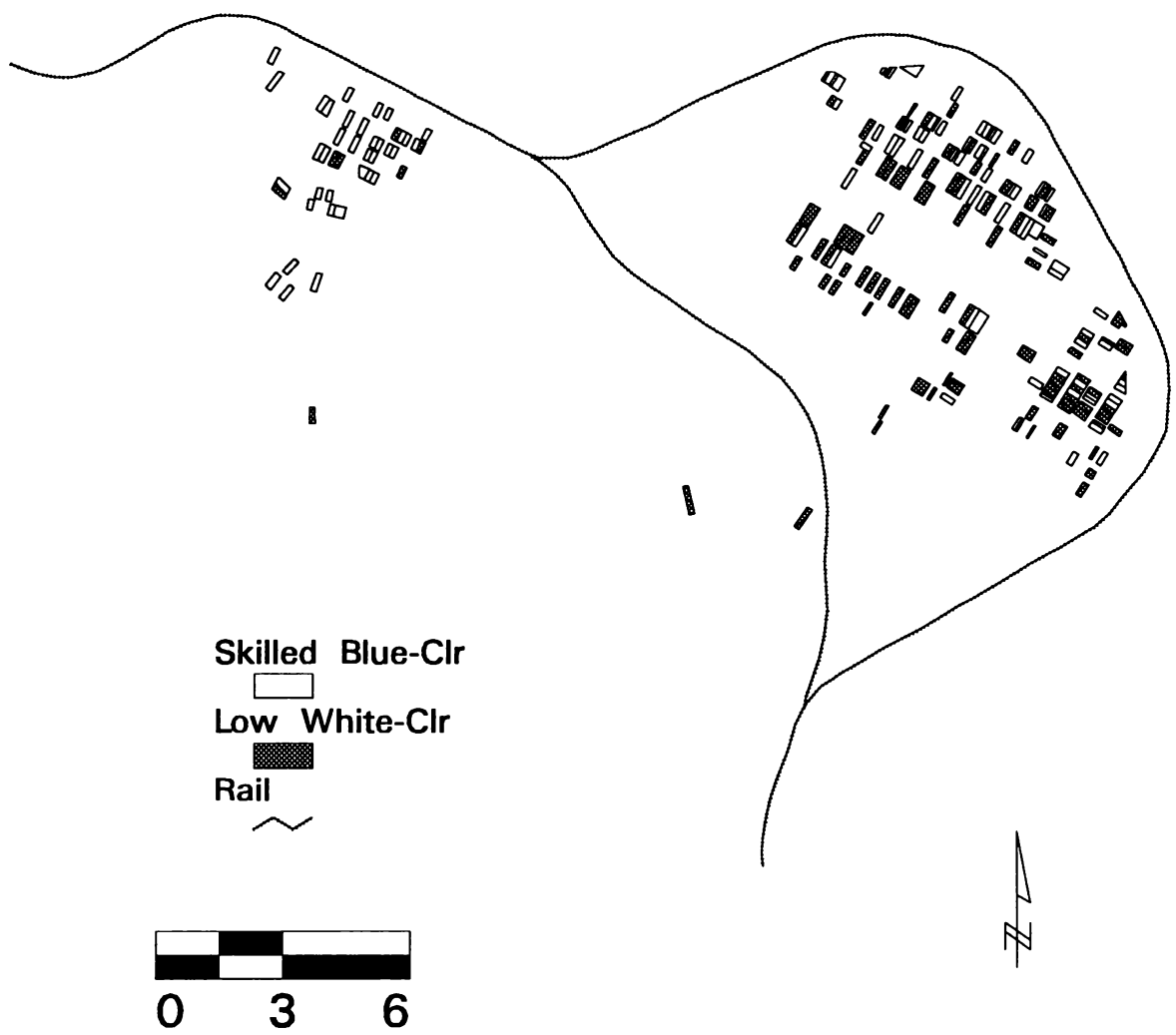


Figure 3.24.

Residential Patterns of Skilled Workers and Low White-
Collar Heads-of-Household in Harriman, 1892

Data: Harriman City Directory, 1892; Sanborn Insurance
Maps, 1895.



that these groups had similar earnings levels, enabling them to buy land in the same areas of the city. It also suggests that residential spatial stratification in Harriman was perhaps based more on income level than on class group.

The East Tennessee Land Company envisioned Harriman as an industrial center that would grow into an important regional city. The company's vision included sanitary and urban reform ideals, and temperance provisions that would make for a healthy and productive urban-industrial workforce. When the company was faced with decisions relating to the spatial layout of its model industrial city, it chose to create an urban landscape that was segmented by income and race. The ETLC's plan became reality through its administration of urban land sales, and the selective provision of infrastructure and capital. By 1892, Harriman's sociospatial landscape mirrored the company's perception of the industrial division of labor that should exist in a manufacturing center. Unskilled blue-collar workers and African-Americans, those who would provide the majority of industrial labor, were placed in their own separated enclaves. This imitated the spatial situation which had become dominant in northern cities with respect to foreigners and free blacks drawn by industrial employment opportunities since before the Civil War: segregation.⁸⁶ Thus, the East Tennessee Land Company had

⁸⁶C. Vann Woodward, *The Strange Career of Jim Crow* (New York: Oxford University Press, 1966), 17-21.

created a socially and racially segregated industrial city in the Upland South, years before a Jim Crow law was ever passed in the state of Tennessee.⁸⁷

The ETLC and the other land companies were not able to continue to operate at the large scale that they had begun their activities in the late 1880s. Their impressive development schemes were interrupted by circumstances in the early 1890s; grand plans were put on hold, modified, or abandoned as optimism gave way to economic depression.

⁸⁷The first Jim Crow law in Tennessee, involving streetcars, was not enacted until 1903. Laws pertaining to residential segregation by race were not initiated in the South until 1910. Ibid., 97-101.

Chapter IV

RESULTS OF INDUSTRIAL-URBAN DEVELOPMENT IN THE UPPER TENNESSEE RIVER VALLEY

A Change in the National Economic Situation: The Financial Panic of 1893

The economic downturn that affected the entire country during the early to mid 1890s impacted the land companies in the Upper Tennessee River Valley as well. The Panic of 1893, during which the New York Stock Exchange endured several severe drops, initiated a depression that lasted for more than three years. It was one of the most severe depressions in American history.

The decade of the 1890s opened with the nation approaching the end of a business-cycle expansion. Foreign trade had been favorable since the mid-1880s, and European capitalists had invested large amounts of capital in railroads, cattle ranching, and other business enterprises. Employment was increasing, output was growing, and general economic conditions were positive in the United States.¹

The generally positive conditions that existed in the country through 1892 belied significant harbingers of economic downturn. There was a significant recession in England in 1890, marked by the failure of the large and prestigious Baring Brothers investment banking house, a

¹Gilbert C. Fite and Jim E. Reese, *An Economic History of the United States* (Boston: Houghton Mifflin Company, 1973), 271-272.

pioneer merchant banking founded in 1763 which had long served as an intermediary between British investors and American entrepreneurs.² By November of 1890, the Baring House had overextended itself in Argentine speculation. Argentina collapsed, leaving Baring Brothers with a large amount of its resources locked up in now-worthless land and securities. Although the Bank of England bailed Barings Brothers out, the near-failure of the country's foremost banking house shocked European investors. This caused a run on gold by English investors, many of whom liquidated their stock holdings in American companies.³ The result was a net loss of \$68 million in gold exported from the United States in 1890.⁴

Another destabilizing situation by 1890 was the struggle for bimetallism. Congress had passed a measure in 1873 that discontinued the further minting of the standard silver dollar.⁵ The United States had also returned to a policy of specie payments in 1879, following passage of the Resumption Act by Congress in 1875.⁶ The result of these

²Joseph Wechsburg, *The Merchant Bankers* (Boston: Little, Brown & Company, 1966), 99-102.

³Richard Kellett, *The Merchant Banking Arena* (New York: St. Martin's Press, 1967), 118-123.

⁴Harry N. Scheiber, Harold G. Vatter, and Harold U. Faulkner, *American Economic History* (New York: Harper & Row Publishers, 1976), 307.

⁵In 1873, the silver dollar was worth \$1.02 in gold and it was no longer profitable to coin it. Silver was scarce at this time and very little had been presented to the mints for coining. Congress's action was not highly controversial at this time, and passage of the act was seen as merely as legislative recognition that silver dollars were not being coined.

⁶At the close of the Civil War, the United States was suffering from the effects of inflationary methods of war finance. Paper money had been issued to the extent of over \$400 million, and in addition a part of the war effort had been financed through sales of government

two bills was a contraction of the currency supply in the United States. Events of the next few years would serve to ally the two constituencies alienated by these policies: the inflationists and the silver interests. Inflationists were those who were opposed to the devaluation of currency and credit contraction for a variety of reasons. Debtor farmers of the Western states fighting against declining foodstuff prices and manufacturers eager for cheap money to finance expansion and pay off previously incurred long-term debt were the principal inflationist groups. The silver interests became active in the mid-1870s, when the situation with regard to silver changed rapidly. During the early to mid 1870s, Germany, Holland, Sweden and Norway adopted the gold standard and the Latin Monetary Union (France, Switzerland, Belgium, Italy, and Greece) limited the coinage of silver. These developments in combination with the discovery of large silver deposits in Nevada created a glut of bullion on the market, causing prices to drop sharply.

American silver interests reacted to these price drops, becoming increasingly politically active and calling for the reinstatement of silver coinage in the United

securities to national banks. In the early aftermath of the war, the general sentiment in Washington was that paper money should be retired by the federal government in order to permit a return to price and income levels of the pre-war gold standard. This sentiment was soon challenged, however, led by farmers fighting against declining foodstuff prices and manufacturers eager for cheap money to finance expansion and pay off previously incurred long-term debt. This struggle delayed the passage of the Resumption Act until 1875, when the "inflationists" were temporarily defeated.

States to increase the demand for silver and raise prices. Political pressure from the inflationists resulted in the passage of the Bland-Allison Act of 1878, which provided for the purchase of not less than two million dollars and not more than four million dollars a month worth of silver bullion to be coined into silver dollars.⁷ To the disappointment of inflationists, however, the Bland-Allison Act failed to halt the decline in the value of silver or the downward trend of prices during the twelve years that it was in force. Because of this, the inflationists kept up their pressure for governmental purchase of more silver, and in 1890 were successful in lobbying for the passage of the Sherman Silver Act. The act required the Secretary of the Treasury to purchase 4.5 million ounces of silver bullion a month, and in payment for it issue Treasury notes redeemable in either gold or silver. The silver purchased under this act was almost the entire output of American mines, and approximately double that required by the Bland-Allison Act.⁸

By the early 1890s, the silver movement and Europe's general economic downturn threatened the maintenance of the gold standard in the United States. The amount of silver to be purchased under the Sherman Act was too large to be readily absorbed by the United States Treasury, as notes issued for silver were more often than not redeemed for

⁷Kenyon E. Poole, "Money and Banking, 1865-1919" in Harold F. Williamson, Ed., *The Growth of the American Economy* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1951), 554-555.

⁸*American Economic History*, 305-306.

gold at a later date. Through this process, \$156 million in Treasury Notes was added to the national money supply between 1890 and 1893, leading to a significant loss of gold from the national reserve over this period. At the same time, skittish European investors were withdrawing their capital from American companies at a heightened pace as their confidence in the American economy and the dollar waned. In 1893 alone, the United States suffered a net loss of \$87 million in gold exported.⁹

The dwindling supply of gold caused by the Sherman Silver Act and foreign withdrawal of capital from the United States had dire consequences. In 1893, for the first time since the reinstitution of the gold standard, national gold reserves dropped below the traditional \$100 million which many people regarded as the minimum treasury reserve. The breaking of the \$100 million reserve barrier began speculation that the gold reserve was in jeopardy, causing trepidation among businessmen and investors who regarded maintenance of the gold standard as paramount. As this speculation continued, the net result was a general loss of confidence in the soundness of the dollar.¹⁰

During the early months of 1893 there was a sharp downward trend in stock prices on the New York Stock Exchange, as a rush ensued to dispose of stocks, bonds, and other securities. Loss of confidence in the monetary system also produced runs on banks, especially in the South

⁹Ibid., 307.

¹⁰*An Economic History of the United States*, 272.

and West. In turn, these banks called on larger eastern financial institutions for their reserves. These demands strained the capital reserves of these foremost financial institutions, creating a situation in which loans became almost impossible to obtain and the hoarding of gold and currency was common.¹¹

Large-scale business failure characterized the economic downturn in the United States in 1893. Two of the most troubling examples of this were the Philadelphia & Reading Railroad, which went into receivership in February of 1893, and the National Cordage Company which followed in May. These corporations were among the foremost businesses in the United States, and their failures did not bode well for the national economy. In fact, more than 15,000 commercial failures involving liabilities of \$346.8 million occurred during 1893. In addition, more than 600 banking institutions and 74 railroad corporations failed during the same year. The Panic of 1893 was followed by three years of economic depression, during which business failures were accompanied by falling agricultural prices, high unemployment levels, and declining industrial production. It wasn't until the latter part of 1896 that the depression began to break, as the Silverites were defeated and a shift

¹¹Harold M. Somers, "The Performance of the American Economy, 1866-1918" in Harold F. Williamson, Ed., *The Growth of the American Economy* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1951), 652-653.

in the balance of foreign trade stemmed the outflow of gold from the national reserve.¹²

Boom Turns to Bust: National Depression and the
Land Companies of the Upper Tennessee River Valley

The economic depression that was under way by 1893 had profound effects on companies operating in the Upper Tennessee River Valley. In fact, the only large industry-related company in the region that remained in its pre-depression form by 1896 was the Roane Iron Company. The mid-1890s held failure and reorganization for the others, ended the large-scale infusion of capital into the region that had characterized the late 1880s and early 1890s.

The first casualty was the Cardiff Coal and Iron Company. The Cardiff Company, begun with such bright aspirations, soon found the economic conditions of the early 1890s to be prohibitive. During its land sale in April of 1890, the CCIC sold over a million dollars worth of property in its city site. This total was never collected. Buyers were only required to pay one-third of the total purchase price at the auction, with the other two-thirds due in six months and one year, respectively. As economic conditions grew steadily worse during the year following the sale, a significant number of property buyers defaulted on their installments. At the same time, the

¹²*American Economic History*, 306-307; *An Economic History of the United States*, 272.

CCIC's creditors were demanding payment on the large loans which the Company had taken out to purchase land. The change in the national and regional economic environment left the CCIC in a bad situation. During its early period of activity in 1889 and early 1890, conditions were positive, and the Company had acted on the assumption that these conditions would continue. By mid-1891 it was obvious, however, that investors were retaining their capital in times of increasing uncertainty. This left the CCIC with bills and no money to pay them with. Its plan of paying off its debts with the proceeds of continued land sales was no longer viable. The company was sued by land buyers and creditors during 1891. The former sued for improvements and infrastructure not provided to the city site as promised, the latter for loan payments not made on time. The CCIC went into receivership in June of 1891.

These events limited Cardiff's future. The CCIC had begun just early enough to appear to be a profitable venture, but too late to develop a solid base before the economic downturn. Most of the company's grand plans were stopped by the receivership. This created more suits by investors and land purchasers who felt that the company had not made good on its pledge to "build" the town and provide it with certain infrastructure (a blast furnace, graded and paved streets, water and sewer systems, a hotel). Charles Haley's description of events was representative of the opinions held by Cardiff investors:

Of the large amount of money agreed to be expended...only a small amount was spent, just enough to fool the bidders at the public sale in April, and to cajole the buyers into paying the six month notes maturing in September and October following. Then the whole work was abandoned. The hotel which had been partially constructed was left uncovered and exposed to the elements, the streets washed into gullies, the trenches for the furnace filled up whole fraud and sham has been blown up and dissipated.¹³

Although Haley was no doubt biased about the initial intentions of the Cardiff company, he accurately described the situation in the town in 1892. Most of the infrastructure that the CCIC was supposed to have built was not completed before the company's financial troubles in mid-1891. This led to the abandonment of several projects and the completion of few. Because the development and growth of the city was predicated in large part upon projects initiated by the company, this situation made its future tenuous.

Events associated with the Panic of 1893 proved to be the end of the CCIC and the City of Cardiff. The company had survived its two years in receivership mainly on the strength of proceeds from the sale of coal mined on its lands to iron production facilities in East Tennessee. The effects of the Panic caused many of these facilities to decrease production or shut down completely, creating a corresponding reduction in demand for coal. This was devastating to the CCIC, since income from land and stock sales had been almost nonexistent since mid-1891. The company declared bankruptcy and discontinued operations in

¹³Haley and Ingram vs. Henry C. Young, Complainant Report, 12-13.

the Upper Tennessee River Valley in 1893. A Chattanooga publication described Cardiff in 1895:

...the collapse came, and today the town does not contain twenty people. The only signs of it that can be seen are a few deserted stores, rain-washed streets, overgrown with grass and weeds and the electric light poles which ornament the vacant fields.¹⁴

In the end, all of the ambitious plans made for Cardiff were for naught, as the planned city did not last long enough even to rate a mention in the federal census of 1900.

The East Tennessee Land Company and the City of Harriman also were adversely impacted by the economic conditions of the early 1890s. The ETLC and its planned city had benefitted from an early start in the region (April 1889), and because of this had been able to complete several projects associated with the development of Harriman by 1893 (the ETLC Building, several business buildings along Roane Street, the Belt Line Railway, street grading on the city site, among others). Between 1890 and 1892, the company was fairly successful in obtaining capital through its land sale (held in early 1890) and the sale of stock. A decision made in mid-1890 to raise additional money for the development by obtaining one million dollars worth of first mortgage bonds through the Central Trust Company of New York was one the ETLC would regret in the years to come, however. The company used this money to finance improvements for the City of

¹⁴Chattanooga *Tradesman*, XXXII (1895), 116.

Harriman, and to subsidize the establishment of its satellite companies and new industries and businesses. Unfortunately, neither the satellite companies or the new industries and businesses earned sufficient profits in the ensuing years to pay even the interest on this large mortgage. By late 1892, the ETLC found it very difficult to meet payments on the loan.

In September of 1892, a program was initiated called "The Million Dollar Plan" which was an attempt to recapitalize the company through the issuance of first-lien and second-lien preferred stock. The goal of the plan was to sell this stock, use the proceeds to pay off the Central Trust bonds, and return the company to a sound financial situation. The company declared the plan an overwhelming success in January of 1893, when it informed the public that it had received subscriptions for the entire one million dollar amount. The account of this announcement in the local newspaper indicates the amount of importance attributed to the plan:

The Directors have satisfied themselves that the subscriptions to the new stock are bonified and can be relied upon. They are further satisfied that the One Million of Dollars which these will yield will meet the entire bonded and floating indebtedness on the Company, and relieve its immense properties from incumbrance...the success of the Million Plan is immediate, the effects of it will be increasingly shown, and the final results should tell wonderfully for the benefit of Harriman and all concerned in its future¹⁵

The events of 1893, however, dampened enthusiasm for the Million Dollar Plan. Although the stock offered by the

¹⁵Harriman *Daily Advance*, January 27, 1893.

ETLC had technically been fully subscribed, the subscribers had not paid the money to the company by mid-1893. This is when the most extreme drop in the stock market took place, and when financial institutions were under the most demand for capital. The Central Trust Company demanded payment from the ETLC, and when it was not forthcoming, filed suit in federal court. This resulted in the company's filing for bankruptcy in November of 1893. Receivers over the next four years sold off the ETLC's assets, in an effort to recoup any money that could be paid to creditors. Thus 1893 marked the end of significant development activities by the ETLC in the Upper Tennessee River Valley.

The City of Harriman was able to survive, however, due to its strong start and the determination of its predominantly Prohibitionist population. Although many industries shut down during the Panic, some, including the railroads operated throughout the depression. Remaining residents also initiated other institutions during the depression period that brought activity to Harriman. Prominent among these was the founding of the American Temperance University in 1894, which was housed in the former ETLC building. In the ensuing years, as many as 250 students attended the University, to learn in an environment free from "smoking, gambling, theft, lying, profanity, obscenity and drunkenness."¹⁶

¹⁶Louise Davis, "Town Built for Teetotalers," *The Tennessean Magazine*, Sunday, November 19, 1972, 16-18.

Lenoir City was the latest of the land company developments to be initiated, and because of this did not find itself in as dire a debt situation as its predecessors. The Lenoir City Company was not incorporated until April of 1890 and its stock and land sale was not held until September of the same year. This later start proved important because the LCC was able to perceive impending economic conditions to some extent, and avoid larger-scale speculative spending and debt accumulation. By June of 1892, however, the company was experiencing problems paying on the debt that it had accrued. Sales of property had been much slower than expected, and the board of directors attributed this to "the unusual and stringent conditions of the money market."¹⁷ Charles McClung, a prominent Knoxville businessman, came to the company's aid and paid the debt, effectively removing the lein from its property.¹⁸ The situation did not improve in the next six months, however. Company records indicate that by November of 1892, the LCC had sold only 144 of the 3,448 lots platted in Lenoir City.¹⁹

Lenoir City ultimately survived the depression of the 1890s because of the work and dedication of E.J. Sanford and Charles McGhee. Sanford, the originator of the Lenoir City scheme, took responsibility for overseeing many of the early activities of the company. He, more than anyone,

¹⁷Lenoir City Company, *Board of Directors Minutes*, June 1, 1892.

¹⁸Ibid.

¹⁹Ibid., November 12, 1892.

worked to make the development successful in an uncertain economic environment. His dedication to the project was reflected in a letter to his friend McGhee in 1891:

I have not yet lost faith in Lenoir, and I feel it will all work out yet, although as I stated before I have had more disappointments in it than in than any other business attempt in my life.²⁰

Besides his financial influence, McGhee spent considerable time attempting to attract industry to Lenoir City. His biggest success, and probably the savior of the development during the 1890s, was the Lenoir Car Company. McGhee convinced J.H. Bass, an experienced rail car producer from Fort Wayne, Indiana, to locate a new facility in Lenoir City. He then went to the board of the Lenoir City Company and made a strong suggestion that a fifty acre tract of land adjacent to the ETV&G mainline be given to the Car Company.²¹ The Lenoir Car Company immediately became the major employer in the town, and remained so for the next thirty years.

Each of the land companies ceased large-scale operations after the economic downturn of 1893. The late 1880s and early 1890s had been a watershed for investment because of the positive national economic situation, and the corresponding availability of development capital. In the years following the Panic of 1893, the American economy was unstable at best, and financial institutions and investors were skittish about any type of speculative

²⁰E.J. Sanford to C.M. McGhee, November 27, 1891.

²¹Lenoir City Company, *Board of Directors Minutes*, March 13, 1893.

venture. In addition, by the mid-to-late 1890s it had become apparent that the characteristics of the local iron ore deposits would hinder the region in becoming a major iron and steel production center. Thus, the land company investment era ended in the Upper Tennessee River Valley.

The Roane Iron Company remained in business the longest of any of the subject companies in the Upper Tennessee River Valley. It managed to produce pig iron at Rockwood continuously through the depression of the mid-1890s, although production slowdowns took place. Even after the depression had ended, however, Rockwood did not become a major regional production center for iron or steel. The reason for this was articulated by Hiram Chamberlain in his October, 1887 letter to Charles McGhee when he stated "I think it better that we have some foreign iron very low in phosphorous in our mixture."²² Chamberlain knew that the high phosphorous iron ore in the Rockwood area could not make high quality steel. This was a significant problem for Roane Iron in the ensuing decades because it precluded the company from making cost-competitive iron and steel products. Theoretically, it could be done, but only with iron ore from another source with a lower phosphorous content. Although the company experimented with using outside iron ore, each of these attempts was abandoned because of prohibitive cost. Because it could not produce for the emerging market for steel

²²Chamberlain to McGhee, October 25, 1887.

products, the Roane Iron Company remained a small regional producer, and Rockwood a small industrial town in the Upper Tennessee River Valley. The potential that Hiram Chamberlain and James Wilder dreamed of when they began their endeavor, was realized at a place farther down the Tennessee Valley -- Birmingham, Alabama.²³

The Roane Iron Company continued operations until 1929. The company experienced a period of prosperity during World War I, when iron products were needed for the war effort. This demand disappeared after the war, however. Freight rates on the transport of its pig iron to the northeast rose rapidly, decreasing competitiveness. The southern iron market was dominated by production at Birmingham, which was higher-quality and lower-cost. Roane Iron endured several mine disasters during the mid-1920s, which resulted in lost lives and worker compensation payments of more than \$200,000 (over one-fifth of the total capitalization of the company). These circumstances, in concert with plunging iron market prices in 1929, caused the company to suspend operations for good in January of 1930.²⁴

²³One of the major advantages of the Birmingham production site was the availability of large deposits of *low phosphorus* iron ore, which was favorable for steel production.

²⁴William Howard Moore, "Rockwood: A Prototype of the New South," M.A. Thesis, University of Tennessee, Knoxville, 1965.

The Results of Industrial Capital Investment in the
Upper Tennessee River Valley: The Modification of Economic
and Settlement Patterns in the Early Twentieth Century

The settlement patterns which had emerged from the agricultural economy in the Upper Tennessee River Valley prior to 1860 were altered by industrial capital investment during the study period. In 1880, twelve years after the Roane Iron Company began operation, Rockwood was the most populated urban settlement in the region (Table 4.1). By 1900, Harriman supplanted Rockwood as the largest city, and both were more than triple the size of the river towns of Loudon and Kingston. These two periods of capital investment etched a completely new settlement structure in the region in less than thirty years.

The transformation of the economy of the Upper Tennessee River Valley between 1870 and 1900 was also drastic. In 1870, the value of farm products in the study area was more than two and a half times that of manufactured products (Tables 4.2, 4.3). This situation persisted through 1880, although the ratio of the value of agricultural products to manufactured products decreased. In 1890, the value of manufactured products exceeded the value of agricultural products for the first time. This was mostly the product of investment by the Roane Iron Company, as the land companies were just beginning operation when the census was conducted. By 1900, a major

Table 4.1.

Population of Upper Tennessee River Valley
Towns, 1860-1900, 1990.

Town	1860	1870	1880	1890	1900	1990
Cardiff	--	--	--	430	--	--
Harriman	--	--	--	716	3,442	7,119
Lenoir City	--	--	--	*	*	6,147
Loudon	*	*	832	942	875	4,026
Kingston	307	739	858	*	548	4,552
Rockwood	--	649	1,011	2,305	2,899	5,348

* Not Available

Source: U.S. Department of Commerce, Bureau of the Census, Ninth Census, 1870: Population Manuscripts; Tenth Census, 1880: Population Manuscripts, Tennessee, Roane County; Compendium of the Ninth Census, 1870; Compendium of the Tenth Census, 1880; Compendium of the Eleventh Census, 1890; Compendium of the Twelveth Census, 1900; Twenty-First Census, Population, Tennessee.

Table 4.2.

Industrial Production in the Upper Tennessee
River Valley, 1870-1900.

<u>County</u>	<u>1870</u>			<u>1880</u>		
	<u>Capital</u> <u>Invested</u>	<u>Value of</u> <u>Products</u>	<u>Number</u> <u>Employed</u>	<u>Capital</u> <u>Invested</u>	<u>Value of</u> <u>Products</u>	<u>Number</u> <u>Employed</u>
Loudon	--	--	--	\$157,100	\$254,730	83
Roane	\$162,750	\$235,321	160	\$774,250	\$327,082	455
TOTAL	\$162,750	\$235,321	160	\$931,350	\$531,812	538

<u>County</u>	<u>1890</u>			<u>1900</u>		
	<u>Capital</u> <u>Invested</u>	<u>Value of</u> <u>Products</u>	<u>Number</u> <u>Employed</u>	<u>Capital</u> <u>Invested</u>	<u>Value of</u> <u>Products</u>	<u>Number</u> <u>Employed</u>
Loudon	\$77,089	\$99,199	118	\$873,936	\$921,489	311
Roane	\$671,370	\$669,212	388	\$1,449,838	\$1,511,721	600
TOTAL	\$748,479	\$768,411	506	\$2,323,774	\$2,433,240	911

Source: U.S. Department of Commerce, Bureau of the Census,
Ninth Census, 1870: Manufactures, Tennessee; Tenth
Census, 1880: Manufactures, Tennessee; Eleventh
Census, 1890: Manufactures, Tennessee; Twelveth
Census, 1900: Manufactures, Tennessee.

Table 4.3.

Agricultural Production in the Upper Tennessee
River Valley, 1870-1900.

County	<u>1870</u>	<u>1880</u>	<u>1890</u>	<u>1900</u>
	Value of Farm Prod.	Value of Farm Prod.	Value of Farm Prod.	Value of Farm Prod.
Loudon	--	\$368,420	\$348,900	\$514,591
Roane	\$619,768	\$512,937	\$341,490	\$678,831
TOTAL	\$619,768	\$881,357	\$650,390	\$1,193,422

Source: U.S. Department of Commerce, Bureau of the Census,
Ninth Census, 1870: Agriculture, Tennessee; Tenth
Census, 1880: Agriculture, Tennessee; Eleventh
Census, 1890: Agriculture, Tennessee; Twelveth
Census, 1900: Agriculture, Tennessee.

economic shift was evident, as the value of manufactured products exceeded \$2.4 million, and more than doubled the value of agricultural products. From 1870 to 1900, industrial employment increased more than five-fold from 160 workers to 911 in the study region (Table 4.2).

The Geography of Capital Flight:
The Upper Tennessee River Valley in the Twentieth Century

The introduction of industrial capital into the Upper Tennessee River Valley during the period between the close of the Civil War and the turn-of-the-century created rapid and intense change in the region's landscape, economy, and settlement pattern. The withdrawal of much of this capital in the years after 1893 also had ramifications for the region's future. The Upper Tennessee River Valley became a "played out" region; land companies ceased or slowed operations, proposed production facilities were never built, development schemes ended abruptly. The economy of the region in this post-depression period became oriented towards activities that were labor intensive, as opposed to capital intensive.

Small-scale industry employed significant numbers of workers in the region following the demise of the land companies. In Harriman, several of the smaller companies initiated during the land company era (wood products and agricultural implements) remained in operation. In Lenoir

City, the Lenoir Car Company, a producer of railroad passenger cars and equipment, became the major employer for forty years after its establishment in 1893. Farther down the valley, the City of Rockwood continues to be sustained largely by the Roane Iron Company.

During the first two decades of the twentieth century, the hosiery and textile industries became increasingly important in the Upper Tennessee River Valley. In 1905, a local businessman named J.F. Tarwater established the Rockwood Hosiery Mills in Rockwood, Tennessee.²⁵ Seven years later, in 1912, the Harriman Hosiery Company was incorporated in Harriman by Taewater and his associates.²⁶ The hosiery industry was labor intensive, and both mills employed primarily women. This type of small-scale, low-wage industrial activity would prove to be important to the region's future, as the hosiery mills became the largest employers in these cities by the 1930s.

In rural areas of the Upper Tennessee River Valley, mixed farming, mining, and lumbering were the dominant activities. Farming had been important in the river bottomland areas of the region since its initial settlement. Coal mining and logging were initiated during the industrial and corporate capital phases, and continued as relatively small quantities of these raw materials were transported to production areas outside of the region. In the twentieth century, the Upper Tennessee River Valley

²⁵Moore, "Rockwood," 45-46.

²⁶Pulliam, *Harriman*, 501-503.

increasingly became a resource exporting area rather than a production area.

The Tennessee Valley Authority (TVA) was established by the United States government in 1933, was charged with "the unified development of the [Tennessee] river, its tributaries, and the whole watershed area."²⁷ Specifically, TVA was to undertake policies that would: improve the navigability and provide flood control on the Tennessee River; provide for the reforestation and proper use of marginal lands in the Tennessee Valley; facilitate agricultural and industrial development in the Valley; and create a corporation for the operation of government properties at or near Muscle Shoals, Alabama.²⁸ As part of its development program, the Tennessee Valley Authority built two dams in the Upper Tennessee River Valley -- Watts Bar Dam and Fort Loudon Dam. Watts Bar Dam was constructed approximately ten miles downstream from Rockwood, while the Fort Loudon project was located at Lenoir City. The short-term effects of this federal investment were increased availability of jobs, an influx of population and a concomitant increase in demand for goods and services, and an economic boost for the region. This boom period only lasted a few years, however, as construction jobs ended and TVA technical and support staff left the region. The dams did make the Tennessee River navigable during the entire course of the year, and provide flood control. However, the

²⁷Govan and Livingood, *The Chattanooga Country*, 450.

²⁸*Ibid.*

long-term impact on the overall economy of the Upper Tennessee River Valley was negligible.

In the modern era, the Upper Tennessee River Valley is a relatively isolated region. Thousands of people per day drive through it on Routes 40 and 75, yet very few ever stop within its boundaries. Little has changed since 1940, because little capital has been invested in the region in the last fifty years. The Upper Tennessee River Valley of the 1990s is a region shaped by small-scale, local capital. Rockwood, Harriman, and Lenoir City -- the cities established during the latter nineteenth century -- are the regional central places in 1995. They possess characteristics of typical American small towns -- such as discount stores and fast food restaurants -- but remain as relicts from a time when the Upper Tennessee River Valley was an attractive region for industrial capital investment. They remind us of the adaptability of capitalism -- how capital investment can be diverted from one place to other.

Chapter V

SUMMARY AND CONCLUSIONS

Summary

This study has detailed the primacy of outside investment in the economic and settlement pattern changes which took place in the Upper Tennessee River Valley during the period between 1865 and 1910. The analysis has revealed two distinct periods of advanced capitalist investment: the first between the close of the Civil War and 1885, during which the Roane Iron Company began operation in the region; and, a second which encompassed the late 1880s and early 1890s, during which three land companies initiated development activities.

At the outset of the study, two major themes were identified as essential to linking regional transformation and place-making in the Upper Tennessee River Valley to the way in which capital was accumulated and utilized. These were: 1. Access to Capital and Urban-Industrial Development; and 2. The Involvement of Business Organizations in Making Places. The first theme relates to the ability of business organizations to obtain capital to perform desired tasks. During the first period of capital investment in the study region, capital availability was limited by the ownership structure of businesses, as well as the limited access to large-scale loan capital centered

in major cities of the Northeast. In the second period, however, companies that operated in the region were more successful at securing large amounts of capital through more open ownership structures, and connections they had to the New York and Boston money markets.

Access to capital ties into the second theme of business involvement in the creation of urban places, because capital availability in some part determined spatial strategies and what types of urban-industrial development were feasible. The extent of involvement and investment in the creation of places was a reflection of the goals that the companies hoped to achieve by producing housing, services, planned developments, and commercial functions. Analysis of the companies that operated in the study region during the post-Civil War to turn-of-the-century period reveals that varied development and place-making strategies were employed, creating distinct urban morphologies and social patterns on the landscape. Each of these contributed to the regional transformation that took place in the Upper Tennessee River Valley during the period.

These themes provide a basis for addressing some specific questions that were posed at the outset of the study. Among these were questions regarding the origin of the capital used for industrial development in the Upper Tennessee River Valley. Most of the development was funded by capital from outside of the region. The earliest

factory-scale industrial activity at Rockwood in 1867 was initiated by a group of former Union soldiers exposed to the region during wartime. These former soldiers funded development at Rockwood by bringing a small group of Indiana and Ohio investors into the scheme. The impetus for this initial capital investment was the availability of resources needed for iron production. Iron ore, coal, and lime deposits were present in and around Walden's Ridge. John Wilder and Hiram Chamberlain -- experienced iron makers -- recognized the juxtaposition of these resources as significant, as they had observed the new coal-fuel iron smelting process in the North. Thus, for the first time, the Upper Tennessee River Valley became attractive to investors of industrial capital based on the needs of current technology.

Policies enacted by the state government in Nashville in the aftermath of the war facilitated industrial development in Tennessee in the early post-war period. William Brownlow's reconstruction administration was the first in Tennessee to encourage industrialization. During the mid and late 1860s, legislative bills were introduced specifically inviting outside industrialists and capitalists to invest in the state. State associations were founded for industry and immigration, to aid and encourage industrialization. This created a positive environment for industrial investment, in that projects

such as the one conceived by Wilder and Chamberlain were sought after by the state government.

The development that took place during the second period of investment in the Upper Tennessee River Valley was also funded by outside capital. This development was predicated on regional conditions that had emerged during the preceding decades. One of these was the successful operation of the Roane Iron Company's facility at Rockwood. Roane Iron had proved that pig iron could be produced for profit in the region in the years after 1867. This was very important for the agents of change during the second period of investment -- the land companies -- because it was evidence that the industrial activity which was to be the basis of their city developments could and would become a reality. A second condition which served as an impetus to the capital investment of the late 1880s and early 1890s was the construction of railroad lines in the region. By 1880, the Cincinnati-Southern line was completed through western Roane County connecting Cincinnati, Ohio with Chattanooga, Tennessee. The East Tennessee Virginia & Georgia Railway expanded into the region as well during the latter 1880s, acquiring the locally-owned Walden's Ridge Railroad and expanding it to connect with the Cincinnati-Southern and the Knoxville & Ohio Railroads. The existence of a well-developed rail system made the Upper Tennessee River Valley attractive to further investment because transportation access was perceived to be integral to the

success of industrial enterprise and new city developments. The East Tennessee Land Company expressed this investment logic in their prospectus:

The railroads now built and building and projected, would make Harriman grow like the lustiest young town in all the West, were there no mineral interests to give it impetus and growth. And these railroads must bring to it a wealth of timber, of produce, of iron and of coal soon rivaling the resources of any long-established town...¹

The outside capital that was invested in the region during the second period came through the activities of land companies. These land companies -- the Cardiff Coal and Iron Company, the East Tennessee Land Company, and the Lenoir City Company -- had innovative organizational and financial structures for the period. They were organized as public entities, and sold stock to the public as a means of obtaining operating capital. They also were able to access major capital markets to obtain trust certificates and mortgages that provided large amounts of capital. The land companies gained access to capital markets through the influential businessmen that were their principals. Men such as Clinton B. Fisk, Ferdinand Schumacher (the East Tennessee Land Company), W.P. Rice, B.B. Smalley (the Cardiff Coal and Iron Company), Charles McGhee and Samuel Thomas (the Lenoir City Company) had previous experience with the capital market from their railroad and industrial dealings. All of these men were native northerners except for McGhee², and they were outsiders who were involved in

¹*Prospectus of the East Tennessee Land Company*, 33.

²Although a native of Knox County, during the late 1880s and early 1890s Charles McGhee lived in New York City and was a vice president 267

developing the region for profit. Thus , again during the third period of investment, northerners were the major organizing and orchestrating forces behind the development of the Upper Tennessee River Valley.

Although development that took place during both periods of investment was instrumental to the regional change that took place between 1865 and 1910, the character of development during the periods differed somewhat. During the early period of investment, the Roane Iron Company was the principal business organization administering development. Roane Iron was an incorporated entity, but a small group of businessmen owned and managed it. Because of this the company had a limited capital base, and its objectives corresponded with this situation. The company concentrated its efforts on the construction and operation of an iron production facility in the Upper Tennessee River Valley. Other development activities by Roane Iron were subordinate to and resultant of the operation of blast furnaces at the Rockwood site. This included iron ore and coal mining, the construction of spur rail lines, the provision of worker housing, and ultimately community formation. The activities of land companies during the second period of investment contrasted with this pattern. They attempted to coordinate and administer many projects as part of an overall development strategy. These

of the East Tennessee, Virginia & Georgia Railway. This situation made him one of a very small group of native East Tennesseans during this period who were in a position to influence development in the Upper Tennessee River Valley.

projects included mineral extraction, industrial production, railroad building, and community planning. The availability of large amounts of start-up capital made this comprehensive development strategy possible. Land companies did not concentrate on industrial development alone, but diversified their efforts from the outset in order to make money from many activities. Thus, development administered by business entities during the second period was larger-scale and more diversified than that of the earlier period.

The differences in the development approaches of companies operating in the Upper Tennessee River Valley during the two investment periods were also manifested in their urban place-making strategies. A major distinction that can be made is the degree of planning that went into company-funded urban development during the respective investment periods. Evidence indicates that during the first investment period, the Roane Iron Company did not plan the urban landscape of Rockwood in advance. In fact, the Roane Iron Company did not file a plan for Rockwood until 1887 -- 19 years after the it began producing iron at the site. As a result, during its early years, the community was developed in unplanned spurts of housing construction related to the labor needs of iron production. The morphology that emerged from this activity over time was a block pattern, created as streets and residence areas were hastily added to the initial nucleation. This urban

development pattern is similar to one documented by Gillenwater in his study of coal towns in the Pocahontas Coal Field of Southern West Virginia. He noted that some unplanned coal towns exhibited block morphologies, especially those which were located in level valley areas, such as Rockwood.³

The Roane Iron Company maintained ownership of land in Rockwood during the first twenty years of the settlement's existence, and provided housing for mine and mill workers. The production site was isolated, and the company viewed housing construction as a necessity to maintain needed labor for production. The return that Roane Iron expected on this investment was reliable labor in the blast furnaces, and rent payments which were drawn directly from paychecks. A company store was also established early on, to serve the population of Rockwood. Roane Iron owned and operated the store, which was the only retail outlet in the settlement during the 1860s and 1870s. Thus, the Roane Iron Company's development of Rockwood followed the nineteenth century early pioneer company town pattern: the company owned the land, built housing, and operated businesses in an effort to contribute to the success of some more important primary activity, such as industrial production or resource extraction.⁴ Roane Iron did not

³Mack H. Gillenwater, "Cultural and Historical Geography of Mining Settlements in the Pocahontas Coal Field of Southern West Virginia, 1880-1930," Ph.D. dissertation, University of Tennessee, Knoxville, 1972, 55-61.

⁴Shifflett, *Coal Towns*, 48-51; Shifflett has identified three general stages in the development of southern Appalachian coal company towns: 270

have the capital or inclination to pre-plan Rockwood or to make the settlement a model industrial city. The company developed Rockwood as a necessary by-product of the operation of the iron production facility.

The urban places developed by land companies during the third investment period were planned in advance of any settlement or industrial activity. Rather than by-products, they were to be the centerpieces of development schemes, and major sources of profit for the companies. Land within the these cities was to be sold by the companies rather than rented. The land companies took much time, effort, and capital in the initial planning process in order to make their new cities desirable for investment. These efforts included the incorporation of popular environmental and sanitary reform concepts -- such as wide streets, public open spaces, water systems, sewer systems, electric light systems, and street grading and macadamization. The strategy behind the inclusion of these features was twofold: they were to make land within the cities more desirable and saleable to potential investors and residents; and make the cities themselves ideal places for industrial activity because of the positive affects such environments would have on industrial workers.

The city plans that were commissioned by the land

a pioneer or frontier stage, during which towns were first being built in isolated resource extraction areas; a second paternalistic stage, in which operators paid more heed to the needs of the laborers and provided more infrastructure and amenities; and a third phase in which production decreases and the towns age and decay leading up to the end of production.

companies were products of specific notions about how urban areas should be structured. Environmentalism and sanitary reform ideas were part of this, as were ideas about how space should be allocated and defined within the city. In their commercial literature, the land companies described in detail how land was to be used. Commercial, industrial, public, and residential areas were defined in the planning process in an effort to develop cities "superlative in all respects." In addition, the residential areas were further defined, as the companies delimited specific residential areas for particular class and income groups, and developed subdivision patterns and pricing schemes to correspond with these.

Analysis of the City of Harriman shows that significant spatial separation existed between class and race groups living in the urban settlement. Evidence also indicates that the companies had preconceived ideas about who was to live where, and how land was to be used generally in the cities. The explanations for these patterns is tied to the profit strategy employed by the companies.

Scrutiny of land company place-making initiatives indicates that they were *model real estate ventures*. That is, the utmost concern of the companies was to sell land, and to obtain the maximum profit in doing so. Infrastructure improvements and aesthetically pleasing designs were used as selling points. So, too, was the

availability of land for the variety of skill groups that would settle in industrial cities. The companies wanted to sell everyone as much property as they could afford. An oversight made by the East Tennessee Land Company in the development of Harriman lends insight into this process. The company sold land in its original town site for prices ranging from \$400 to \$7,550 throughout 1890. The average price per lot during this period was \$1050. The ETLC soon realized that these prices were prohibitive for semi-and-unskilled workers that were going to be needed for labor in production facilities. In response to this, two new residential additions were established, approximately a mile to the west of the original town site. Walnut Hills and Oak View Additions were to be residence areas for white blue-collar workers and blacks, respectively. The intriguing question is "Why weren't these residence areas provided in the original plan?" The answer to this question lies in the profit strategy of the East Tennessee Land Company. The company was more concerned with selling higher-priced land to people who had money to buy it, than it was with providing housing opportunities for industrial workers. This was a very different approach than that used in industrial company towns, where providing shelter for industrial labor was the primary impetus for place-making. Thus, the principal profit-making strategy of the land companies was linked to the urbanization process itself.

The social landscape that emerged in land company cities was in large part a product of this profit strategy. There is no doubt that the companies had preconceived ideas about the spatial structures of their urban landscapes. These ideas were not, however, primarily related to hatred or prejudice. They were based on profit potential. The companies wanted to make money selling land to a variety of income groups, and planned their settlements accordingly. The companies did separate these residence areas spatially within their plans, drawing on patterns that were prevalent in northern cities. This was especially true with respect to unskilled blue-collar workers. However, the fact that wholesale class segregation was not in effect is illustrated by the fact that low white-collar workers and skilled blue-collar workers (different occupational class groups with comparable income levels) had similar residence patterns in Harriman. This indicates that spatial segregation by income group existed in land company cities, and that this was a product of profit motive, rather than some more sinister social control agenda.

With respect to blacks living in Harriman, spatial segregation was almost total. In all probability, the East Tennessee Land Company had not initially contemplated that blacks would be living in its planned city. When the company realized that blacks would be needed as part of the industrial workforce, it had to deal with the issue of providing housing areas for them. The company's solution

was Oak View Addition, a residential enclave separate from white housing areas. It is important to note, however, that the ETLC did recognize the right of blacks to have community institutions such as churches and schools, which was more than was available for them in many areas of the South during this period. The motive for the spatial separation of blacks from the main city area was basically the same as that for the separation of white unskilled blue-collar workers -- the maintenance of harmony, and property values, in the model real estate ventures.

Conclusions

While this study aimed primarily at proving the importance of phases of capitalism in determining the characteristics of regions, two further, and from a theoretical perspective, less anticipated findings emerged, ones which might inform further study. These relate to characteristics of capitalism and how they play out within regions.

The Maturation of Capitalism and Regional Development

The results of this analysis indicate that as capitalism went through the three phases (from mercantile to industrial to corporate) in the study region, it became more intimate. That is, it gained the ability to act more directly to inform and alter regional characteristics.

This was a product of increasing amounts of capital available for investment within the region, as well as the increasing vulnerability of the range of regional activities to organization by and for profit.

Capitalism during the mercantile phase provided a market for goods. Although the mercantile phase introduced changes in the economy and the everyday lives of people in the region, these changes were indirect. Merchants took what local producers had to offer, and gave them things in return.

By the industrial phase, capitalism was directly organizing industrial production. This had a significant impact on the economy of the region (increasing orientation towards industrial rather than agricultural production) as well as the lifestyle of its population (industrial workers vs. yeoman farmers). The Roane Iron Company bought large amounts of land, initiated resource extraction, and employed those resources in a manufacturing process to produce higher-value commodities. In carrying out these activities, the Company also provided employment for hundreds of workers, built the housing where they ate and slept in their time away from the mills and mines, and administered the store where they bought their food.

In the corporate phase, capitalism penetrated regional life to an unprecedented level. The land companies purchased large amounts of land, planned cities, and pursued development strategies designed to make money from

the many activities associated with urbanization. The companies employed these strategies to take advantage of all possible profit niches, but their results reached beyond these. In addition to further altering the regional landscape and economy, corporate capitalism went one step further to consciously influence a major aspect of human identity -- culture.

Analysis reveals that land company place-making initiatives were based on specific ideas about what urban places should be, and how their residents should live their lives. These ideas had their origins in identifiable social movements that were emerging in the United States during this period. In effect, the land companies propagated these ideas, and made them fundamental aspects of their place-making efforts, in an attempt to assure their success.

With respect to the development of industrial cities, the land companies used similar approaches. Each of the cities was to be a temperance settlement, with no consumption or production of alcoholic beverages permitted. Alcohol consumption was equated with "disorder and lawlessness"⁵ by the companies, while temperance was felt to encourage "sober labor...[which] yields a positive percentage of gain to the capital employing it."⁶ Thus, temperance was to be a means of preserving law and order in

⁵*Prospectus of the Lenoir City Company*, 19.

⁶*Two Years of Harriman*, 94.

the cities, while at the same time increasing industrial efficiency and profit margin.

The land companies also uniformly invoked several tenets of the sanitary reform movement in the development of their urban places. These included aspects such as sanitary site selection, the provision of sewerage systems, water systems, paved streets, and parks. Sanitary site selection was felt to provide "all of the conditions of a sanitarium...elevation, pure air, healthful waters...", which would prevent disease and sickness.⁷ Water, sewer, and street systems as components of the built environment were also part of efforts to maintain "high standard(s) of health," and prevent sanitation problems that had emerged in American cities during the previous decades.⁸ The companies were aware not only that these infrastructural improvements would be effective in creating a more sanitary and safe urban environment, but that they were expected and desired by the people who might invest in their cities.

The model of urban development employed by land companies in the study region encompassed what Boyer refers to as "the two faces of urban moral reform in the 1890s."⁹ One of the faces, or strategies, of reform was the coercive approach, in which measures were aimed at individuals in order to uproot vice and impose a higher standard of civic virtue. The goal was to undertake social control measures

⁷*Prospectus of the Lenoir City Company*, 20.

⁸*The Cardiff Herald*, July 23, 1890.

⁹Boyer, *Urban Masses and Moral Order in America*, 175.

that would preclude the urban problems that had become commonplace in other American cities. Boyer describes the temperance movement as "the quintessential coercive reform," in that the saloon was viewed as a major bastion of urban vice.¹⁰ The second "face" of urban reform utilized by the land companies involved consciously planning the city's physical environment as a means of elevating its moral tone. The aim of positive environmentalism was not to destroy urban vice through rhetoric or legal repression, but "by creating the kind of city where objectionable patterns of behavior, finding no nurture, would gradually wither away."¹¹ This normally involved the provision of parks, playgrounds, and facilities for concerts, lectures, and art exhibits. In many instances, sanitary reform ideals were also included as components of positive urban environments, with a relationship being drawn between cleanliness, health, and the character of city dwellers.¹²

The increasing intimacy displayed during the corporate phase has both positive and negative results. Results that could be considered positive in the Upper Tennessee River Valley were things such as sanitary living conditions, infrastructure provision (water supply, sewage, streets, lighting), introduction of technology, and well planned urban areas. On the other hand, control of local

¹⁰Ibid., 181-182.

¹¹Ibid., 221.

¹²Peterson, "The Impact of Sanitary Reform," 13-39.

conditions during the corporate phase increasingly shifted from the indigenous population to non-local business organizations. Regional culture traits and complexes were coopted and characterized as inferior to outside ideas and innovations. Whether the results were positive or negative, advanced capitalism meant increasing intimacy in a regional context.

The Role of Human Agency and Happenstance in the Emergence of Capital Phases

The findings of this study indicate that although individual actions are important in determining *when* capital phases become prevalent in particular regions, they seldom prevail over broader circumstances. There are several examples of the importance of human agency in the Upper Tennessee River Valley. The Reconstruction era in Tennessee provided opportunities for industrial development that did not exist previously. Governor William Brownlow initiated an industrial development program that encouraged outside industrialists to invest and produce in Tennessee. Men such as John Wilder and Hiram Chamberlain invested their industrial capital in the state partially because of this business environment. Wilder and Chamberlain, in turn, more than likely would not have been exposed to the Upper Tennessee River Valley had it not been for the historical circumstances of the Civil War. Thus, the inception of factory production and the industrial

capitalist phase would have occurred under different circumstances.

A singular example of the impact of individual action in the Upper Tennessee River Valley is Charles McClung McGhee. McGhee was an individual who played a tremendous role in the development of the region. It is safe to say that had it not been for his actions, the development pattern that emerged in the study region would have been very different. McGhee was unique because he was a native East Tennessean who had connections to some of the most important and influential businessmen in the United States. He used these connections to direct development capital into the Upper Tennessee River Valley. For example, during the early-to-mid 1880s McGhee was instrumental in assisting the Roane Iron Company obtain New York funding for the production of steel at Chattanooga, as well as rail orders from the railroad companies with which he was involved. Roane Iron's expansion into steel production would have been impossible without these loans, and it is very unlikely that the Company would have gotten them without McGhee's aid. The same is true of the steel rail orders. Later, in 1890, McGhee again became personally involved in a development scheme in the Upper Tennessee River Valley -- the Lenoir City Company. In this instance, McGhee convinced a group of his New York business associates (members of his syndicate), to invest in the Lenoir City urban-industrial scheme. Again, it is doubtful that the

Lenoir City Company would have gotten off the ground were it not for McGhee's assistance.

Other individuals were also very important in the establishment and operation of land companies in the Upper Tennessee River Valley. Entrepreneurs such as Ferdinand Schumacher, B.B. Smalley, Joshua Chamberlain, Samuel Thomas, Calvin Brice, and Oliver Payne were veterans of the business world. They were higher-ups in large American railroad companies and large industrial entities, and had access to sources of capital in New York City and experience with innovative ways to accumulate capital. When these men made the decision to become involved in business ventures in the Upper Tennessee River Valley, the region became connected to these sources of capital, and was altered significantly as a result.

Having acknowledged the importance of human agency in ushering in capitalist phases, it is appropriate to recognize its limitations. The individual actors operating in the Upper Tennessee River Valley began with much greater aspirations than were ever realized there. If they had been able to orchestrate capitalist development completely, the region would have become a major national industrial center -- however, it didn't. This is because the individuals who were important in bringing capital investment to the Upper Tennessee River Valley could not alter more basic technological or economic trends emerging in the United States. Factors such as the switch from iron

to steel and the depression of the 1890s were powerful enough to cause regional development schemes to fail despite the best efforts of people such as Hiram Chamberlain, Charles McGhee, Frederick Gates, and E.J. Sanford. Thus, happenstance operating at many levels could further or negate the efforts of capitalist actors. The success stories were wrought of the coincidence of the efforts of capitalists and circumstances at many other levels.

Though the subject companies and cities of the Upper Tennessee River Valley were losers in this capitalist competition, they provide valuable information about the capital and place-making connection. Capital accumulation methods were important to urban place-making, in that development opportunities and options were determined by capital availability. The land companies analyzed in this study were found to utilize new and effective ways of obtaining capital, which was used to develop urban places for profit. Land companies were peculiar in this respect, and may have been the earliest business entities to attempt to accrue profit mainly from the urbanization process. This may provide the impetus for further research, in that little has been written on land companies, and evidence indicates that many such companies operated in other areas of the American South during the study period.

In the 1990s, the products of these companies remain in the Upper Tennessee River Valley as well as places such

as Middlesboro, Kentucky, Fort Payne, Alabama, Anniston, Alabama, and South Pittsburg, Tennessee, among others. There are probably many more that endure on the landscape, most of which resulted in similar short-term economic failure, left as backwater regions and localities. They, like the towns of the Upper Tennessee River Valley, have in all likelihood become small local urban places in regions on the margins of the twentieth century capital landscape. However, in the century between the study period and the present, capitalism has increased its capacity to influence everyday life. In the last decade of the twentieth century, capitalism can go almost anywhere in the pursuit of profit. It can work in backward areas as well as advanced ones in the form of chain retailing (K-Mart and WalMart), fast food restaurants (McDonald's and Burger King), and mini-marts (Circle K and 7-11). Thus, life-shaping capitalism has returned to the Upper Tennessee River Valley and other similar regions in the modern era, however, arguably without the urbane refinement of the original visions of Harriman, Cardiff, and Lenoir City.

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APPENDIXES

APPENDIX A

OCCUPATIONAL CLASSIFICATION ADAPTED FROM ZUNZ (1982)

High White-Collar Occupations

physician, lawyer, dentist, merchant, architect,
large business owner

Low White-Collar Occupations

clerk, salesman, bookkeeper, insurance agent,
civil engineer, schoolteacher, contractor

Skilled Blue-Collar Occupations

carpenter, machinist, iron puddler, iron molder,
plumber, railway engineer, cabinetmaker,
printer, blacksmith

Semiskilled and Unskilled Blue-Collar Occupations

laborer (various), janitor, porter, watchman,
policeman, peddler, messenger, domestic, waiter

VITA

John Edward Benhart, Jr. was born in Pittsburgh, Pennsylvania on September 4, 1966. He attended grammar school, junior high school, and high school in the Shippensburg, Pennsylvania Area School District. He received his high school degree in June of 1984.

In September of 1984, he began undergraduate studies at the University of Pittsburgh at Johnstown. Two years later in 1986, he transferred to the University of Pittsburgh - Main campus. He was granted the Bachelor of Arts degree from the University of Pittsburgh in Urban Planning in May of 1988.

In August 1988, he initiated his graduate studies in the Geography Department at the University of Miami, Florida. While at the University he served as the Geography Department representative to the Graduate Student Association for the 1989-1990 school year. He was awarded the Master of Arts degree from the University of Miami in December 1990.

In August of 1990, he was accepted into the doctoral program of the Department of Geography at the University of Tennessee, Knoxville. While at the University, he worked as a teaching assistant, GIS lab manager, and instructor. His specialty fields were urban, economic, transportation, and historical geography. He received his Doctor of Philosophy degree in Geography from the University of Tennessee, Knoxville in August of 1995.