

INFORMATION TO USERS

While the most advanced technology has been used to photograph and reproduce this manuscript, the quality of the reproduction is heavily dependent upon the quality of the material submitted. For example:

- Manuscript pages may have indistinct print. In such cases, the best available copy has been filmed.
- Manuscripts may not always be complete. In such cases, a note will indicate that it is not possible to obtain missing pages.
- Copyrighted material may have been removed from the manuscript. In such cases, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, and charts) are photographed by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each oversize page is also filmed as one exposure and is available, for an additional charge, as a standard 35mm slide or as a 17"x 23" black and white photographic print.

Most photographs reproduce acceptably on positive microfilm or microfiche but lack the clarity on xerographic copies made from the microfilm. For an additional charge, 35mm slides of 6"x 9" black and white photographic prints are available for any photographs or illustrations that cannot be reproduced satisfactorily by xerography.

Order Number 8719232

**Textile production in nineteenth century Orange, Alamance, and
Durham counties, North Carolina**

Wilson, Laurel E. Janke, Ph.D.

The University of North Carolina at Greensboro, 1986

Copyright ©1986 by Wilson, Laurel E. Janke. All rights reserved.

U·M·I

**300 N. Zeeb Rd.
Ann Arbor, MI 48106**

PLEASE NOTE:

In all cases this material has been filmed in the best possible way from the available copy. Problems encountered with this document have been identified here with a check mark ✓.

1. Glossy photographs or pages ✓
2. Colored illustrations, paper or print _____
3. Photographs with dark background ✓
4. Illustrations are poor copy _____
5. Pages with black marks, not original copy _____
6. Print shows through as there is text on both sides of page _____
7. Indistinct, broken or small print on several pages _____
8. Print exceeds margin requirements _____
9. Tightly bound copy with print lost in spine _____
10. Computer printout pages with indistinct print _____
11. Page(s) _____ lacking when material received, and not available from school or author.
12. Page(s) _____ seem to be missing in numbering only as text follows.
13. Two pages numbered _____. Text follows.
14. Curling and wrinkled pages _____
15. Dissertation contains pages with print at a slant, filmed as received _____
16. Other _____

University
Microfilms
International

TEXTILE PRODUCTION IN NINETEENTH CENTURY
ORANGE, ALAMANCE, AND DURHAM
COUNTIES, NORTH CAROLINA

by

Laurel E. Janke Wilson

A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fullment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
1987

Approved by


Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following
committee of the Faculty of the Graduate School at The
University of North Carolina at Greensboro.

Dissertation Advisor Larvia Franck

Committee Members Billie B. Oakland
Jean Gordon
Anna A. Simbiris
Mildred Johnson

22 October 1986
Date of Acceptance by Committee

4 June 1986
Date of Final Oral Examination

© 1986 by Laurel E. Janke Wilson

WILSON, LAUREL E. JANKE, Ph.D. Textile Production in Nineteenth Century Orange, Alamance, and Durham Counties, North Carolina. (1986) Directed by Lavina M. Franck. 127 pp.

The purpose of this study was to investigate domestic textile production in nineteenth century Orange, Alamance, and Durham counties, North Carolina. The specific objectives were to determine the amount of home textile production, the effect of the textile mill industry on home production, and the role of men and/or women in domestic textile production. Public records have proven to be reliable sources about material culture. These records often include references to textile production equipment and are a reliable means of learning about textile production practices. Content analysis was done of all the nineteenth century estate records and wills available in the three counties. The records included documents such as estate inventories, sales accounts, widows' allotments, guardians' accounts, bills from craftsmen, and merchants accounts. This information was recorded for each record: date (usually of death), name of the decedent, type of document in the estate records, piece of equipment, and price. The chi square statistical test was done to compare equipment ownership of men and of women. Extant handwoven bedcoverings were analyzed and the oral history recorded.

The estate sales accounts indicated that home textile production was commonly done during the nineteenth century in the three counties. The textile mill industry affected the numbers of textile production equipment owned but hand-

weaving and spinning continued long after the mills were established. Quantitative data showed that women owned as much or more textile equipment as did men and wills showed that looms and spinning wheels were left to women in at least 86 percent of the cases. Qualitative information supported the supposition that women had a primary role in domestic textile production. The oral history related by owners of handwoven bedcoverings indicated that all the pieces of known origin were believed to have been woven by women.

ACKNOWLEDGEMENTS

I would like to thank Miss Franck for advising me throughout my graduate studies and, in particular for improving the first drafts of the thesis. I would also like to thank those on my committee, Dr. Jean Gordon, Dr. Anna Simkins, Dr. Billie Oakland, Dr. Mildred Johnson, and Mr. Paul Callaway who spent many long hours reading and suggesting changes which improved this work. My professors at UNCG gave me a solid foundation on which to build. Vicky Bynam suggested that the probate records in the North Carolina Archives might be a possible source of reliable information about handweaving. Clarita Anderson showed me some additional sources that made a difference in how I analyzed the archival data. The staff and researchers at the North Carolina State Archives made me feel welcome and made a sometimes tedious task go more easily. All those people who answered the press release and shared their beautiful bedcoverings made a real contribution. Howard Wilson spend many long hours entering data for the computer analysis and many more developing film and printing pictures. He did numerous other tasks which made it possible to finish my course work and my research. My parents have always had faith that I could succeed at anything if I worked at it.

TABLE OF CONTENTS

	Page
APPROVAL PAGE.....	ii
ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES.....	vi
LIST OF FIGURES.....	viii
 CHAPTER	
I. INTRODUCTION.....	1
Statement of the Problem.....	2
Justification.....	3
Assumptions.....	3
Limitations of the Study.....	4
Definitions of Terms.....	4
II. HISTORICAL BACKGROUND.....	7
Related Studies.....	7
Introduction.....	8
A History of North Carolina.....	9
A History of Orange County.....	13
A History of Alamance County.....	15
A History of Durham County.....	15
The Textile Industry in the South.....	15
The Textile Industry in North Carolina.....	17
The Textile Industry in Orange, Alamance, and Durham Counties.....	18
The Textile Industry Workforce.....	21
A History of Handweaving.....	21
Handweaving in the South.....	27
Handweaving in North Carolina.....	27
Domestic Textile Producers.....	29
The Legal Status of Women.....	33
Changes in Women's Roles.....	34
Summary.....	35
III. RESEARCH METHODOLOGY.....	36
Methodology Selected.....	36
Expectations.....	37
Instruments.....	38

Sample.....	39
Analysis.....	40
IV. ANALYSIS.....	41
The Equipment, Fiber, and Cloth Found in the Estate Records and Wills.....	41
The Effect of the Textile Mill Industry on Domestic Production of Textiles.....	43
A Comparison of Male and Female Estates Containing Fiber Production Equipment.....	53
Comparison for Spinning Wheels.....	54
Comparison for Carders.....	59
Comparison for Looms.....	63
The Widows' Allotments.....	69
Other Documents with Information about Textile Processing.....	72
The Bedcoverings.....	75
Weave Structures.....	78
Ply.....	78
Fiber.....	78
Sett.....	78
Width and Number of Loom Widths Used in the Bedcoverings.....	79
Length and Width.....	79
Color.....	82
The Role of Women in Textile Production.....	83
V. SUMMARY AND IMPLICATIONS.....	84
Summary.....	84
The Amount of Home Textile Production and the Effect of the Textile Industry.....	86
The Role of Women in Domestic Textile Production.....	88
Analysis of the Method.....	90
Implications of the Investigation.....	91
BIBLIOGRAPHY.....	92
APPENDIX A. DATA COLLECTION FORMS.....	99
APPENDIX B. THE COMPOSITION OF THE ESTATE RECORDS AND WILLS.....	101
APPENDIX C. THE BEDCOVERINGS.....	106

LIST OF TABLES

Page

Table 1: Textile Mills Opened and Closed in Each Decade from the 1830s to the 1890s in Orange, Alamance, and Durham Counties.....	44
Table 2: Number of Spinning Wheels and Total Number of Males and Females Found in Sales Accounts and Estate Inventories for Each Decade.....	55
Table 3: Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis that Males=Females Ownership of Spinning Wheels for Sales Accounts.....	57
Table 4: Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis that Males=Female Ownership of Spinning Wheels for Estate Inventories.....	58
Table 5: Number of Carders for Each Sex and Each Decade for Sales Accounts and Estate Inventories.....	61
Table 6: Chi Square Test Statistic for Acceptance/Rejection of the Null Hypothesis Males=Females Ownership of Carders Listed in the Sales Accounts.....	62
Table 7: Number of Looms and Number of Total Sales Accounts and Estate Inventories for Each Sex and Decade.....	65
Table 8: Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis for Male=Female Ownership of Looms in Sales Accounts.....	66
Table 9: Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis that Male=Female Loom Ownership for Estate Inventories.....	68
Table 10: Textile Production References in the Widows' Allotments for Each Decade.....	70
Table 11: Total Number of Bedcoverings and Those with a Known Weaver from Each of the Study Counties.....	76

Table 12: Number of Loom Widths and Measurements in Inches Found in Extant Bedcoverings.....	80
Table 13: The Length and Width and Frequencies of the Bedcoverings.....	81
Table 14: Estate Records and Wills by Sex for Each Decade.....	101
Table 15: The Number of Sales Accounts Found in the Estate Records and the Percentage of Estate Records Having Them.....	102
Table 16: The Number of Estate Inventories Found in the Records and the Percentage of Estate Records Having Them.....	103
Table 17: Number and Percentage of Widows' Allotments in the Estate Records.....	104
Table 18: Frequency of Guardian Accounts, Retail Sales Accounts, and Bills from Craftsmen Found in the Estate Records.....	105
Table 19: Number of Loom Widths and Measurement in Inches Found in Extant Bedcoverings.....	117
Table 20: The Length and Width and Frequencies of the Bedcoverings.....	119
Table 21: Tabby Weave.....	124
Table 22: Twill Weave.....	124
Table 23: Cord Weave.....	125
Table 24: Honeycomb.....	125
Table 25: Ms and Os.....	125
Table 26: Overshot.....	126

LIST OF FIGURES	Page
Figure 1: Flax Processing Equipment.....	23
Figure 2: Wool Processing Equipment.....	25
Figure 3: Cotton Processing Equipment.....	26
Figure 4: Counterbalance Loom.....	28
Figure 5: Percentage in Each Decade of Estate Sales with Looms.....	46
Figure 6: Percentage in Each Decade of Estate Sales with Spinning Wheels.....	48
Figure 7: Percentage in Each Decade of Estate Sales with Cards.....	50
Figure 8: Percentage in Each Decade of Estate Sales with Fiber.....	52
Figure 9: Overshot Weave.....	108
Figure 10: Cord Weave.....	109
Figure 11: Twill Weave.....	111
Figure 12: Tabby Weave.....	112
Figure 13: Two Block Overshot.....	115

CHAPTER I

INTRODUCTION

Textiles were important products of household manufacture in late eighteenth century and early nineteenth century America before industrial goods replaced them (Wilson, 1979 and Coons, 1980). Handweaving and spinning were commonly done in North Carolina before textile mills made fabrics available in the late 1840s and 1850s (Pierpont, 1953). However, there is conflicting evidence of when home textile production was abandoned. The highland areas of North Carolina continued home textile production well into the twentieth century (Eaton, 1936), and dated weaving drafts from the North Carolina Piedmont indicate the presence of weaving well into the nineteenth century (Pinchin, 1979). Johnson (1937), on the other hand, wrote that handweaving had stopped by 1840 in most of North Carolina (p. 245).

A method of systematically investigating home textile production was needed. Main (1973) developed a method of investigating historical material culture which used the public records of the illiterate and those of limited education. Among those public documents were probate records which often included estate inventories and estate sales accounts, the most reliable sources of information about

material culture. The use of inventories for researching textile history has been tested by a number of studies including one of eighteenth century fabric furnishings in Maryland (Young, 1984) and another about domestic textile production in eighteenth century Maryland (Scholley, 1982). A limitation of using probate records was found. Only individuals, generally middle-aged or older men, who owned substantial personal or real property were represented. Women and younger people were not well represented (Young, 1984).

Another method was developed which considers the artifacts of a period as investigative tools (Prown, 1979). A group of scholars suggests that artifacts might represent more of a population, including those who did not leave written records behind (Glassie, 1984).

Statement of the Problem

The major purpose of this study was to investigate domestic production of textiles in the nineteenth century North Carolina central Piedmont. The specific objectives were:

1. To determine the amount of home textile production and the effect of the textile mill industry on home production in Orange, Alamance, and Durham Counties, North Carolina.

2. To determine the role of men and/or women in domestic textile production in the selected counties during the nineteenth century. This can be investigated by testing the null hypothesis: There is no difference between men and women in ownership of textile production equipment during the nineteenth century.

Justification

It is important to investigate the past in a systematic way in order to dispel the myths that are held about weaving and spinning. Because there is a great deal of interest by museums in recreating a view of the past, information is needed for accurate interpretation.

A source for the study of textiles is the data in county records. Up to now this source has been somewhat overlooked and this study shows archival records as a viable means of investigating textile material culture.

Assumptions

1. Nineteenth century estate records are a reliable source of information about textile production equipment.

2. The records leave an account of the least quantity of equipment extant; more was probably present than was recorded.

3. Oral data about the weavers of the extant bedcoverings are reasonably accurate.

Limitations of the Study

1. The investigation considered only the nineteenth century probate records and wills of Alamance, Orange, and Durham Counties that were in the North Carolina State Archives in Raleigh or in the archives of these counties.
2. Data were collected about handwoven bedcoverings from only the people who responded to a press release.
3. Findings and conclusions were limited by the resources available and the interpretation of those sources by the investigator.

Definitions of Terms

The subject area of textiles has specialized terminology. In order to understand how these items were used the following terms are defined:

1. Artifacts are objects or material embodiments of human technology or skill (Beckow, 1975).
2. Material culture refers to objects or artifacts that are made or modified by human beings (Prown, 1979).
3. Extant artifacts are those which still exist.
4. Estate records, as termed by the North Carolina archivists, are probate records.
7. Domestic textile production is textile production done in the home usually for the use of the family.
8. Carders are wire studded boards used to align fiber for spinning (Merrimack Valley Textile Museum, 1977, p. 16).

9. A hackle is a board with pointed nails driven through it and used to clean, separate, and comb flax (Burnham, 1980, p. 68).

10. A flax break has two sets of wooden blades which are hinged at one end and is used to break the woody outer husk of the flax plant from the bast fibers (Burnham, 1980, p. 58).

11. A scutching mill is a block of wood and a wooden knife used to scrape the broken woody stalk from the bast fibers (Burnham, 1980, p. 58).

12. The flier twists the fiber and draws it onto the bobbin on the spinning wheel (Coons, 1980, p. 50)

13. The spinning head includes the flier, bobbin, and orifice of the spinning wheel.

14. The reel is a rotary apparatus used to wind skeins (Burnham, 1980, p. 106)

15. A swift is a rotating device used to hold skeins when they are being unwound (Burnham, 1980, p. 138).

16. A spindle is a stick or rod used for spinning yarn (Burnham, 1980, p. 129).

17. Quill paper is used for making quills, a form of paper bobbin on which yarn is wound and then used in the shuttle.

18. Warp consists of the lengthwise yarns of a textile.

19. Weft consists of the filling yarns in a textile.

20. Heddles are a part of the loom which carry the warp yarns so that they may be raised or lowered to form the pattern in textiles (Burnham, 1980, p. 70).

21. Harnesses are the frames on a loom which carry the heddles.

22. Jacks are used to lift harnesses on a loom.

23. The warping frame and warping reel are used for winding a warp.

24. A counterpane is a bedspread. In this investigation "counterpane" will represent all-cotton, white bedspreads.

25. A coverlet is also a bedspread and those which are colored will be called "coverlets" in this investigation.

CHAPTER II

HISTORICAL BACKGROUND

Related Studies

Research has shown that handweaving in upstate New York disappeared within twenty years after improved transportation for manufactured textiles was available (Taylor, 1958, p. 211-214). Home production of textiles in other states, including North Carolina, increased until about 1825 then declined (Taylor, 1958, p. 213).

A study of handweaving in early eastern Canada showed that the ethnic makeup of the population affected textile production customs. In Quebec Province, although weaving was done well into the twentieth century, men produced most of the textiles of the region until the early nineteenth century when production moved from commercial enterprise to home. It was then that women took over the textile production operations (Burham & Burham, 1972, pp. 8-9). The customs of Nova Scotia were slightly different. Many of the emmigrants were men who had been professional weavers in Scotland and who carried on their trade in the new country. Their energy was needed for agricultural pursuits, however, and they taught their daughters to weave, and they, in turn, taught their daughters weaving. Textile production in Nova Scotia still persists (Burnham & Burnham, 1972, pp. 10-11).

Walker (1981), in research about handweaving in eighteenth and nineteenth century Pennsylvania, found regional differences in textile production practices. Walker found, that in the regions which had been settled fairly early, weaving was a professional occupation usually done by men. In regions which were settled later, spinning and weaving was done in both the weaver's shop and the home, and textile production was done by both men and women (p. 4-5).

The Tennessee History Project of 1978-1983 recorded an oral history of handwoven bedcoverings. It was found that most of the extant bedcoverings were woven by women. Coverlet weaving was done into the 1930s and a few were even more recent (Wilson & Kennedy, 1983).

Introduction

The historical review is divided into three main parts: the first is an overview of late eighteenth and nineteenth century North Carolina and Orange, Alamance, and Durham County history, and of the development of the textile industry in each county during the nineteenth century; the second deals with the general history of handweaving in this country and the equipment used; and the third part reviews the role of women in domestic textile production and women's legal status pertaining to ownership of property.

A History of North Carolina

The history of North Carolina reveals an isolation and lack of development largely caused by its geography. The outer banks effectively cut off most shipping along the coast, and rivers were navigable for the short distance to the fall line between the rolling hills of the Piedmont and the coastal plain. According to Johnson (1937) the roads which eventually cut through the North Carolina wilderness were poor at best and impassable at worst (p. 27) Only when the Great Wagon Road from Pennsylvania through Virginia's Shenandoah Valley finally reached the back country of North Carolina in about 1730 did that area begin to be settled. The lack of good transportation continued to plague North Carolina throughout the antebellum period of her history.

The Piedmont region was first settled by German immigrants from the Rhine region. Later, more Germans, Scotch-Irish, and English Quakers moved into the Piedmont from Virginia, Maryland, Pennsylvania, New Jersey, and New England states. In 1752 Moravians moved from Pennsylvania to the Wachovia tract in what is now Forsyth County. They founded Bethabara and Salem, both located near the western edge of the Piedmont. Some of these white settlers brought black African slaves with them.

The people of nineteenth century North Carolina were men and women without aristocratic traditions and with ha-

bits of thrift and enterprise (Pierpont, 1953, p.3). They were also people who were conservative and who proceeded cautiously to adopt new ideas (Johnson, 1937, p. 37). The largest class of people in North Carolina was composed of yeoman farmers who did not hold many slaves. In 1850 there were 52 slaves in North Carolina to every 100 whites and only 27 percent of the families were slaveholding. Of that percentage, 67 percent held fewer than ten slaves and most of the slaveholding families lived in the coastal plain (Johnson, 1937, p. 59).

The economy of North Carolina was based on agriculture. Cotton was grown along the coastal plain and in the southwestern section of the state. Some cotton was grown in the Piedmont region but tobacco was the primary crop there. Most of the inhabitants of North Carolina raised their own food, relying on merchants for things they could not produce at home (Kenzer, 1982, p.40). Even the industries of North Carolina before the Civil War were related to agriculture. There were many grist mills and lumber mills located along North Carolina's rivers. The cotton mills which were established in the 1830s were located there to take advantage of a product which was grown fairly near the mills.

Because of the problem of transportation and the conservative viewpoints of its inhabitants, North Carolina was slow to change from its agricultural heritage. In 1833 Governor Swain likened North Carolina to Rip Van Winkle and

alluded to a State which fell asleep right after the American Revolution. The first textile mill in North Carolina was established at the fall line in 1813. The first Piedmont textile mills were opened in the western edge of Orange County in the 1830s. The railroad era finally began in 1836, making it possible to ship both raw materials and finished goods across the State; however, the railroad was not built through Alamance, Orange, and Durham counties until 1849. The 1850s were the most prosperous years for North Carolinians before the Civil War disrupted the rural way of life. Improved transportation systems allowed the newly established manufacturers to move their products to markets within the state. Manufacturers expanded the businesses begun in the late 1830s and 1840s. Improved methods of agriculture as well as rising prices for farm products and the improved means of transportation increased the farmers' incomes enabling them to buy the manufactured goods. North Carolina's most important industries in 1860 were: 1) turpentine, 2) milling flour and meal, 3) tobacco, 4) lumber, and 5) textiles. Five of the 39 textile factories were in Alamance county and five in neighboring Randolph county (Lefler and Newsome, 1963, pp. 375-376). In spite of some notable economic advance after 1840, North Carolina was a relatively poor state having a rural economy. The transportation system was still incomplete and the industrial base was undeveloped. Aversion to taxation by the

citizenry restricted revenue and the ability of local and state governments to provide public services (Lefler & Newsome, 1963, p. 379). The Civil War retarded North Carolina's growth even more.

North Carolina's strong belief in the preservation of the union led to a protracted debate over secession. Once the decision was made to join the other Southern States, North Carolinians threw their resources behind the Confederacy in the war effort. The state's most notable contribution was man power (Lefler & Newsome, 1963 p. 430). The typical soldier from North Carolina was unmarried and had worked on the family farm (Kenzer, 1982, p. 115). The absence of these men and the subsequent emancipation of the slaves made it impossible to return to the antebellum system of agriculture in North Carolina (Kenzer, 1982, p. 132). Farms were usually retained by the white landholders and black freedmen provided the labor as paid laborers or as sharecroppers (Alexander, 1985, pp. 108-110).

After the Civil War agriculture was still the primary source of income for North Carolina's inhabitants and, though the state did not lose its textile industries to the war as did most of the other Southern States, those industries did not expand during or immediately after the war. The reconstruction period of the remainder of the 1860s was a period of economic and political turmoil, but by the 1870s the State was again optimistic about the future and realized

that an industrial economy was necessary (Tuttle, 1974, p. 49). The greatest industrial development took place during the last two decades of the nineteenth century. By 1890 some of the farms were abandoned when owners took jobs in the mills. (Pierpont, 1954, p.111). The three important industries that emerged during the 1880s and 1890s were those that provide a living for the greatest number of North Carolinians today: the textile industry, the tobacco industry, and the furniture industry.

A History of Orange County

Orange County consisted of present day Alamance, Orange, and Durham counties in 1800 (Nash, 1910, p. 56). Hillsborough, an established town located near the center of Orange, was the county seat. The largest ethnic group in nineteenth century Orange County was the Scotch-Irish who had migrated to the county on the Great Wagon Road during the eighteenth century. The English formed the next largest group and had come into the area from the coastal areas and had settled in the eastern part of the county during the mid-eighteenth century. Although fewer in number than the Scotch-Irish, the English were those who controlled the early government of the county. The Germans made up the third group of Orange county residents. They also had come into the area down the Great Wagon Road and chose to settle in the far western edge of Orange county. A fourth group to

make their homes in the county was the Quakers who farmed the Cane Creek section near the Haw River in what is now Alamance County.

The population of Orange County grew steadily until 1849 when the western third was designated as Alamance County. The slave population grew more rapidly than the white population but still amounted to less than 31 percent of the population in 1830, the year of the highest slave population. In 1860 48 percent of all land owners were slaveholders, but 21 percent of the owners possessed only one slave (Green, 1953, p. 96). Land ownership was also highly concentrated. Two-fifths of the families did not own land (Kenzer, 1982, p. 54).

Orange county families depended on each other and close kinship among families was the norm. Young people found their spouses among nearby neighbors then settled nearby (Kenzer, 1982, pp. 23-24). Kenzer (1982) found that in several southern and western communities of North Carolina only thirty to forty percent of the population stayed on through the 1850s but fifty percent of white men listed in the 1850 Orange County census were still there in 1860 (p. 32).

The majority of the people of Orange County were farmers or were otherwise linked to agriculture (Kenzer, 1982, p. 41). One group of Orange County residents who did not depend on agriculture for their livelihood were the people

of Chapel Hill, who worked at or served the University of North Carolina, which was chartered in 1789 and opened in 1795. The industrial development of Orange county began with the establishment of cotton spinning mills in its western third but was lost with the formation of Alamance county in 1849.

A History of Alamance County

The history of Alamance County, since its formation in 1849, is primarily the history of the North Carolina textile industry. Many textile mills had been established during the 1830s and 1840s, drawing people into the area, and with this rapid population growth it became apparent that a center of government nearer than Hillsborough, the Orange County seat, was needed. The North Carolina Assembly approved the formation of Alamance County in 1849 and created a new town, Graham, in the center of the county as its county seat.

A History of Durham County

Durham County was formed in 1881 of what was the eastern half of Orange County in 1849. It was settled first by people of English descent and by the Scotch-Irish (Boyd, 1925, p. 15). After the North Carolina Railroad was built in 1848 the county's population grew rapidly. Dr. Bartlett Durham sold the railroad company some land for a train station. The station established there was called Durhams-

ville later shortened to Durham's and then to Durham (Boyd, 1925, p. 27). Because of the availability of transportation, tobacco companies established processing plants there which, in turn, caused a rapid increase of population (Boyd, 1925, p. 29).

The Textile Industry in the South

The movement to bring industry to the early South was seen as an attempt to impose a "foreign system" upon a preponderantly agrarian economy. (Linden, 1940, p. 330). The textile industry might have grown more rapidly in antebellum North Carolina but it was more profitable to farm with slave labor than to manufacture cotton into cloth. (Flowers, 1978, p. 15). It was not until the agricultural depression of the 1820s that the possibility of manufacturing cotton yarns was seen as a way to profit from the south's cotton production and take advantage of a cheap labor supply. A large number of "poor whites" and some black slave laborer were idled by unprofitable agriculture. (Linden, 1940, p. 315). A third reason for encouraging manufacturing was to protect and insure the independence of the South. (Standard & Griffin, 1957, p. 157). Although there was some industrial development in the South, the abolition of slavery helped to permanently establish it in the South (Linden, 1940, p. 330).

The Textile Industry in North Carolina

The first textile mill to open in North Carolina was the Lincolnton Cotton Factory opened in 1813 (Standard & Griffin, 1957, p. 34). The next successful cotton mill was the Rocky Mount Mill built on the falls of the Tar River near Rocky Mount in 1817 (Flowers, 1978, p. 15). In the 1820s the Mount Hecla Mill was established in Greensboro and the McNeil and Donaldson Mill was opened in Fayetteville. There were 22 mills established in the 1830s, five were in the part of Orange County which later became Alamance County. Another 32 mills were built during the 1840s, three of those were located in the to-be-Alamance section of Orange County. Only five mills were built in the 1850s possibly because of the recovery of the agricultural economy. By the time the Civil War began, there were approximately 50 cotton mills operating in North Carolina. (Standard & Griffin, 1957, pp. 135, 159-160). "In the Piedmont [in 1860] Randolph and Alamance Counties ranked first and second with Gaston...a close third. Together these three counties produced nearly 37% of North Carolina's textiles" (Tuttle, 1974, p. 45). No new mills opened during the Civil War period, but from 1861 to 1865 these mills worked at full capacity. From one-half to three-fourths of their yarn and cloth was purchased by the state government. During the last months of the war the Confederate government drew its entire supply of textile goods from

the mills of upland North Carolina. Those cotton factories not burned by Sherman's or Stoneman's forces emerged from the war as bankrupt companies with worn and obsolete machinery, but their record of production justified the faith their owners had in the North Carolina textile industry (Standard & Griffin, 1957, pp. 159-160). The greater percentage of the prewar mills survived but the owners were faced with the expense of replacing machinery worn out by the heavy and constant production of the War years (Griffin, 1964, p. 34). In the decade between 1860 and 1870 just seven new mills were opened in North Carolina and only four survived into 1870. The North Carolina Industrial Revolution began in 1870 and continued until the turn of the century. (Lefler & Newsome, 1963, p. 474-489). There were 31 mills in the state in 1870, and Alamance County was the dominant textile county in North Carolina with about 33 percent of total production (Tuttle, 1974, p. 74). In 1880 16 more mills were built bringing the total to 47. By 1900 177 cotton mills operated in North Carolina (Lefler and Newsome, 1963, p. 479).

The Textile Industry in Orange, Alamance,
and Durham Counties

Historians differ as to when and by whom various mills were established. The dates and names listed in this history were selected from studies based on primary sources. E. M. Holt is usually credited with the estab-

lishment of the textile industry in Alamance County, however he was not the first to build a textile mill there. The first mill was the Big Falls Manufacturing Company built by John Trollinger in 1835. The Cane Creek Farmers and Mechanics' Manufacturing Company and the Mt. Arrat Cotton Factory were both built in 1836. The Alamance mill was opened by Holt and Carrigan in 1837. It first produced "bunch yarn," which was sold throughout the countryside for knitting or weaving (Whitaker, 1949, p.100). By 1849 the Holt-Carrigan mill began to produce and sell cloth (Pierpont, 1953, p. 14).

Though E.M. Holt held a considerable corner of the cotton mill business, he was not the only textile mill entrepreneur in what was to become Alamance County. The Snow Camp Factory opened in 1838, the Saxapahaw Cotton Mill was opened by John Newlin in 1844, the High Falls Factory by Dr. Montgomery in 1845, the Haw River Factory by James S. Boyd in 1845, and Granite Falls Mills was opened in 1845 by Benjamin Trollinger. Orange Factory was built in central Orange County by J. Webb in 1852, the only cotton mill to be built in the part of Orange County that would remain Orange. E.M. Holt was the first to open a mill after the Civil War when he established Carolina Cotton Mills in 1869. George W. Swepson opened Swepson Cotton Mill in 1874, and E.M. Holt's sons, L. Banks Holt and Lawrence S. Holt, opened Belmont Mills in 1879. The Altamahaw Mill was

founded in 1880 by Mr. Davidson and Mr. Gant, C.C. Curtis opened the Rock Creek Manufacturing Company, and Scott-Donaldson and Company built the Oneida Cotton Mill in in 1881. William and James Holt began Glencoe Mills in 1882, and LaFayette Mill was opened by F.F. Holt and Mr. McBride in 1882. In Durham, The Durham Cotton Manufacturing Company was built by Julian Carr (Boyd, 1925, p. 121). In 1885 after the Oneida Mill in Burlington was sold to L. Banks Holt, Scott-Donaldson and Company built the Sidney Mill, and Alamance Plaids Mill was opened. The Elmira Mill was established in 1886 by the Holts, and the Graham Cotton Mills began operation in 1891. At the turn of the century, there were 22 mills operating in Alamance County (Pierpont, 1953, pp. 98-99). Five mills were opened in Durham County during the 1890s. The Erwin Cotton Mill began operation in 1892 by Benjamin N. Duke. Mr. Duke began the Pearl Cotton Mills in 1893 and was bought out by William Erwin in 1899. The Durham Wooden Mill, established to furnish bobbins and shuttles to the cotton mills, was transformed into The Commonwealth Cotton Mill in 1893. The Durham Hosiery Company was organized by George W. Graham and the Golden Belt Hosiery Company was created in 1894. Neither company prospered until they were merged under new management in 1898 with the name Durham Hosiery Mill (Boyd, 1925, pp. 120-124).

The Textile Industry Workforce

A high proportion of women and children worked in the textile mills (McHugh, 1981, p. 13). Before the Civil War many of the mill operatives were young women for whom mill work was but temporary employment before marriage (Kenzer, 1982, p. 42). It was not difficult to capitalize on the skill of workers long accustomed to domestic carding and weaving (Standard & Griffin, 1957, p. 151), nor was it difficult to recruit workers because, even though wages were low. More money could be made in the mills than on sub-sistence farms (Pierpont, 1953, pp. 9-10). After the Civil War the population shifted from agrarian pursuits to the industrial sector, and entire family units went to work in the mill (McHugh, 1981, p. 6).

A History of Handweaving

Handweaving was not the preferred method of obtaining cloth in colonial America. Growing and processing fibers, and spinning and weaving the yarns was a very labor-intensive process which took time away from food production and production of income-yielding commodities such as tobacco.

The three fibers most commonly used by handweavers were flax, wool, and cotton. The steps for processing them were as follows:

Flax/Linen

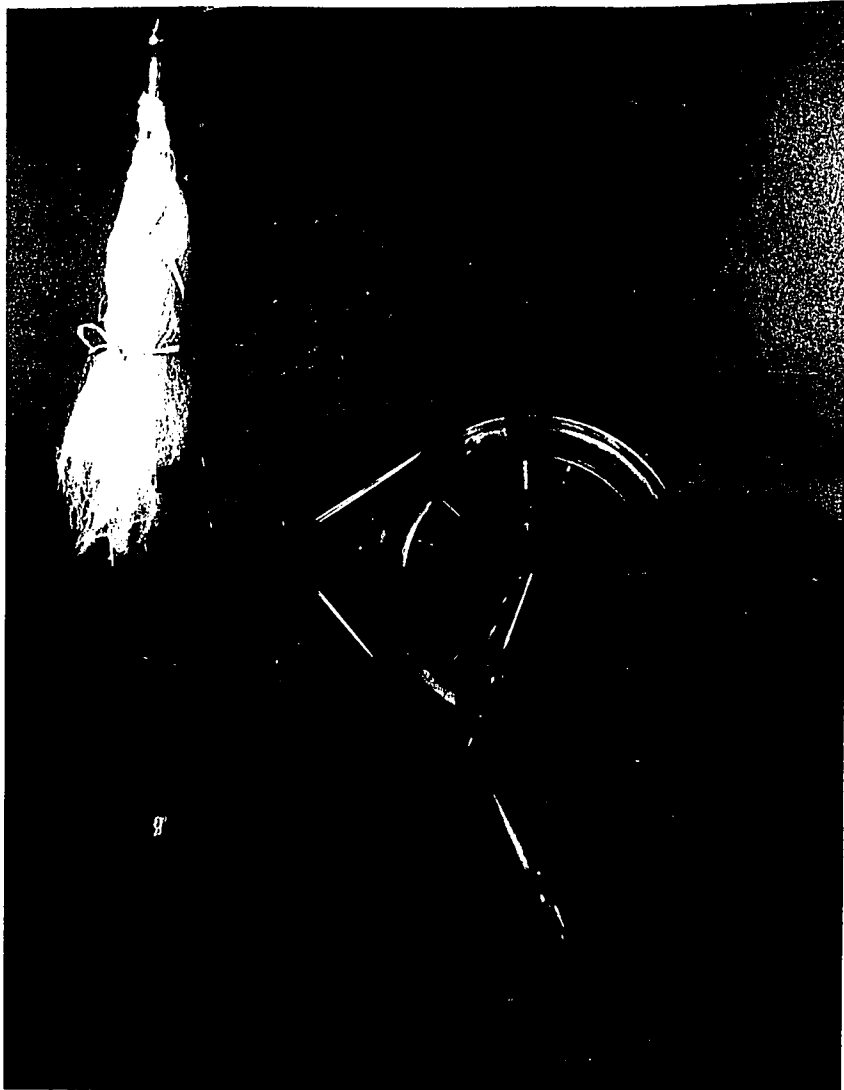
Flax was the most difficult of the three fibers to process. The flax seed was sown in the spring and the plants were pulled up by the roots in the fall. The rippling comb and hackle were used to remove the flax seeds from the stalk. After retting the flax was broken on a flax break. Scutching transformed the flax into soft, pliable fiber by scraping the outer layer of the plant with a wooden knife (Coons, 1980, p. 46). Next, the fiber was hackled by drawing the fibers through a series of hackles to further remove unwanted residue and the long "line" fibers from the short "tow" fibers. Once these processes were complete the distaff was dressed with the flax fiber which was then spun into yarn by the spinning wheel. (See figure 1 for the equipment used in flax processing). The fine linen yarn resulting from all of this arduous work was strong enough for warp and fine enough for weft and could be used to weave cloth appropriate for a number of items including clothing. The coarse tow flax was used for ticking and sacking fabrics (Coons, 1980).

Wool

Wool was also a commonly used textile fiber. The wool processing system involved first removing the wool from the sheep with shears. The sheared wool was then washed and either taken to a carding mill or carded with wool carders and formed into rolags. These rolags were spun into yarn

Figure 1.

Flax Processing Equipment



(Merrimack Valley Museum, 1977). A full day's work meant the spinning of six skeins of woolen yarn (American Coverlet Guild, 1940, p.12). (See figure 2 for a picture of the wool processing equipment.) The woolen yarn was then woven into cloth.

Cotton

Cotton was sown in the early spring and each of the bolls was harvested as it matured in the fall. The cotton fiber had to be removed from the dried boll and the seeds removed from the cotton fibers. Simple rollers resembling washing machine wringers squeezed out the seeds as the fibers were drawn between them. The fibers were then carded and sometimes rolled into "punies" over smooth rods which were then withdrawn from the cotton punies. If the carded fibers were free of debris they could be spun into yarn without having to roll it into punies. A spinning wheel of higher speed was needed to spin the cotton fiber with the extra twist needed to form a yarn strong enough for use in weaving (Coons, 1980). (See figure 3 for the cotton processing equipment.) Cotton yarns were desirable because they were comfortable to wear and represented less labor than did the home manufacture of linen yarns.

The Loom

There was one type of loom most commonly seen in Piedmont North Carolina. It was the counterbalance loom and was called the four post loom or barn loom or cantilever loom.

Figure 2

Wool Processing Equipment

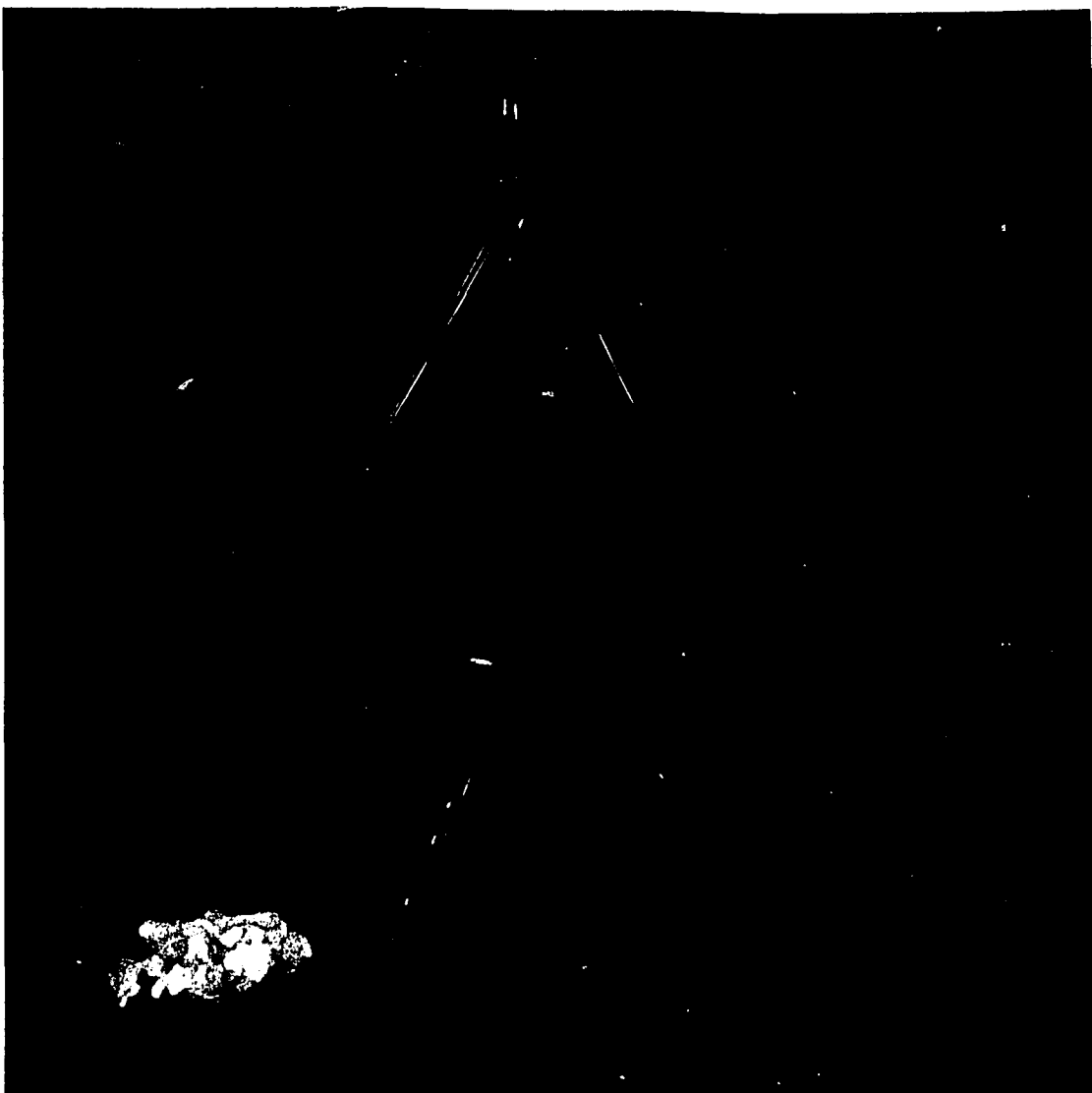
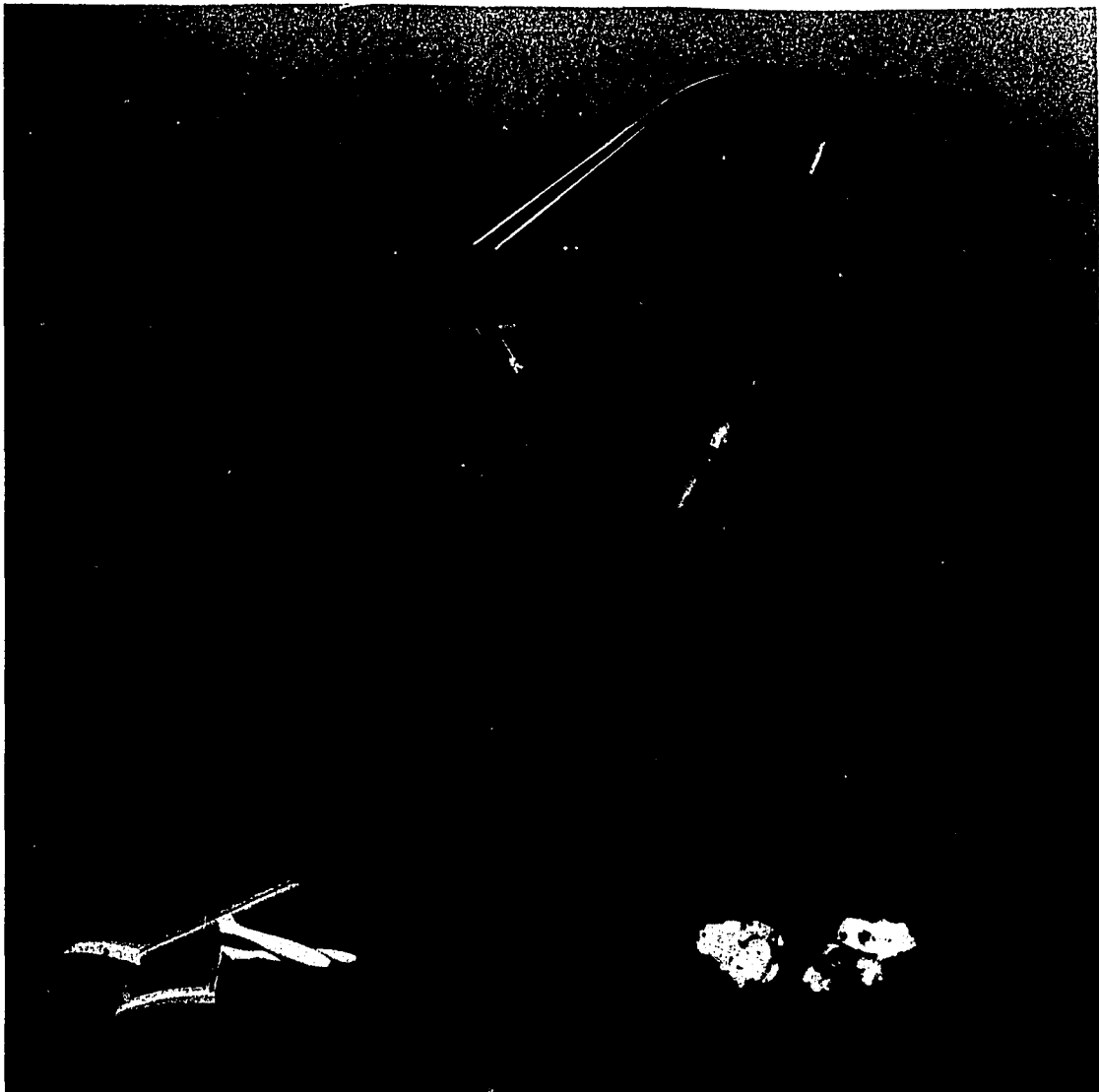


Figure 3

Cotton Processing Equipment



It usually had from two to four harnesses and could be built by a semi-skilled craftsman. The loom was either free-standing or built into the walls or porch of a house. (See figure 4.)

Handweaving in the South

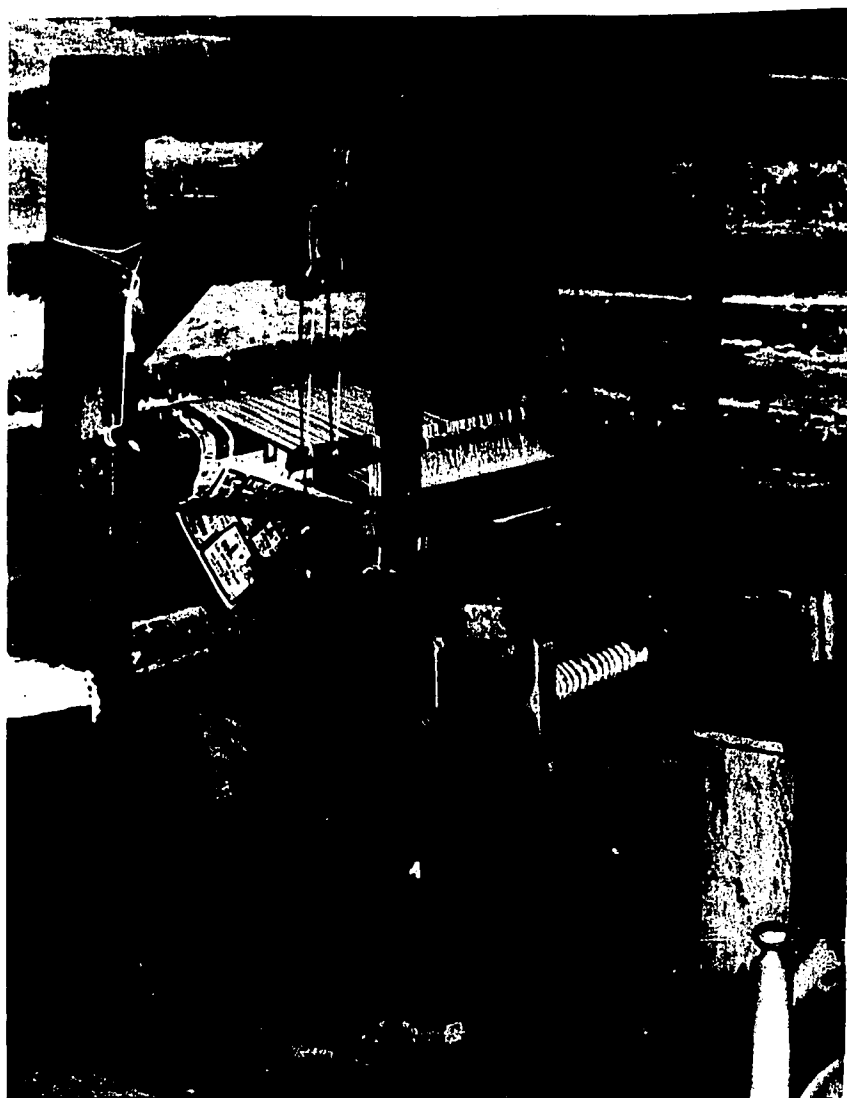
Spinning and weaving in the south were done by backcountry yeomen farm families. Plantation families and people living along the coastal regions usually purchased imported fabrics until the colonial boycotts of British goods required them to spin and weave as well (Norton, 1980, pp. 15-18). "In 1794 Tench Coxe, Assistant Secretary of the Treasury, wrote that the backcountry regions of the South Atlantic States produced textiles in greater quantities than they imported from abroad" (Standard, 1957, p. 16).

Handweaving in North Carolina

Handspinning and weaving were done in North Carolina because of isolation and lack of money to buy imported goods (Standard & Griffin, 1957, p. 17). It has been found that in North Carolina nearly every family supplied its own textile needs (Pierpont, 1953, p. 5) and that a weaving house was often part of the family dwelling (Johnson, 1937, p. 227). The early cotton spinning mills sold their yarns primarily to families to weave into textiles for their own use (Pierpont, 1953, p. 13). After the advent of

Figure 4

Counterbalance Loom



power looms in the cotton mills, less handweaving was done at the domestic level and only poor white and blacks wore "homespun" (Johnson, 1937, p. 88).

The number of home looms put back into production increased during the Civil War. After the war handweaving was once again abandoned in the North Carolina Piedmont in favor of factory-made fabrics. However, people living in the mountainous regions of the State continued handweaving crafts well into the twentieth century. Probably this was due to many of the same reasons that people of the Piedmont continued weaving after those of other regions served by good transportation or proximity to industries had given it up.

Domestic Textile Producers

It is taken for granted by most people that women were the spinners and weavers of the family clothing and household textiles. Written evidence, too, suggests that women did the spinning and weaving for the family. Standard (1957) suggested that farm wives and slave women were responsible for spinning and weaving. Spruill, in her classic work Women's Life and Work in the Southern Colonies (1972), wrote that the eighteenth century southern mistress in the settled counties did not generally spin and weave the clothing for the family until the beginning of the conflict with England when it became necessary to produce textiles at home. Even then, Spruill wrote, the spinning

was usually done by slave women. She made no mention of who did the weaving (Spruill, 1972, pp. 74-76). Clinton, in a study of plantation women of the antebellum south (1982), wrote that the plantation mistress was responsible for cloth production and clothing manufacture and that mothers required unmarried daughters to spin yarn (p. 27). Sarah Hicks Williams, a New York woman who married a North Carolina plantation owner before the Civil War, wrote this about her sister-in-law, "Spinning and weaving she attends to, besides sewing for all her family" (Bonner, 1956, p. 405). Some plantation owners employed white women to spin, weave, and sew for their slaves (Johnson, 1937, p. 524).

Spruill (1972) wrote that the backcountry housewives of the eighteenth century used the spinning wheel and loom to produce all the family clothing and household textiles (p. 81). The following was written in the Miner's and Farmer's Journal of 1830,

"±When I see a farmer appear in company genteelly dressed in homespun, I think of Solomon's description of a good wife...if the farmer's family wants new clothes, the industry of his wife supplies them" (Johnson, 1937, p. 88).

There is some evidence of women weaving for pay. Matthaei (1982) found that usually men were responsible for commodity production while women produced for the family. There were exceptions, however, when the family needed money for supplies so that the husband's earnings could be

used for capital accumulation (Matthaei, 1982, p. 31 & 32). Moravian records include repeated references to both men and women doing weaving for a living. Ten male weavers were named in the accessible Moravian records from 1766 to 1844 and seven female weavers were listed in the records from 1783 to 1832. Most of the female weavers were single or widowed. It appears that the income of the weaver was somewhat lower than that of other trades. Many of those who were called "weaver" in early records were called by other titles later. One such example is that of the Widow Buttner. The Collegium minutes of 1786 state,

" the Widow Buttner...has obtained permission to live here in Salem. For her sustentation she will receive an annual amount from her plantation, and since she is a very good weaver, she will have enough to do."

In the Collegium Minutes of 1797 is written, "Up to now the widow Buttner has made her living by doing all kinds of tailor work for men..." This was also true for the men who worked as weavers but went on to choose other trades such as tavernkeeper, gunsmith, or forester. In several instances the men were listed as "weaver, farmer" indicating that they may have participated in both occupations. Free Negro women of South Carolina were among those women who wove for a living. Johnson and Roark found that about one in six free black women did artisanal work and, of the 67 women listed as having artisanal trades, five were weavers and one was a spinner (Johnson & Roark, 1984, p. 58). No

free Negro men in South Carolina were listed as weavers. It is difficult to say if more women than men earned money for their weaving because there was no clear distinction between home and professional weaving. Most women produced textiles for family use but often earned money by weaving for others and men sometimes did the same (Coons, 1980, p. 17). After cotton spinning and weaving mills were established Johnson (1937) found that the farm wife lost opportunity for earning income from her home (p. 245).

Apprenticeship was a system by which poor orphans were trained for an occupation. Boys were usually bound to their masters until they were 21 and girls until they were 18. The binding was an indenture executed by the county court. A tradesman, merchant, mariner, or other person approved by the court was eligible to become the master of an orphan. He was to teach the apprentice a useful trade and to read and write as well as provide board and room. At the expiration of the term of indenture the master was to provide some material goods to help the ex-apprentice get along in the wider world. Typically, clothing and tools of the trade were among the severance allotments. Girls were usually taught spinning and weaving and often received a bed and furniture (bed coverings) and spinning wheel as their severance allotments (Johnson, 1937, p. 705).

The Legal Status of Women

The legal status of women in North Carolina during the nineteenth century determined, in part, what kinds of records were left by women and the traditions of inheritance. At that time English common law still influenced the legal affairs of women. Single women and widows had the same rights as men , but a married woman had no legal existence apart from her husband (Lebsock & Rice, 1984, p. 45). In 1795 the inheritance laws in North Carolina were changed so that daughters could inherit equally with sons (Winslow, 1980, p. 174), but if or when she married, the daughter's property was considered her husband's unless special provision had been made before the marriage (Leary & Stirewalt, 1980, p. 569). Occasionally an affidavit in the estate records of a deceased male stated that an item of property belonged to the widow before her marriage or was still the possession of her father and being lent to her.

Special laws providing support and or provisions for the widow and her family were enacted in 1824 by the North Carolina Assembly. The widow could request a part of the estate, usually called "the widow's allotment," for the use of her family during the probate period (Winslow, 1980, p. 175).

The widow was also entitled to a dower-right of one-third of her husband's property including the main house and outbuildings (Winslow, 1980, pp. 175-176). The dower was not

hers to sell or to transfer to a new husband but was to pass on to her husband's children after her death. Only in those cases in which she was willed land or other property "to her and her heirs forever" was she free to dispose of it as she wished. After 1868 the dower law was changed to that of "dower by common law". In this case the wife had more control of land owned by her husband at the time of marriage or acquired during the marriage. If the husband sold property without his wife's consent, she could sue the buyer for her one-third interest (Leary & Stirewalt, 1980, p. 569).

Changes in Womens' Roles

The introduction of industry, which freed the family of having to produce commodities for its own use, also changed the role of women. In the family economy the whole family produced commodities for the home and for the market (Mathaei, 1982, p. 101-102). The wage economy separated the sexes into more sharply differentiated roles. The new ideal was for women's activities to be centered around the home (Degler, 1980, p. 26). However, the reality was different for many women including the yeoman farmer's wife of North Carolina. After the Civil War when subsistence farming was no longer enough to maintain a family and textile industries were hiring workers, entire families went to work (Mathaei, 1982, p. 122).

Summary

This historical review indicates that North Carolina was isolated by its geography and somewhat by the conservative attitudes of many of its people. The textile industry began in Alamance, Orange, and Durham Counties in the 1830s, and the railroad was built through the area in 1849. The increased need for fabrics during the Civil War may have kept the home looms in operation far longer than they otherwise would have been used once the textile mill products could be obtained. Both men and women were weaving professionally but the literature indicate that women were most often responsible for producing family textiles. Very little has been written about the persistence of handweaving, and the review indicated that no systematic research about handweaving in Piedmont North Carolina has been done.

CHAPTER III

RESEARCH METHODOLOGY

Methodology Selected

Content analysis was selected as the most appropriate method for collecting and organizing the information about textile production contained in the Orange, Alamance, and Durham County estate records and wills. (The county records are available to the public at the North Carolina State Archives located in Raleigh. No special permission is needed to use the facility.) Content analysis is a means of producing objective, quantitative data from verbal or nonverbal communication which can be analyzed statistically (Paoletti, 1982, p. 14). Qualitative data were also collected from the estate records and wills. Although these data could not be analyzed statistically, they provided additional information that supplied more insight into the role of women in textile production than did the quantitative material alone.

Extant handwoven bedcoverings, were analyzed also as a means obtaining information about groups who may not have left written records behind. A press release about the research and the need for handwoven bedcoverings was sent to newspapers in Orange, Alamance, and Durham Counties with the expectation that individuals having family pieces with

a known history would respond. Seventeen people responded and several of them had more than one example of handwoven textiles. Four museums were also contacted: North Carolina Historical Museum, Alamance County Historical Museum, Alamance Battleground, and the Orange County Museum. A total of 19 bedcoverings was analyzed at three of the four museums. No textiles were recorded from the Orange County Museum.

Expectations

A pilot study was conducted in a nearby Piedmont county (Guilford) showing that many of the estate records contained references concerning domestic textile production. It was expected that the estate records of Orange, Alamance, and Durham Counties would be similar and also supply evidence of home textile production.

The development of the textile industry was expected to affect the quantity of textile production equipment found in the estate records. It was also expected that there would be a lag of 10 to 20 years between the introduction of the textile mills and the decline in quantity of equipment. The Civil War was expected to slow the decline so that there would be a) no difference or b) an increase in textile production equipment from the previous decade.

It was expected that there would be a difference between men and women in ownership patterns of textile

production equipment. The estate records of women would contain more references to textile production equipment than would the estate records left by men. This would be particularly true of the estate inventories, as it was expected that textile production equipment might make up a large part of a woman's estate. Because it was expected that textile production equipment would make up a minor part of a man's estate, fewer items would be listed. This would indicate that women were the primary domestic textile producers during the nineteenth century in the three counties investigated. It was also expected that, in the cases in which the history of the handwoven bedcoverings was known, women would be cited as the weavers.

Instruments

The instrument developed for analyzing the estate records and wills consisted of a form in which the following information was listed: date (of death), name of the decedent, sex of decedent, type of record containing references to textile production, list of textile production equipment, fiber, or fabric, and prices (if any). Uncommon information about textile production was photocopied to be used in the qualitative section of the study.

The instrument for the artifact portion of the study was more detailed than was required to meet the objectives of this study so that information about the bedcoverings

would not be lost to future researchers. The data collected from each of the bedcoverings are included in the appendix. The following information was recorded: date (if known), owner, county of origin, weaver (if known), and type of textile (coverlet, counterpane, blanket). The following physical properties of the artifact were recorded: weave structure, length and width of the completed piece, the width of each panel (if woven in narrow widths), the warp fiber, twist, ply, and sett (number of warp ends per inch), the fiber, twist, and ply for both the pattern weft (if present) and tabby (plan weave) weft. Additional distinguishing characteristics were noted along with the condition of the artifact. Each of the bedcoverings was photographed and a profile draft of the weave structure was done.

Sample

The entire population of estate records and wills available in the North Carolina State Archives and the Orange and Durham County Archives was used in this study. Each of the dated and named files of nineteenth century Orange, Alamance, and Durham Counties as well as the volumes containing information about the estates were examined. There was a total of 8,122 individual names recorded. The artifact data came from three museums and 16 individuals who responded to the press release asking for

information about handwoven bedcovering. Forty-eight bedcoverings were analyzed.

Analysis

In order to determine the importance of handweaving in the three-county area, percentages of individual pieces of equipment found in sales accounts and estate inventories during each decade were figured. A comparison of the number of industries in each decade was done to determine the effect of the textile industries on domestic production of handweaving.

Chi square statistics were used to analyze the differences in male/female ownership of textile production equipment, fiber, and fabric. The ownership of looms was determined to be the most important indicator of role in textile production and the ownership of spinning wheels was the next most important. Chi square analyses were done for looms in sales accounts, estate inventories, and wills. This was repeated for each of the pieces of equipment of primary importance in textile production. The sex of the known weavers of the extant bedcoverings was the only portion of the artifact data used in the analysis portion of this investigation and, as noted before, the other artifact data collected can be found in the appendix.

CHAPTER IV

ANALYSIS

The Equipment, Fiber, and Cloth Found in the
Estate Records and Wills

Content analysis was used to organize the information about textile production which was found in the estate records and wills. There was a total of 68 separate kinds of textile production-related items found in the estate records and wills. These can be grouped into several categories: fiber preparation, spinning, dyeing, weaving, fiber, and cloth. Under the fiber preparation category the following pieces of equipment were found: flax sieves, cotton screws, gin wheels, wool cards, cotton cards, miscellaneous cards, hackles, flax brakes, sheep shears, carding machines, gin saws, cotton gins, and flax mills (scutching mills). The spinning category included: fliers, spinning heads, miscellaneous spinning wheels, flax wheels, cotton wheels, wool wheels, great wheels, spinning machines, reels, swifts, spindles, and cotton reels. The dye category was relatively small, containing: logwood, cochineal, madder, indigo, and dye tubs. The weaving category included: quill paper, weaver's brushes, loom irons, jacks, quills, weaver's tackling (all the equipment needed for weaving except the loom), warping frames, warping reels, loom wood, looms, sleys (reeds), harnesses, shut-

ties, spools, temples, spool frames, heddles, and raddles. A variety of fiber related information was found including: wool money, cotton money (to buy fiber for spinning), bales of cotton, wool, cotton, flax, wool bats (carded wool), and tow (flax). The finished yarns were also listed as: flax thread, cotton thread, wool yarn, yarn (no specific kind), cotton yarn, warp, tow thread, and yards of warp. The last category listed was cloth which appeared as: homespun clothing (clothing not specified as "homespun" was not noted), cotton cloth, flax cloth, tow cloth, and cloth (listed as "homespun"). There was no specific mention made of wool cloth. Bed coverings appeared in the records also and were called: coverlets, coverlids, counterpanes, counterpanes, or more commonly "white counterpanes", blankets, and "bed furnishings" (which included the mattress and bed curtains, if any, as well as sheets, blankets, and coverlets). The items appearing once or infrequently were of little use in the statistical portion of the analysis.

Like types of equipment were grouped together to facilitate a comparison of the frequencies of various equipment types for each decade and a comparison of male/female ownership of equipment. For example: wool wheel, cotton wheel, flax wheel, great wheel, and miscellaneous wheel (termed "wheel" or "small wheel" in the records) were all grouped into one category labeled "wheels". Similarly all

the types of cotton fiber, flax fiber, and wool fiber were grouped into three categories and labeled "flax," "cotton," and "wool." The three types of cards were grouped as were all the various forms of yarn and cloth.

The most important indicators of home textile production were looms, spinning wheels, and fiber. Hand carders were included in the analysis because they were listed in the widows' allotments and other records with spinning wheels. This equipment was frequently included in the estate records and wills along with flax hackles, sleys (reeds), cloth, and yarn. The flax hackles, sleys, cloth, and yarn were not analyzed statistically because the other types of equipment were considered better indicators of home textile production. Most of the other textile production-related items appeared too infrequently for detailed statistical analysis.

The Effect of the Textile Mill Industry on Domestic
Production of Textiles

Table 1 shows the number of textile industries in the three-county area for each of the decades in the nineteenth century. Most of the mills were located in what came to be Alamance County. Orange County had just one mill which operated for about fifteen years and Durham County had five mills, all established in the last decade of the nineteenth century.

Table 1

Textile Mills Opened and Closed in Each Decade from the
1830s to the 1890s in Orange, Alamance, and Durham Counties

Decade	Mills Opened	Mills Closed	Total Mills
1830s	5	0	5
1840s	4	1	8
1850s	1	1	8
1860s	1	1	8
1870s	2	0	10
1880s	8	0	18
1890s	6	1	23

The Presence of Textile Production Equipment in the Records

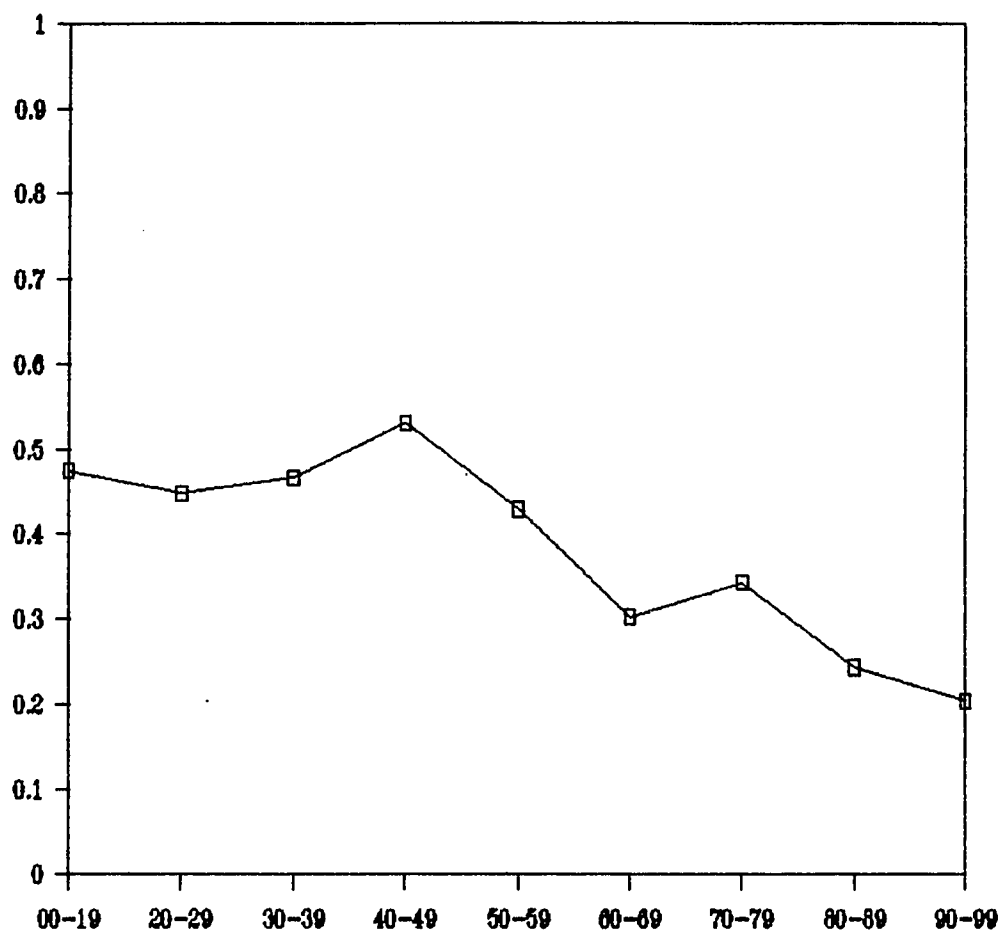
Many of the documents found in the estate records made reference to textile production, but the most reliable information came from the estate sales accounts. Every piece of moveable property that was not willed or allotted to the widow, but sold, was listed. Spinning and weaving equipment other than that listed may have been present in the household but did not appear in the records if otherwise allotted. The following four figures indicate the percentages of equipment and fiber found in the sales accounts. The percentages refer to the number of estate sales accounts having references to the equipment and fiber, not the number of pieces of equipment. There may be one or several pieces in each sale.

Figure 5 shows the percentage of estate sales records listing looms. This does not show the number of looms found in each record nor can it be said that the looms listed were being used.

The differences among the percentages of estate sales accounts having looms during the first five decades of the nineteenth century were small and may have been due to variations in estates rather than an indicator of increases or decreases in loom ownership. The variation was between a low of 44 percent and a high of 53 percent during the five decades. There was a 10 percent drop in loom ownership in the 1850s which may have indicated that

Figure 5

Percentage in Each Decade of Sales Accounts with Looms



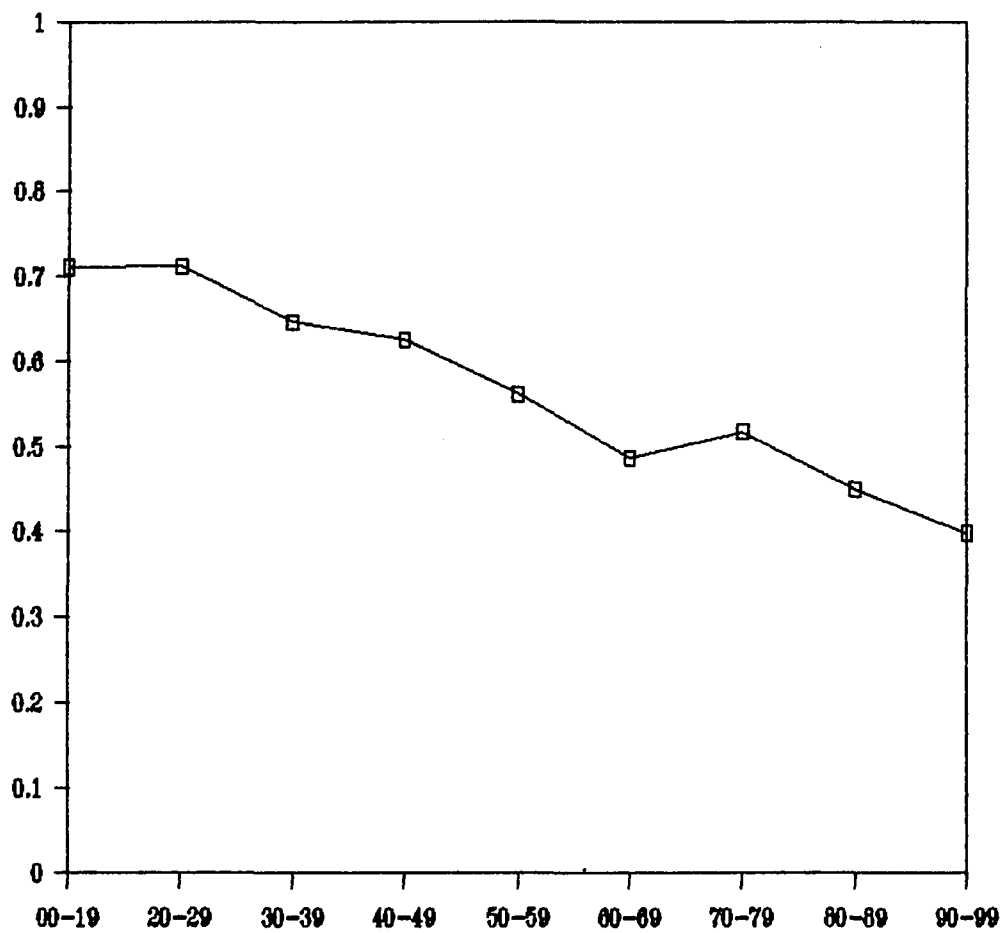
fewer looms were being used. There was also a decline in the number of looms found in the 1860s estate sales accounts. Loom ownership was expected to remain the same as the previous decade or to increase during this time. The decline of loom ownership during the remainder of the nineteenth century was expected to be much more rapid as indicated by the pilot study. The three counties showed 20 percent of sales accounts with looms in the 1890s and the pilot county had just five percent of sales accounts with looms during the same decade. Since the pilot study was conducted in an adjacent county with fewer textile mills, an even smaller percentage of sales accounts was expected to show looms in the three study counties.

Figure 6 shows the percentage of estate sales accounts containing references to spinning wheels. This figure shows the percentage of estate sales accounts with spinning wheels, not the number of wheels found.

Spinning wheel ownership during the first three decades of the nineteenth century remained fairly even with a variation of one percent. The percentage of wheels dropped seven percent in the 1830s, the same decade in which the textile mill industry was introduced. The number of spinning wheels found in the estate sales accounts continued to decline slowly until the 1870s when there was a slight increase. This might indicate that more wheels were built in the sixties and remained in the estates into the

Figure 6

Percentage in each Decade of Sales Accounts with Spinning Wheels



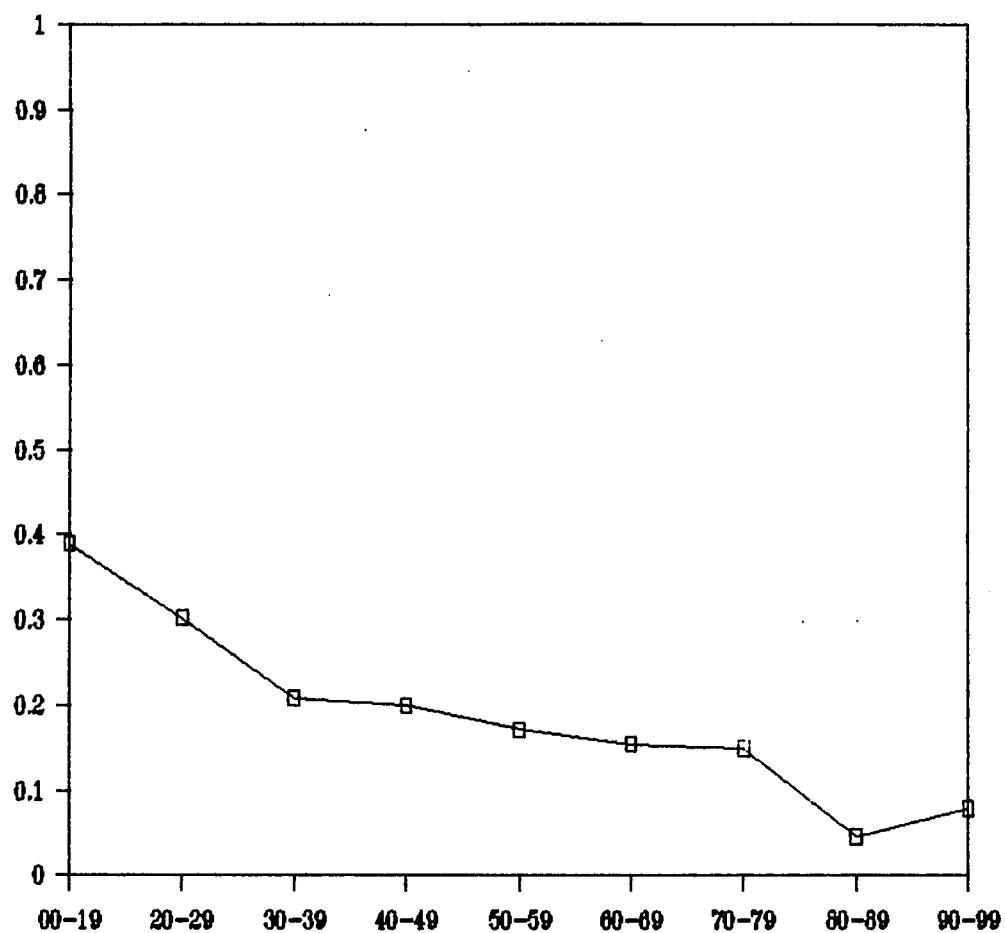
seventies. The only craftsmen's bills showing spinning wheel repairs or new wheels were from the 1860s. The next two decades showed the expected decline in spinning wheel ownership with 40 percent of the estate sales showing spinning wheels in the 1890s. The greater number of wheels may have indicated that more spinning wheels were present at the beginning of the century so more would be extant at the end of the century. Another possible reason that many spinning wheels were found in the records is that they were easier to store than were the larger bulkier looms. These data indicate that the cotton spinning industry did have an impact on spinning wheel ownership, because before the introduction of the industry, more than 70 percent of the estate sales accounts showed the presence of wheels. After the cotton spinning industry was established, there was a steady decline to 40 percent of estate records showing spinning wheels in the 1890s.

Figure 7 shows the percentage of estate sales accounts containing carders for preparing fiber for spinning.

It was expected that there would be as many sales accounts with cards as there were with spinning wheels. This did not occur. Since carding fiber was a very tedious process and many carding mills were available in the three-county area, people may have had their fiber carded at a mill rather than carding it at home, or, the cards may have been sold with the spinning wheel and not mentioned in the

Figure 7

Percentage for Each Decade of Sales Accounts with Cards



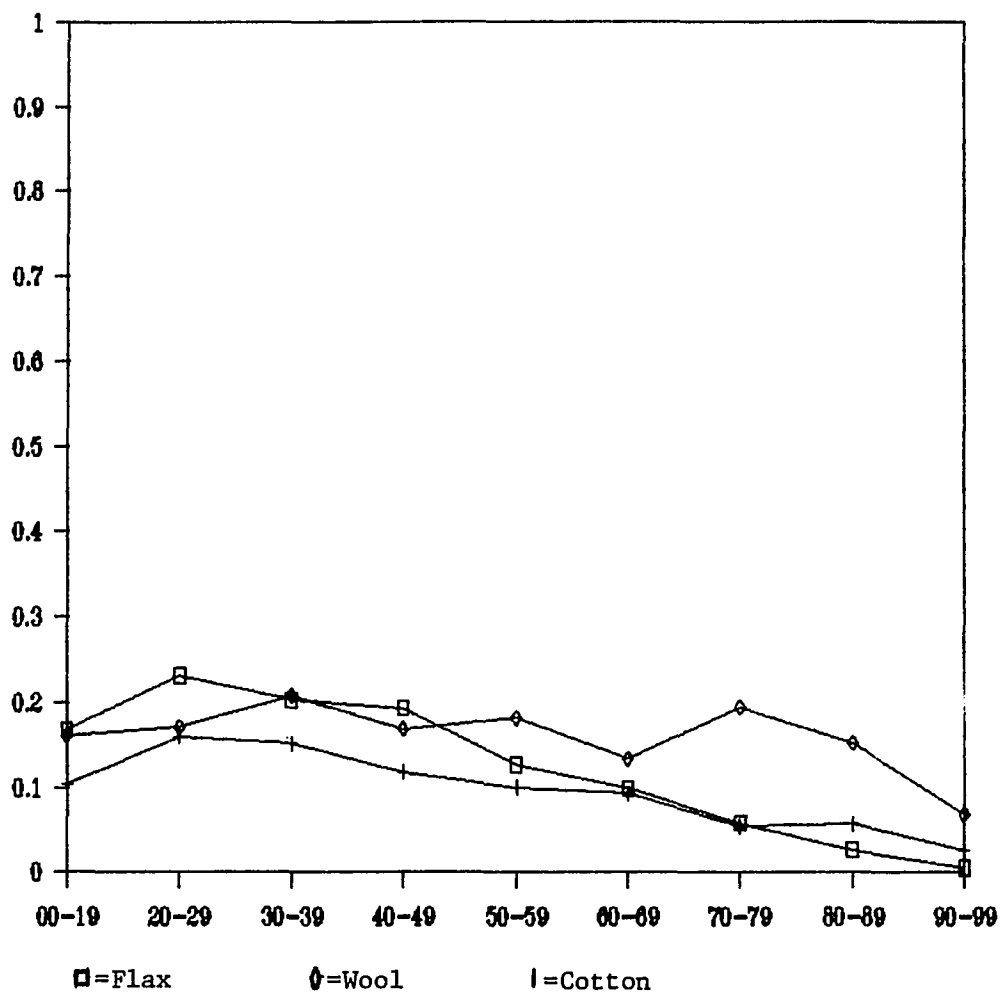
sales accounts. Since other very small, moveable property was listed, this seems unlikely. There is another possibility. The widows' allotments provided a "wheel and pair of cards" as part of the items given to them to support their families and if only one pair of cards was found in the household they would not have been included in the estate sale. The cards, which were relatively small in size, may have been sold as part of the "lot plunder" often listed in the sales accounts.

The percentage of estates with cards followed the trend of spinning wheels with a greater percentage of sales accounts having cards in the first three decades and a fairly rapid decline throughout the century. There was a slight rise of three percentage points in the last decade which may have been due to natural variation rather than to an increase in the percentage of cards owned.

Fiber was found in various forms and amounts but for most, it was impossible to figure true measures. Flax was most commonly listed as "stacks," "bunches," and "lots". Cotton and wool were usually listed in pounds. Each of the fibers was found in varying degrees of refinement. Flax could be listed as "cut", "rotted", "broke", and "hackled". Cotton was usually listed as "picked" or "baled". Wool could be "dirty", "clean", "carded", or "roles". Figure 8 shows the percentages of estate sales accounts with fiber.

Figure 8

Percentage in Each Decade of Sales Accounts with Fiber



The percentage of sales accounts with fiber was far lower than anticipated. The expectation was that there would be at least as many sales accounts with fiber as spinning wheels and probably more. The kinds of fiber found in each decade were somewhat unanticipated. Flax was found often in the early nineteenth century sales accounts and wool was the most commonly found fiber at the end of the century. During the middle decades, flax, cotton, and wool were found in nearly the same percentages of sales accounts. During the early part of the nineteenth century families may have found it worthwhile to spend time to process flax. However, after the mills employed unmarried females in the 1830s and 1840s, and later employed whole families, flax processing no longer was a good economic practice. It was expected that cotton would be the fiber most frequently found from the 1850s onward. It is possible that cotton, when grown in the Piedmont, was sold to the mills rather than retained for family use.

A Comparison of Male and Female Estates Containing
Fiber Production Equipment

Chi square statistics were used to compare male/female ownership of textile production equipment. The pieces of equipment considered most important in determining the role of women in domestic textile production were used to test the null hypothesis: there was no difference between men and women in textile production equipment

ownership. Those were the loom, spinning wheel, and carders. Caution must be used in making generalizations about use of the equipment. A loom might have appeared in the estate of a man or woman which was used by another person.

Comparison for Spinning Wheels

The number of sales accounts and estate inventories which included spinning wheels is listed by sex for each decade in table 2. With the number of wheels is the population of males or females whose estate records included sales accounts or inventories.

The percentage of males having spinning wheels was similar to the sales accounts and estate inventories for the whole nineteenth century. Fifty-four percent of males with sales accounts in the records left spinning wheels and 55 percent of males with estate inventories left spinning wheels. There was a 28 percentage point difference between the two types of records for women. Seventy percent of those having sales accounts contained spinning wheels and only 52 percent with estate inventories had spinning wheels listed. Future investigation may provide an explanation for the difference in the number of spinning wheels found in the two types records for women, while the number of wheels in the two types of men's records were very similar. It appeared that there would be a statis-

Table 2

Number of Spinning Wheels and Total Number of Males and Females Found in Sales Accounts and Estate Inventories for Each Decade

Decade	Sales Accounts		Estate Inventories	
	Males	Females	Males	Females
1800-1809	42/59*	5/6	36/36	1/2
1810-1819	135/196	17/19	115/145	10/14
1820-1829	185/259	15/22	111/148	10/18
1830-1839	86/140	29/38	51/70	9/17
1840-1849	141/242	44/54	89/122	23/28
1850-1859	137/284	76/96	80/137	27/45
1860-1869	132/290	35/54	56/118	8/18
1870-1879	82/178	43/64	50/119	17/28
1880-1889	89/204	29/59	31/126	8/32
1890-1899	47/143	29/48	21/114	5/24
TOTAL	1,076/1,995	332/460	640/1,156	118/226

*Spinning Wheels/Population

tically significant difference in the number of spinning wheels owned by men and by women for sales accounts but that there would be no difference in ownership of wheels found in the estate inventories. The chi square analysis showed a P value of 3.841 or above determined whether the null hypothesis would be rejected. (See results in tables 3 and 4.)

There were many decades in which the null hypothesis was rejected but not quite as many as were expected. The " null hypothesis was rejected in five of the decades and accepted in five. The decade of the 1880s was a surprise because it was expected that all the acceptances or rejections would be grouped together. The chi square statistic went from 8.4083 in the seventies to 0.5648 in the eighties and back up to the 11.3849 in the nineties. It is possible that men who died in that decade had more wheels than usual and that the women who died had fewer wheels than usual. Another possible explanation might be that fewer relatives of the deceased men kept wheels and more relatives of the deceased women decided to keep the wheels.

As was expected, the null hypothesis that there was no difference between male and female ownership of spinning wheels for estate inventories was accepted for all the decades. There was a drop in the test statistic in the 1880s for the estate inventories just as there was for the sales accounts. The rise in the 1890s was not as dramatic

Table 3

Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis that Males=Females Ownership of Spinning Wheels for Sales Accounts

Decade	Chi Square Test Statistic	Accept/Reject the Null Hypothesis
1800-1809	0.4013	Accept
1810-1819	3.5468	Accept
1820-1829	0.1042	Accept
1830-1839	2.8968	Accept
1840-1849	10.1536	Reject
1850-1859	27.8586	Reject
1860-1869	6.7868	Reject
1870-1879	8.4083	Reject
1880-1889	0.5648	Accept
1890-1899	11.3849	Reject

Table 4

Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis that Males=Females Ownership of Spinning Wheels for Estate Inventories

Decade	Chi Square Test Statistic	Accept/Reject the Null Hypothesis
<hr/>		
1800-1809	Grouped with 1810-19	-----
1810-1819	0.2798	Accept
1820-1829	3.0707	Accept
1830-1839	2.5349	Accept
1840-1849	1.0173	Accept
1850-1859	0.0361	Accept
1860-1869	0.0569	Accept
1870-1879	3.1947	Accept
1880-1889	0.0022	Accept
1890-1899	0.0755	Accept

for the inventories as it was for the sales, however. The raw data for estate inventories showed that about one fourth of the men had spinning wheels and about one third of women left a record of wheels. This finding was just the opposite of what occurred in the sales accounts and confirms the possibility that the relatives of females may have kept the wheels. Now the question must be asked, "Does this information prove that women or men did the family spinning?" The statistical information is not strong enough to state that the test statistic proves that women did the spinning. It does indicate that women left a record of spinning wheels in the records as often as men did. If the raw data are checked in those cases in which the null hypothesis was rejected, women left records of spinning wheels more often. The listing of spinning wheels in the sales accounts and inventories alone does not say that women used them. Supporting information is needed before it could be stated that women had a significant role in producing yarns for family use.

Comparison for Carders

Carders were not completely necessary in the textile production process because some of the fibers could be spun into yarns without being carded. However, there were many carding mills located throughout the region. The carders were included as part of the test statistics because they

were a prominent part of the widows' allotments and their presence might have helped explain some of the unexplained variations for spinning wheels. The number of carders found for each decade and the sex of the owner is listed by type of record in table 5.

There was a difference in the percentages of carder ownership between males and females for the whole century and a much greater difference for sales accounts. Only 18 percent of the males had carders listed in the sales accounts and 25 percent of the females' sales accounts listed carders. There was a much smaller difference between males and females having carders listed in the estate inventories with the males having the greater percentage. It was expected that there would be no difference in ownership of carders for estate inventories but, in at least some decades, for sales accounts the null hypothesis would be rejected. (See table 6 for the chi square test for difference between male and female carder ownership for sales accounts).

The null hypothesis was rejected for four decades and accepted for four. In the first three decades as many men as women left a record of carders in the sales accounts. By the 1830s a greater percentage of women had carders listed in the estate records. This may have been partially due to the Act of Assembly of 1824 which stated that a wheel and pair of carders should be included in the widow's

Table 5

Number of Carders for Each Sex and Each Decade for Sales
Accounts and Estate Inventories

Decade	Sales Accounts		Estate Inventories	
	Males	Females	Males	Females
1800-1809	19/590*	3/6	22/57	0/2
1810-1819	79/196	8/19	67/145	4/14
1820-1829	82/259	3/22	48/148	4/18
1830-1839	24/140	13/38	21/70	4/17
1840-1849	43/242	16/54	29/122	10/28
1850-1859	36/284	29/96	20/137	8/45
1860-1869	35/290	18/54	18/118	3/18
1870-1879	23/178	13/64	6/119	7/28
1880-1889	5/204	7/59	6/126	0/32
1890-1899	8/143	7/48	1/114	3/24
TOTAL	354/1,995	117/460	238/1,156	43/226

*Carders/Population

Table 6

Chi Square Test Statistic for Acceptance/Rejection of the
Null Hypothesis Male=Female Ownership of Carders Listed in
the Sales Accounts

Decade	Chi Square Test Statistic	Accept/Reject the Null Hypothesis
1800-1809	Grouped with 1810-19	-----
1810-1819	0.2970	Accept
1820-1829	3.1221	Accept
1830-1839	5.2876	Reject
1840-1849	3.8918	Reject
1850-1859	15.5534	Reject
1860-1869	15.7938	Reject
1870-1879	2.0308	Accept
1880-1889	9.3128	Reject
1890-1899	4.0126	Reject

allotment for support while the estate was being settled. If the family had just one pair of carders they would have been allotted to the widow and not sold. There is a greater problem in attempting to explain why there was no difference in carder ownership during the 1870s. By the seventies, even though the phrase "one wheel and cards" was included in the widows' allotments, the need for including them was disappearing because the cotton spinning and weaving industry was growing. The widows' allotments often included "if they be available" along with the customary "wheel and cards." The raw data showed that fewer carders appeared in both males' and females' sales accounts toward the end of the nineteenth century. The null hypothesis was rejected for the 1880s so the possibility of variations in carder ownership did not help to explain why the null hypothesis for spinning wheels was accepted.

The estate inventories may have provided additional information about carders, but the numbers were even more reduced, and one half the decades would have been combined to do a statistically valid analysis. It was determined that a chi square test would not have been reliable because the cards were too few in number.

Comparison for Looms

The presence of looms in the estate records was considered to be the most important indicator of the role of

women in the domestic production of textiles. The number of looms found in the records for each sex and the total number of males and females in sales accounts and estate inventories for each decade are listed in table 7.

The percentages of persons leaving records of loom ownership for the entire century were: 39 percent of males and 37 percent of females with sales accounts left a record of loom ownership. Forty-three percent of males and 30 percent of the females with estate inventories left a record of loom ownership. It appeared that there would be no difference between male and female ownership of looms when looking at sales accounts and that there would be a significant difference when looking at estate inventories. The chi square test was used for each decade for sales and inventories to test for differences in male/female ownership of looms. The first decade was grouped with the second to meet the necessary minimum of five frequencies for the chi square test. There was just one observation of looms for females in the sales accounts and none in the estate inventories in the first decade. (See table 8.)

The null hypothesis that there is no difference in male and female ownership of looms found in sales accounts was accepted in eight of the decades and rejected in two. For the sales accounts the decades in which there were significant differences in loom ownership were the 1830s and 1850s. Seven more men had looms than expected so the

Table 7

Number of Looms and Number of Total Sales Accounts and
Estate Inventories for Each Sex and Decade

Decade	Sales Accounts		Estate Inventories	
	Males	Females	Males	Females
1800-1809	28/59*	1/6	20/57	0/2
1810-1819	94/196	10/19	93/145	6/14
1820-1829	119/259	7/22	82/148	4/18
1830-1839	72/140	11/38	42/70	3/17
1840-1849	134/242	23/54	70/122	13/28
1850-1859	112/284	51/96	71/137	19/45
1860-1869	83/290	21/54	40/118	7/18
1870-1879	58/178	25/64	42/119	9/28
1880-1889	52/204	12/59	25/126	5/32
1890-1899	28/143	11/48	9/114	2/24
TOTAL	780/1,995	172/460	494/1,156	68/226

*looms/population

Table 8

Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis for Male=Female Ownership of Looms in Sales Accounts

Decade	Chi Square Test Statistic	Accept/Reject the Null Hypothesis
<hr/>		
1800-1809	Grouped with 1810-19	-----
1810-1819	0.1348	Accept
1820-1829	1.6363	Accept
1830-1839	6.0697	Reject
1840-1849	2.8947	Accept
1850-1859	5.4882	Reject
1860-1869	2.2756	Accept
1870-1879	0.8767	Accept
1880-1889	0.6595	Accept
1890-1899	0.2462	Accept

null hypothesis that there would be no difference in loom ownership was rejected. In the 1850s ten more females had looms than the expected frequency, therefore the null hypothesis that male and female loom ownership would be the same was rejected. (See table 9 for the statistics of looms appearing in estate inventories).

In the 1820s five more men owned looms, and during the 1830s 10 more men owned looms than were expected, causing the null hypothesis to be rejected during those decades. It is possible that because there was no significant difference in male and female loom ownership, females probably did have a significant role in domestic textile production. The decade of the 1830s indicated there was a strong difference and the raw data showed that men had significantly more looms for both types of records. The inventories for the 1820s also showed significantly more men with looms. This information indicated that men had a greater role in weaving in the early part of the nineteenth century. Research done in other mid-Atlantic states about weaving practices in the eighteenth century indicates that men had the primary role in weaving (Scholley, 1982). The increased number of looms belonging to women who left sales account records may indicate that women assumed the primary role for weaving by mid-nineteenth century in the central North Carolina Piedmont.

Table 9

Chi Square Test Statistic and Acceptance/Rejection of the Null Hypothesis that Male=Female Loom Ownership for Estate Inventories

Decade	Chi Square Test Statistic	Accept/Reject the Null Hypothesis
1800-1809	Grouped with 1810-19	-----
1810-1819	0.2336	Accepted
1820-1829	7.0777	Rejected
1830-1839	9.8259	Rejected
1840-1849	1.1045	Accepted
1850-1859	1.2495	Accepted
1860-1869	0.1720	Accepted
1870-1879	0.0993	Accepted
1880-1889	0.2949	Accepted
1890-1899	0.0052	Accepted

The quantitative data indicated trends in ownership patterns of textile production equipment. For most pieces of equipment and most decades there was little difference in male and female ownership of textile production equipment. For this reason, additional methods of research must be pursued to answer the question of women's role in the domestic production of textiles. The next sections will cover the more qualitative information which was found in the estate records and artifacts in the three study counties.

The Widows' Allotments

The widows' allotments included some information that provided insight into the role of women in domestic production of textiles. The widows' allotments were provisions for the use of the widows and their families during the period of time, usually one year, needed for settling the estate. The references about textile production included: looms, spinning wheels and carders, fiber, yarn, and finished textiles. Table 10 shows the frequency of textile production related items.

The frequency of observations for allotments and all the textile related categories rose dramatically in the 1820s. That same year the North Carolina Assembly passed an Act of Assembly concerning widows' allotments.

Looms were not included in the widows' allotments until the 1820s when nine percent of the allotments had them.

Table 10

Textile Production References in the Widows' Allotments for Each Decade

Decade	Loom	Wheel	Cards	Fiber	Yarn	Cloth	#A
1800-1809		1	1	4			12
1810-1819				2	1	1	3
1820-1829	9	21	21	33	4	1	102
1830-1839	1	33	33	23	4	1	82
1840-1849	9	107	106	48	11	5	145
1850-1859	11	53	48	18	2	2	83
1860-1869	22	68	69	26	5	3	108
1870-1879	8	12	4	2	1		44
1880-1889	6	12	3	4			76
1890-1899	5	10	1	2	2		69
TOTAL	71	317	286	162	30	13	724
Percentages of Total	10%	44%	40%	22%	4%	2%	

#A=Number of Allotments in that decade

Only one allotment listed a loom in the 1830s but after that there was a gradual rise in frequency from six percent in the forties to 20 percent of the allotments having looms in the sixties. A decline in the number of looms found began in the 1870s and by the 1890s seven percent of the allotments referred to the presence of looms.

There was one observation of a spinning wheel in the allotments in the first decade of the nineteenth century and none in the second. The 1840s had the greatest frequency of spinning wheels for the century with 74 percent of the allotments having wheels. A gradual decline began in the 1850s, and by the nineties only 14 percent of allotments listed wheels.

Fiber was found in allotments of every decade. In the first half of the nineteenth century, with the exception of the second decade, about one-third of the widows' allotments had fiber. There was a gradual decline through the next three decades and a rapid decline in the presence of fiber in the allotments during the last three decades. Only three percent of the allotments had fiber in the 1890s.

Although the percentages of allotments which had looms were low, the fact that the use of a loom was granted to the widow does imply that she later put it to use. A common phrase found in the allotments tended to confirm that: "...all the bed clothing of family domestic man-

ufacture." An allotment of 1824 in which this phrase appeared also included a loom. There were numerous statements such as the following of 1822, "the flax and cotton we consider there is not more than could be sufficient to clothe the family." Another account of 1816 read, "all the flax on hand to cloath her children." It is unknown whether the widows in these cases spun and wove "the cloath to clothe their families" themselves or if they did part of the process, or took all the fiber to someone else to do the whole process of preparing the fiber, spinning, and weaving.

Other Documents with Information about Textile Processing

The other documents that had information about textile processing were bills from craftsmen, guardian records, retail merchants' records, court testimony, and wills. A bill of 1818 showed that a woman was earning money for her weaving. A receipt in the estate of John Cabe showed payment of \$2.50 "To James Hornes wife for weaving 25 yards of Cloath." There were five other such bills from women who wove for remuneration. One bill from a male weaver was found. It is possible that more men wove as a profession but that none of their business records happened to be in the Orange County estate records.

The information gained from the guardians' records was sparse. There were occasional references to suits of

clothing of "homespun," but nothing more substantial until the record of John Turner, who died in 1839, was examined. An indenture was found in his estate records for "an orphan girl named Nancy Turner aged about 8 years daughter of John Turner Deceased." Her master, Eli Carroll, was to "teach and instruct or cause to be taught and instructed, the said Nancy Turner to learn to read and write, and also the art and mistery (sic) of spinster and arithmetic as far as the rule of three" (Turner, 1839).

Records having to do with retail merchants indicated that some domestic production occurred. The most numerous items concerning textile production were the carders, which sold from between fifty and ninety-five cents a pair. There was also an occasional notation of "homespun" which was sold at the store. It is possible that "homespun" meant North Carolina-made rather than the fabric having been made at a home. It is probable that people with little cash but with a flax or cotton patch and time to weave traded the cloth for items at the store.

Court testimony, also found in the estate records, showed that women wove. A court document of 1843 read, "the said Mary replied that She had a web of cloth to weave and then she would be ready Said Mark his (sic) proposed to hire some one to do the the weaving alleging he was apprehensive that said Mary's constitution was too delicate to weave Said Mary replied that if she could save him a shil-

ling she would weave it herself" (Gaskill, 1843). In the 1886 estate records of John Whitaker, his granddaughter alleged that she, "kept house, cooked, milked, churned, sewed, knit, spun and wove, washed and ironed, and assisted on the farm in planting and cultivating grain cotton and garden, also assisted in hauling wood and crops" for her grandfather (Whitaker, 1846). Another document of March 5, 1889 in the estate records of Thomas Berry read "she could never learn to put her yarn in geer for weaving" (Berry, 1889).

The wills indicated that women may have played a major role in domestic textile production from the beginning of the century. In the decade of 1800 to 1810 twelve men willed looms and just one willed his to a male. Eleven looms were willed to females. In the second decade just two looms appeared in the wills and one was left to a male and one to a female. In the twenties, eight males left looms to females. The first looms that appeared in wills of women were in the 1830s when six females and 11 males left looms to two males and fifteen females. Seven males and four females willed looms to eleven females in the 1840s and six males and four females willed looms to ten females in the 1850s. In the 1860s the frequency of looms appearing in the wills began to decline. In that decade five males and one female left looms to six females. Four males and three females left looms to one male and six

females in the 1870s, in the 1880s just one female left a loom to a female, and in the nineties two females left looms to two females. In 86 percent or more cases females were the recipients of looms. These data provided the strongest evidence that women were responsible for home textile production.

The Bedcoverings

Bedcoverings were an important product of nineteenth century North Carolina Piedmont weavers for not only did they have a utilitarian purpose but they had decorative value as well. Most of the Piedmont settlers' homes were simple houses with few rooms that served multiple purposes. Nearly every room had a bed and that bed would have been covered with a fancy coverlet or counterpane if the family could afford the time to make one or the money to buy one. Less well-off families probably would have used a colored blanket. The bed was important in the homes of the more wealthy also. In her book Textiles in America (1984), Florence Montgomery wrote that the bed was the most important object in the house (p. 15). The bed remained important in the nineteenth century home, and painstaking care was lavished on its "furnishings." The coverings created for the bed were prized and passed from generation to generation more often than were handwoven garments, thereby surviving to be studied.

An oral history of each of the bedcoverings of known origin was recorded in addition to a physical analysis of each artifact. Most of the bedcoverings owned by individuals had known histories so that names of the weavers could be recorded. The name of the weaver was known for only two of the museum pieces. All the bedcoverings analyzed were purported to have originated in one of the three counties. See table 11 for the number of bedcoverings found in each county and the number with known weavers.

Table 11

Total Number of Bedcoverings and Those with a Known Weaver from Each of the Study Counties

County	Number of Bedcoverings Analyzed	Bedcoverings with Known Weavers
Orange	2	2
Alamance	40	14
Durham	2	1
Total	44	17

Nearly all the bedcoverings analyzed were purported to have originated in Alamance County. Most of the those who responded to the press release were from Alamance County possibly because the Alamance County paper put the press release on the front page and included a photograph of the investigator and some handwoven bedcoverings. The news-

papers from the other counties ran a very short synopsis on an inner page of the press release with no photograph.

Most of the Alamance Countians contacted knew other people who had handwoven bedcoverings while the respondents from other counties did not. The investigator was living in Alamance County during the time period of the investigation and that too probably had an impact on those who responded to the press release.

All seventeen of the bedcoverings attributed to known weavers were believed to have been woven by women. Most of the known weavers were relatives of the owners of the bedcoverings and information about them had passed from generation to generation through oral tradition. One of the known weavers was a woman who lived in the neighborhood and wove for other people. She used her clients' looms and materials to produce bedcoverings for their use. It was not known how much she was paid for her work.

The handwoven bedcoverings provided information about technology and materials available and the aesthetic values and needs of their weavers. Most of the bedcoverings that survived from the nineteenth and early twentieth century were the fancy, more decorative ones. Plain utilitarian blankets tended to be used until they were completely worn out and then were thrown away. The decorative bedcoverings were saved and the most frequent extant examples are the white "counterpanes" and colored overshot "coverlets."

Weave Structures

Five weave structures were used in the bedcoverings. They were tabby or plain weave, twill weave, overshot, and velour or cord weave. (See the appendix for a more detailed account of the physical analysis.)

Ply

All of the single ply yarns, regardless of the fiber, were spun with a Z-twist and those that were two-ply were Z-twist and plied with an S-twist. The yarns were spun by almost everyone in the family and, by having a consistent Z-twist, no one accidentally untwisted the yarns while plying.

Fiber

There was just one bedcovering made with linen. All 39 of the other bedcoverings had white cotton warps. Four twill weave blankets had wool wefts. The white counterpanes were 100 percent cotton and the overshot coverlets had a cotton tabby weft and wool pattern weft.

Sett

The sett refers to the number of ends of warp per inch of width. The sett varied from 20 ends per inch to 48 ends per inch. Sett is of particular significance because it indicated that, although it was technically possible to weave tabby blankets, cord weave, and overshot on the same warp threading, the loom was prepared for each type of

weave. (See the appendix for a more detailed analysis of these data.)

Width and Number of Loom Widths Used
in the Bedcoverings

Usually even the widest loom was not wide enough to make a bedcovering the full width of the bed so two or more loom widths were sewn together. Even when a loom was wide enough the weaver often elected to use two widths rather than one because less of the warp was wasted when a narrower cloth was woven. Usually 18 to 36 additional inches of warp yarns were needed to tie from the warp beam to the cloth beam and could not be woven. This additional warp is called loom waste. A narrower width might also have been chosen because of the weaver's reach. Thirty-six inches was a comfortable weaving width. See table 12 for the number of widths used and the width measurements.

The observations concerning number of loom widths tends to confirm the speculation that weave structures were planned for specific projects.

Length and Width

Five of the bedcoverings no longer were the original length and width because of alteration by their present owners or because extreme deterioration made it impossible to take accurate measurements. Table 13 shows the lengths and widths within 5" increments.

Table 12

Number of Loom Widths and Measurement in Inches Found in
Extant Bedcoverings

Width	Two Loom Widths	Three Loom Widths
25"		1 Counterpane
26"		
27"		3 Counterpanes
28"		1 Counterpane 1 Coverlet
29"		2 Coverlets
30"	1 Coverlet	2 Counterpanes 1 Coverlet
31"	1 Coverlet	1 Counterpane 1 Coverlet
32"	2 Coverlets	
33"	1 Tabby Counterpane 1 Coverlet	
34"	3 Coverlets 1 Twill Blanket	
35"		
36"	10 Coverlets	
37"		
38"	1 Coverlet	

Table 13

The Length and Width and Frequencies of the Bedcoverings

Width									
Length	60"	2 2	65"	70"	75"	2 2	80"	85"	90"
75"	1-0	2 2				2 2			
80"	1-B	2 2	1-0	3-0 1-C	1-C	2 2	1-0 1-C		
85"	1-0	2 2	2-0	3-0 4-0	2-C 1-0	2 2			
90"		2 2	2-0	1-C	1-B	2 2		1-0	
95"	1-0	2 2	1-T	2-0		2 2			1-0
100"		2 2	1-C			2 2			1-C
105"		2 2				2 2			

O-Overshot, C-Cord weave, B-Blanket, T-Tabby Counterpane

Twenty-four of the bedcoverings measured between 80 and 95 inches long by between 65 and 75 inches wide. Another nine had either a length or width that came within the most frequent lengths and widths. There was just one overshoot coverlet that was shorter and narrower than most bedcoverings and one that was both longer and wider than most. Even though most of the bedcoverings tended to fall within certain measurements, there was much variation in lengths and widths.

Color

All of the counterpanes were white as was one blanket. There were nine coverlets with a white warp and tabby combined with a two color red and blue pattern weft. One blanket also had this combination of colors. Five of the overshoot coverlets had a pattern weft of black and red and the usual white warp and tabby. There were three overshoot coverlets of blue and white, thought to be the most common of the color combinations used. Another three overshoot pieces had pattern wefts of red and green; three others had red and brown pattern wefts; and three additional bedcoverings used a combination of blue and lavender in the pattern weft. Lavender and black were used for the pattern weft of one overshoot coverlet and purple and brown were used in another. The remaining colored pieces were are blankets. One was grey and white and one was a solid brown. There may

have been even more colors used but because certain dyes may have caused the fibers to deteriorate, the textiles no longer exist.

The investigation about bed clothing indicated that the bed certainly was a most important object in the house. The weaver carefully planned for each type of bed covering and dyed the necessary yarns, sett the ends per inch for each weave structure, planned for the number of widths needed, and probably wove to fit the bed. Bed coverings were probably an outlet for the weavers' creativity and provided items of beauty to decorate their homes.

The Role of Women in Textile Production

The total picture of quantitative plus qualitative data indicates that women did have a major role in weaving for their families and that a few wove for others as well. These data do not prove that women were the principal weavers but indicate that they had a major role in weaving for the family in the central Piedmont of nineteenth century North Carolina.

CHAPTER V

SUMMARY AND IMPLICATIONS

Summary

North Carolina was considered an unsophisticated, conservative State in which people preferred the tried-and-true methods of living and working rather than experimenting with new ways. Most of Orange, Alamance, and Durham Counties' population had close-knit families who earned a living through farming. These families were thrifty with their resources and conservative in their attitudes (Pierpont, 1953 and Kenzer, 1984). It could be expected that they might be slow to change practices of providing textiles for their families, but some of the literature suggested that by 1840 spinning and weaving had been abandoned in favor of industrially made goods (Johnson, 1937). Textile fabrics were available in the region at the end of the 1850s (Bolden, 1979, Whitaker, 1949, and Standard & Griffin, 1957). There was evidence in the literature that weaving persisted well into the second half of the nineteenth century (Pinchin, 1979 and Eaton, 1973). Secondary sources (Johnson, 1937, Bonner, 1956, and Clinton, 1982) provided information of women being responsible for family textile production. Both secondary sources (Matthaei, 1982 and Coons, 1980) and primary sources (Mora-

vian Records, 1743-1841) stated that both men and women wove professionally. Johnson and Roark (1984) wrote about free black women weaving professionally but found no evidence of black men doing textile production. The literature revealed no clear answers about how much textile production went on in the central North Carolina Piedmont, how long spinning and weaving persisted, or whether men or women were responsible for producing textiles.

The purpose of this investigation was: first, to determine the amount of home textile production and the effects of the textile mill industry on home production; secondly, to determine the role of men and/or women in domestic textile production in Orange, Alamance, and Durham Counties during the nineteenth century. Estate records and wills were the investigative sources. Content analysis was used to systematically organize textile production information by date, name, sex, type of document, piece of equipment, and price. Persons owning nineteenth century, handwoven bed-coverings were interviewed concerning the history of each piece. The pieces of equipment considered most important to home manufacture of textiles were analyzed by decade to determine how much home textile production was done before and after the advent the textile mill industry. In order to determine who was responsible for textile manufacture, textile production equipment found in men's estate records was compared through chi square statistical analysis to the

same found in women's estate records. The qualitative data used to assess role in home textile production included information from estate record documents and wills as well as the oral histories of the extant bedcovering.

The Amount of Home Textile Production and
the Effect of the Textile Industry

The contents of estate records indicated that home textile production was commonly done. Before the textile mill industry came into the region between 44 and 53 percent of the sales accounts contained looms. Seventy-two to 65 percent of the sales accounts showed the presence of spinning wheels before the advent of the textile mill industry. More wheels than those found in sales records were owned but allotted to the widow or willed to family members. The textile mill industry affected the numbers of equipment owned but not as much as was expected. About one-third of the households had looms in the 1870s and about half had spinning wheels. The qualitative information corroborated that data. Court records of the 1880s made reference to weaving, and many of the extant bedcoverings were believed to have been woven in the last quarter of the nineteenth century.

The effect of the textile industry on domestic textile production was not as great as was formerly believed. Both the quantitative data and qualitative information from the estate records showed that spinning and weaving declined

over a fairly long period of time. References to home weaving were made in court records as late as 1889. The Civil War may have had some effect on the continuation of home textile production through the 1860s and 1870s. If the war had not taken place, home production may have faded faster than it did.

There are questions still to be answered about how much textile production was done at home. Some of those questions are: (1) Were there differences between socio-economic classes in the amount of textile production done? (2) Are there other public records which might have evidence of home textile production? (3) What extant textile equipment can be found in North Carolina? (4) What extant textiles including bedcovering exist and how might they be accessed for investigation? (5) What are the family stories about hand weaving and the early textile industry? (6) What kinds of yarns were used before and after the cotton spinning mills made machine-spun yarn available? (7) What kinds of weaving continued to be done at home after the mills began the weaving process? Were only special items woven, or were the most common fabrics woven at home? (8) What kinds of fabrics were produced at home to support the war effort? Were they fabrics for the family or for the soldiers?

Additional means of locating textile production equipment other than press releases would have to be found. An oral history project could be used to learn the history of

weavers and the textiles they produced. There are many other counties in North Carolina to be studied to learn about differences in home textile production between the various regions.

The Role of Women in Domestic Textile Production

The quantitative data from sales accounts and estate inventories showed that women owned as much, and in most cases, more textile production equipment than men. If women had no role in textile production, it is unlikely that so much equipment would have been listed in their estate records. The qualitative information included in the estate records also supported the supposition that women had a primary role in domestic textile production. The widows' allotments included many observations of the equipment and materials needed for textile production. In fact, the widow's allotments included, by law, a spinning wheel and carders. A loom was often added to the allotment as were fiber and bedcoverings "of domestic family manufacture". Other documents, such as the guardian records and bills from craftsmen, though not present in quantity, support the idea that women wove. The wills provided information which indicated that women had a significant role in domestic textile production in nineteenth century Alamance, Orange, and Durham counties. In 86 percent or more cases, the looms and spinning wheels were willed to

women. All the bedcoverings with a known history were attributed to women weavers.

There are many possibilities for future research concerning the people who used the equipment that appeared so frequently in the estate records. This investigation showed that women owned and operated textile production equipment and sometimes were even paid for their work; however, further investigation needs to be done. One of the complicating factors is that of slavery. Did slaves, men or women or both, operate the equipment found in the inventories? If so, was fabric produced used for slaves or owners or both? Were certain types of fabrics produced by women or men? Did cultural background influence who wove and the kind of weaving done? How much time was allotted to textile production and were specific processes done during certain seasons of the year? Were children involved in textile production and, if so, at what age did they begin? The secondary sources indicated that children of both sexes worked at the same tasks in the textile mills when they were younger but the tasks were sex differentiated as they reached young adulthood. Was this also true of home textile production and at what age was task differentiation likely to take place?

Analysis of the Method

Content analysis was an effective method of accomplishing the purposes of this study because of the specific kinds of information sought in the estate records. Chi square was an appropriate test to determine whether there were differences between ownership patterns of textile production equipment between males and females. This analysis aided in ascertaining tendencies in ownership patterns which were an aid in discovering the role of women in domestic textile production.

There were additional data that could be collected that would allow the data to be analyzed in other ways. These data would have been the costs of common commodities and the number of slaves owned by the householders. The common commodities could be used to analyze comparative worth of textile production equipment throughout the century. This would be complicated since various types of monetary specie were used during the nineteenth century in North Carolina. The ownership of slaves would provide information about the socio-economic level of families owning textile production equipment.

Additional ways of contacting families who owned historical textiles were needed. It is possible that the manner in which the press release was written attracted more Alamance Countians than those from the other two counties. Additional time spent in local museums or at a

booth set up at community events may have provided an avenue for more people to share their family textiles.

Implications of the Investigation

The information learned about handweaving corroborates the idea that women were weavers. The idea of women weavers is commonly held and has some foundation in fact. One-third or more families represented in this investigation owned looms, and because families of nineteenth century Alamance, Orange, and Durham Counties were close-knit, most families had access to a loom. Museums which include fiber processing equipment as part of their interpretation are reasonably accurate. It can be expected that other regions having history of a conservative, thrifty population would show longer persistence of textile production.

BIBLIOGRAPHY

- Alamance County in Industrial North Carolina. The Peoples Magazine. 2, 3. June 1915. pp. 243-260.
- Alexander, R.S. (1985) North Carolina faces the freedmen. Durham, NC: Duke University Press.
- American Coverlet Guild. (1940) Heirlooms from old looms. Chicago: American Coverlet Guild.
- American Psychological Association. (1983) Publication manuel of the American psychological association. Washington, DC: APA.
- Atwater, M.M. (1951) The shuttle-craft book of American handweaving. New York: MacMillan Publishing Co., Inc.
- Beckow, S.M. (1975) On the nature of the artifact. Gazette 8. pp. 13-15.
- Black, M.E. (1980) The key to weaving. New York: MacMillan Publishing Co., Inc.
- Bolden, D. (1979) Alamance in the past. Burlington, N.C.: P.N. Thompson Printing Co. Inc.
- Bogdonoff, N. (1975) Handwoven textiles of early New England. Harrisburg, Pa: Stackpole Books.
- Bonner, J.C. Plantation experiences of a New York woman. The North Carolina historical review. XXXIII, 3. July 1956. pp. 384-412 and XXXIII, 4. October 1956. pp. 529-548.
- Boyd, W. (1925) The story of Durham, city of the new south. Durham, NC: Duke University Press.
- Bronson, J.& R. (1977) Early American weaving and dyeing. New York: Dover Publications, Inc. (Originally published in 1817.)
- Brown, C.K. A history of the Piedmont railroad company. The North historical review. III, 2, April 1926. pp. 198-222.
- Broudy, E. (1979) The book of looms. New York: Van Nostrand Reinhold Company.

- Bulla, B. Saxapahaw cotton mills, the first hundred years. Cotton history review. II, 3. July 1961. pp. 132.
- Burnham, D.K. (1980) Warp and weft. Toronto: Royal Ontario Museum.
- Burnham, H. & Burnham, D.K. (1972) ±Keep me warm one night. Toronto: University of Toronto Press.
- Channing, M. (1971) The textile tools of Colonial homes. New Bedford, Mass: Reynolds-DeWalt Printing, Inc.
- Clinton, C. (1982) The plantation mistress. New York: Pantheon Books.
- Cohen, M. Changing perception of the impact of the industrial revolution of female labor. International journal of women's studies. 7, 4. pp. 291-305.
- Cohn, R. Local manufacturing in the antebellum south and midwest. Business History Review. LIV, 1. Spring 1980. pp. 80.
- Collins, H. The idea of a cotton textile industry in the south, 1870-1900. The North Carolina historical review. XXXIV, 3, July 1957. pp. 358-392.
- Connor, R.D.W. (1920) Race elements in the white population of North Carolina. Greensboro, NC: North Carolina State Normal & Industrial College.
- Coons, M. (1980) Linen-making in New England. North Andover, Mass: Merrimack Valley Textile Museum.
- Cott, N.F. (1977) The bonds of womanhood. New Haven: Yale University Press.
- Cott & Pleck. (1979) A heritage of her own. New York: Simon and Schuster.
- Coxe, T. (1814) A statement of the arts and manufactures of the United States for the year 1810. Philadelphia, Pa: A Cornman, Jr.
- Davidson, E. The child-labor problem in North Carolina, 1883-1903. The North Carolina historical review. XIII. 2. April 1936. pp. 105-121.

- Davison, M. (1944) A handweaver's pattern book.
Swarthmore Pa.: Marguerite P. Davison.
- Davison, M. (1953) A handweaver' source book.
Swarthmore Pa.: Marguerite P. Davison.
- Degler, C.N. (1980) At odds. New York: Oxford
University Press.
- Eaton, A.H. (1973) Handicrafts of the southern
highlands. New York: Dover Publications, Inc.
(Originally published in 1937.)
- Eaton, C. (1968) The civilization of the old south.
Lexington, Ky: The University of Kentucky Press.
- Flowers, J. (1978) Orange factory. Durham, NC: Orange
Factory Preservation Society.
- Frey, B. (1958) Designing and drafting for handweavers.
New York: MacMillan Publishing Co., Inc.
- Friedman & Shade. (1982) Our American sisters.
Lexington, Mass: D.C. Heath and Company.
- Gehrke, W. Negro slavery among the Germans in North
Carolina. The North Carolina Historical Review.
XIV, 4, October 1937. pp. 307-324.
- Glassie, H. (1972) Folk art. Dorson, R.M. ed. Folklore
and folklife: an introduction. Chicago: University
of Chicago Press.
- Green, F. (1953) Slavery in Orange County. Lefler &
Wager eds. Orange County: 1752-1952. Chapel
Hill, N.C.: Orange Printshop.
- Griffin, R. List of North Carolina cotton manufacturers
to 1880. The textile history review. 3, 4, 1962.
pp.222-231.
- Griffin, R. Reconstruction of the North Carolina textile
industry, 1865-1885. The North Carolina
historical review. XLI,1. January 1964. pp 34-53.
- Groves E. (1944) The American woman. New York:
Emerson Books, Inc.
- Hughes, J. (1965) Development of the textile industry in
Alamance County. Burlington, NC: Burlington Letter
Shop.

- Hunt, L. (1979) Remember the ladies. New York: Viking Press.
- Johnson, G. (1937) Ante-bellum North Carolina: a social history. Chapel Hill: University of North Carolina Press.
- Johnson & Roark. (1984) Black masters: a free family of color in the old south. New York: W.W. Norton and Company.
- Journals of the Senate and House of Commons of the General Assembly of the State of North Carolina at its session in 1823. Raleigh: J. Gales and Son, State Printers. (1824)
- Kennedy, . (1858) Abstract of the statistics of manufactures according to the returns of the seventh census (1850). Washington, DC: Secretary of the Interior.
- Kenzer, R. Portrait of a southern community, 1849-1881: family, kinship, and neighborhood in Orange County, North Carolina. Harvard. Phd Dissertation, 1982.
- Kerber & Mathews. (1982) Women's America. New York: Oxford University Press.
- Leary & Stirewalt, Eds. (1980) North Carolina research: genealogy and local history. Raleigh, NC: The North Carolina Genealogical Society.
- Lebsock & Rice. (1984) "A Share of honour": Virginia women 1600-1945. Richmond Va: Virginia Women's Cultural History Project.
- Lefler & Newsome. (1963). North Carolina. Chapel Hill: The University of North Carolina Press.
- Lefler & Wager, Eds. (1953) Orange County 1752-1952. Chapel Hill: The Orange Printshop.
- Lemert, B. Geographic influences in the history of North Carolina. The North Carolina historical review. XII, 4. October 1935.
- Linden, F. Repercussions of manufacturing in the antebellum south. The North Carolina historical review. XVII, 4. October 1940.

- Lord, C. Ed. (1968) Raleigh-Durham-Chapel Hill.
New York: Teachers College Press.
- Main, G. Personal wealth in Colonial America:
explorations in the use of probate records from
Maryland and Massachusetts, 1650-1720. Columbia
University, PhD. 1973.
- Matthaei, J.A. (1982) An economic history of women
in America. New York: Schocken Books.
- McHugh, C. The family labor system in the southern
cotton textile industry, 1880-1915. Phd Dissertation,
Stanford University. 1981.
- Merrimack Valley Textile Museum. (1977) Homespun to
factory made: woolen textiles in America, 1776-
1876. North Andover, Mass: Merrimack Valley Textile
Museum.
- Montgomery, F. (1984) Textiles in America 1650-1870.
New York: W.W. Norton and Company.
- Moravian Transcriptions. (1731-1841) Winston-Salem, N.C.:
Museum of Early Southern Decorative Arts.
- Nash, F. (1910) The history of Orange County: part I.
The North Carolina booklet. X,(2).
- Norton, M.B. (1980) Liberty's daughters. Boston: Little,
Brown and Company.
- Olmsted, F.L. (1959) The slave states. New York:
Capricorn Books.
- Olmsted, F.L. (1971) The cotton kingdom. New
York: The Bobbs-Merrill Company, Inc.
- Opper, P. North Carolina quakers: reluctant slaveholders.
The North Carolina historical review. LII, 1,
January 1975. pp. 37-58.
- Ossoli, M. (1852) Woman in the nineteenth century.
New York: Greenwood Press, Publishers.
- Partridge & Adrosko. (1985) Made in New York State:
handwoven coverlets 1820-1860. Watertown, New York:
Jefferson County Historical Society.

- Pierpont, A. Development of the textile industry in Alamance County, North Carolina. Dissertation University of North Carolina-Chapel Hill. 1953
- Pinchin, C.B. (1979) Jane Cox her draft for counterpins. Interweave. IV,(3).
- Prown, J.D. (1979) Mind in matter: an introduction to material culture theory and method. Winterthur portfolio 17. pp. 1-19.
- Scholley, P.L. (1982) Domestic textile production in Kent County, Maryland, 1755-1775. Unpublished Masters Thesis, The George Washington University.
- Singer, C., Holmyard, E.J., Hall, A.R., Williams, Trevor I. (Eds.) A History of technology (Vols. 4-5). Oxford: The Clarendon Press.
- Spruill, J. (1972) Woman's life and work in the southern Colonies. New York: W.W. Norton & Company, Inc. (Originally published in 1938.)
- Standard & Griffin. (1957) The cotton textile industry in antebellum North Carolina part I: origin and growth to 1830. North Carolina historical review. XXXIV, 1. January 1957. pp. 15-35.
- Standard & Griffin. The cotton textile industry in antebellum North Carolina part II: an era of boom and consolidation 1830-1860. North Carolina historical review. XXXIV, 2. April 1957. pp. 131-164.
- Stockard, S. (1900) The history of Alamance. Raleigh, NC: Capital Printing Company.
- Straub, M. (1977) Handweaving and cloth design. New York: Viking Press.
- Taylor, G.T. (1958) The transportation revolution: 1815-1860. New York: Rinehart and Company, Inc.
- Taylor, J. The great migration from North Carolina in 1879. The North Carolina historical review. XXXI, 1, January 1954. pp. 18-33.
- Thompson, H. (1906) From the cotton field to the cotton mill. New York: MacMillan Company.
- Tovey, J. (1969) Weaves and pattern drafting. New York: Van Nostrand Reinhold Company.

- Tuttle, M. The location of North Carolina's nineteenth century cotton textile industry. MA Thesis. University of North Carolina: Chapel Hill, 1974.
- Vuchan (1953) Physical characteristics. Lefler & Wagner eds. Orange County: 1752-1952. Chapel Hill, N.C.: Orange Printshop.
- Walker, S. (1981) Country cloth to coverlets. University Park: The Pennsylvania State University Press.
- Weitheimer, B. (1977) We were there: the story of working women in America. New York: Pantheon Books.
- Whitaker, W. (1959) Centennial history of Alamance County 1849-1949. Burlington, NC: Alamance County Historical Association.
- Wilson, K. (1982) Handweavers 1800-1840. Interweave. V, (2). Spring 1980. pp. 50-52.
- Wilson, K. (1979) A History of textiles. Boulder, Co: Westview Press.
- Wilson & Kennedy. (1983) Of coverlets. Nashville, Tenn: Tungstede Press.
- Winslow, R. County records. Leary & Stirewalt, Eds. North Carolina research, genealogy and local history. Raleigh, NC: The North Carolina Genealogical Society. 1980.
- Woodmason, C. (1953) The Carolina backcountry on the eve of the Revolution. Chapel Hill, NC: The University of North Carolina Press.
- Worst, E.F. (1974) Weaving with foot-power looms. New York: Dover Publications, Inc.
- Young, J.M. (1984) Eighteenth-century fabric furnishing in Anne Arundel County, Maryland: an inventory analysis. Unpublished Masters Thesis, University of Maryland.

APPENDIX A

Estate Record Data Collection Sheet

Date	Sex	Name of Decedent	Document	Equipment	Price
------	-----	------------------	----------	-----------	-------

Artifact Data Collection Sheet

Number:

Date:

Owner:

County of Origin:

Weaver:

Type Textile:

Weaver Structure:

Length: Width (Loom Widths):

Sett:

WARP:

Fiber: Color(s): Twist: Ply:

WEFT:

Tabby Fiber: Color(s): Twist: Ply:

Pattern Fiber: Color(s): Twist: Ply:

Notes:

Provenance:

Condition:

APPENDIX B

The Composition of the Estate Records and Wills

Table 14

Estate Records and Wills by Sex for Each Decade

Decade	Estate Records		Wills	
	Males	Females	Male	Females
1800-1809	218	18	155	17
1810-1819	536	74	18	0
1820-1829	466	65	167	22
1830-1839	370	101	178	50
1840-1849	497	143	190	64
1850-1859	544	202	152	64
1860-1869	545	109	132	29
1870-1879	430	127	158	83
1880-1889	580	156	249	112
1890-1899	643	165	198	95
TOTAL	4,829	1,160	1,579*	536

*1810-1819 omitted

Table 15

The Number of Sales Accounts Found in the Estate Records and
the Percentage of Estate Records having Them

Decade	Sales Accounts		% of Estates Represented	
	Males	Females	Males	Females
1800-1809	59	6	27%	33%
1810-1819	196	19	37%	26%
1820-1829	259	22	56%	34%
1830-1839	140	38	38%	38%
1840-1849	242	54	49%	38%
1850-1859	284	96	52%	48%
1860-1869	290	54	53%	50%
1870-1879	178	64	41%	50%
1880-1889	204	59	35%	38%
1890-1899	143	48	22%	29%
TOTAL	1,995	460	41%	40%

Table 16

The Number of Estate Inventories Found in the Records and
the Percentage of Estate Records Having Them

Decade	Estate Inventories		% of Estates Represented	
	Males	Females	Males	Females
1800-1809	57	2	25%	11%
1810-1819	145	14	27%	19%
1820-1829	148	18	32%	28%
1830-1839	70	17	19%	17%
1840-1849	122	28	25%	20%
1850-1859	137	45	25%	22%
1860-1869	118	18	22%	17%
1870-1879	119	28	28%	22%
1880-1889	126	32	22%	21%
1890-1899	114	24	18%	15%
TOTAL	1,156	226	24%	19%

Table 17

Number and Percentage of Widow's Allotment in the Estate Records

Decade	Widow's Allotments	% of Estates Represented
1800-1809	12	06%
1810-1819	3	01%
1820-1829	103	22%
1830-1839	82	22%
1840-1849	146	29%
1850-1859	83	15%
1860-1869	108	20%
1870-1879	44	10%
1880-1889	76	13%
1890-1899	69	11%
TOTAL	726	15%

Table 18

Frequency of Guardian Accounts, Retail Sales Accounts, and
Bills from Craftsmen Found in the Estate Records

Decade	Guardian Accounts	Retail Sales Accounts	Bills from Craftsmen
1800-1809	0	4	1
1810-1819	0	0	0
1820-1829	2	9	2
1830-1839	1	5	1
1840-1849	0	8	2
1850-1859	0	2	1
1860-1869	1	8	1
1870-1879	0	1	0
1880-1889	0	0	0
1890-1899	0	0	0
TOTAL	3	37	8

APPENDIX C

The Bedcoverings

Handwoven bedcoverings are examples of artifacts which provide information about technology and materials available and the aesthetic values and needs of their weavers. Bedcoverings were an important product of the nineteenth century because they had a decorative as well as utilitarian purpose. The bed and "its furnishings" (the fabric coverings and hangings) were part of the widows' allotments (North Carolina State Archives, Nineteenth Century) and even part of the property exempted from seizure for debt in nineteenth century North Carolina (Johnson, 1937, p. 656). In the homes of the North Carolina yeomen, the bed coverings provided one of the few means of creative expression and beauty. Because the "furnishings" created for the bed were prized and passed from generation to generation, many have survived to be studied.

Most of the bedcoverings that survived from the nineteenth and early twentieth century were the fancy, more decorative ones. Plain utilitarian blankets tended to be used until they were completely worn out and then were thrown away. The decorative bedcoverings were saved and the most frequent extant examples are the white "counterpanes" and colored overshot "coverlets."

Weave Structures

Five weave structures were used in the bedcoverings. They were tabby or plain weave, twill weave, overshot, and velour or cord weave.

The weave structure most frequently found in extant bedcoverings was the overshot weave (figure 9). It was one of the most colorful of the patterned weaves that could be easily produced on the simple four harness counterbalance loom. It probably was not the most frequent weave used in bedcoverings, however. It was time consuming to weave because it required two shuttles, one carrying the weft pattern yarn and the other carrying the weft tabby (plain weave) yarn. Color was needed to show the overshot structure to its best advantage and required additional time to dye the yarns. A white overshot could be woven, but other weave structures which could be woven with just one shuttle gave much the same effect. The fact that so many overshot coverlets have survived indicates that bedcoverings made with this technique were considered to be special.

The second most frequently found weave structure was the cord weave (figure 10). This weave could be done with just one shuttle and no dyeing was required to get the full effect of the weave. However, the weave structure was difficult to accomplish on the common counterbalance loom. It is a one-harness against three-harness weave which would result in a split shed on the counterbalance loom, not im-

Figure 8

Overshot Weave

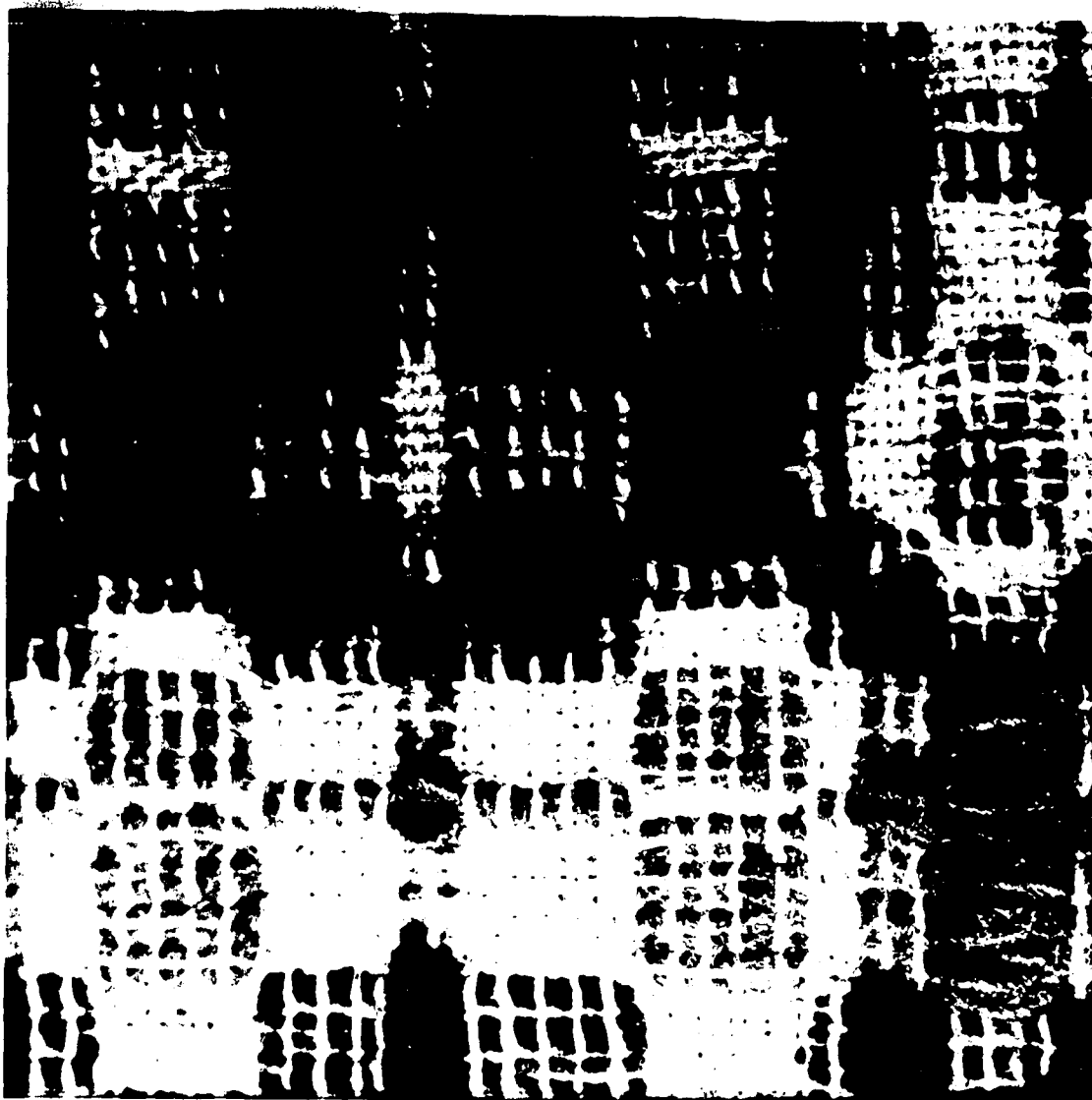
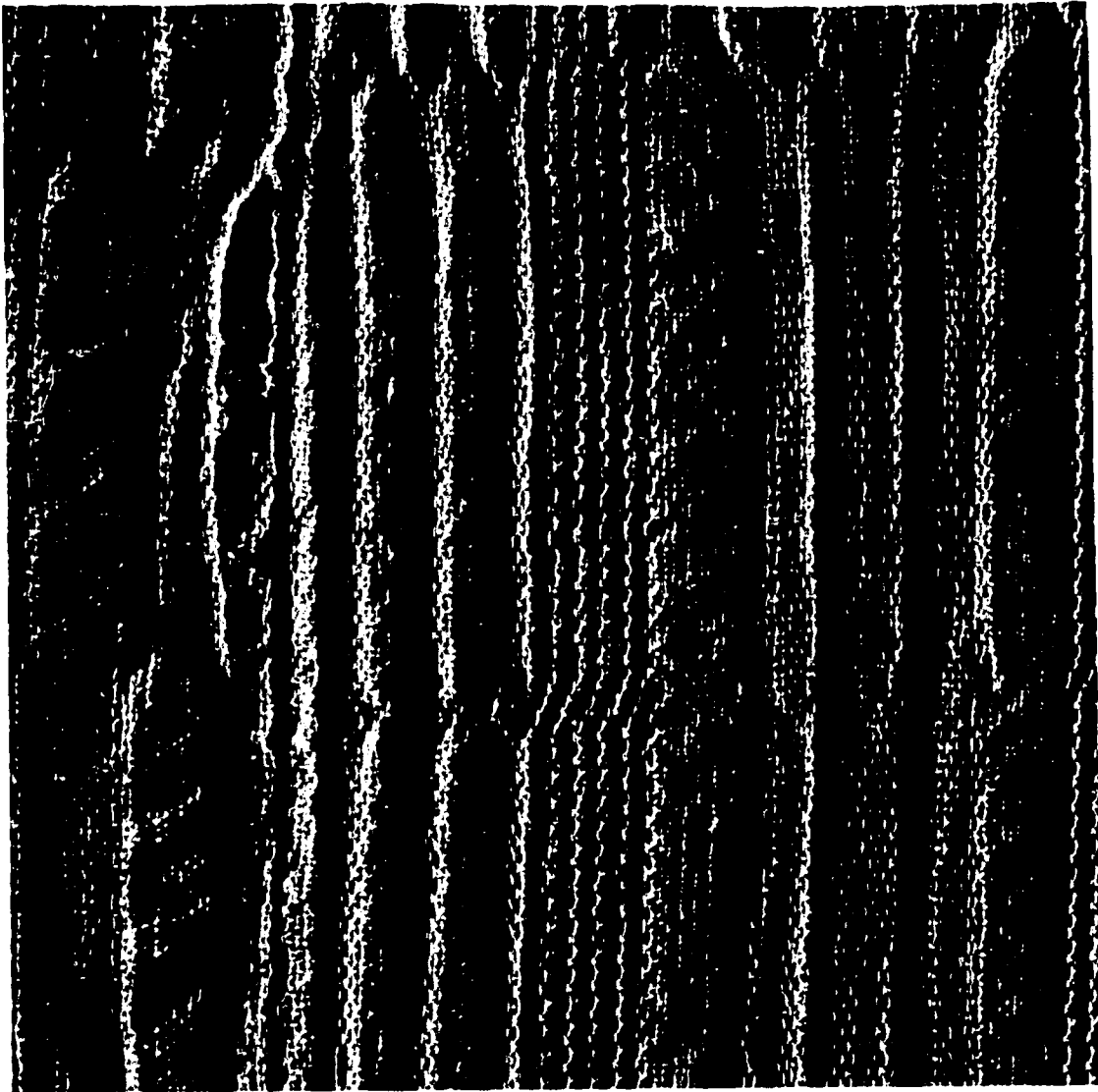


Figure 10

Cord Weave



possible to do, but it would have taken a great deal of time to produce a cord weave without errors on such a loom. The weave could be done more easily on a jack loom or counter-marche loom in which the harnesses could be operated independently. Extant records indicate that there were some "loom jacks" available in nineteenth century North Carolina (Reeves, 1854) so it is possible that some families owned jacks and could efficiently produce cord weave. Again, the frequency of extant pieces indicates they were considered special and saved.

Four twill weave blankets were included among the forty examination pieces, three were colored and one was plain white. One of the colored blankets was dyed a solid brown and the other two had stripes. These blankets are probably more representative of most of the bedcoverings which were woven in nineteenth century North Carolina central Piedmont homes than are the more frequently found fancy coverlets and counterpanes. An attempt was made to make even these utility bedcoverings interesting through the use of color (figure 11).

Two bedcoverings of plain weave were found. The first, a bed tick, was a plain white linen textile and had no embellishments of any kind. The second was a counterpane of a plain weave with a fine weft yarn and a heavier weft yarn used to introduce texture (figure 12). These

Figure 11

Twill Weave

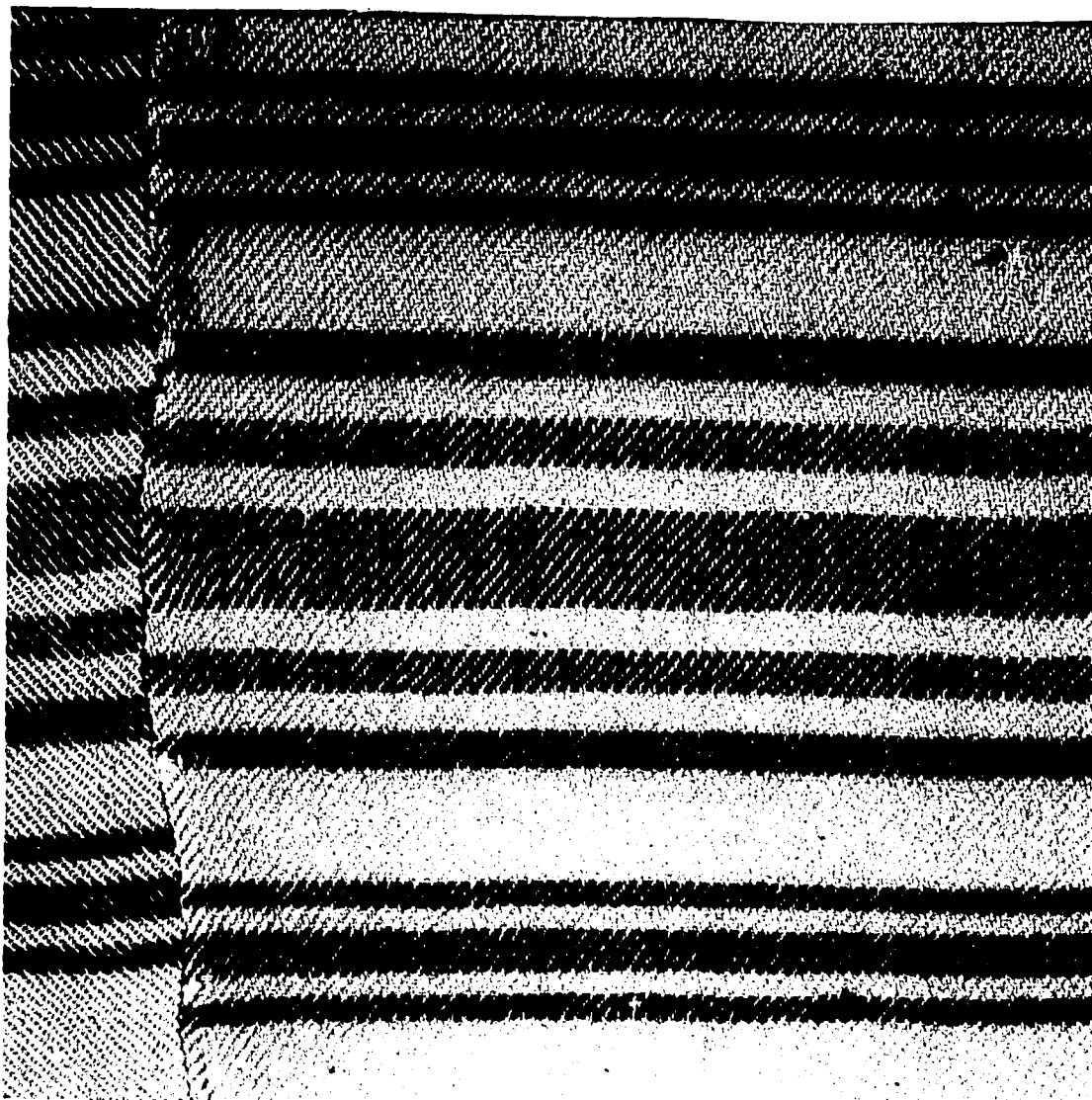
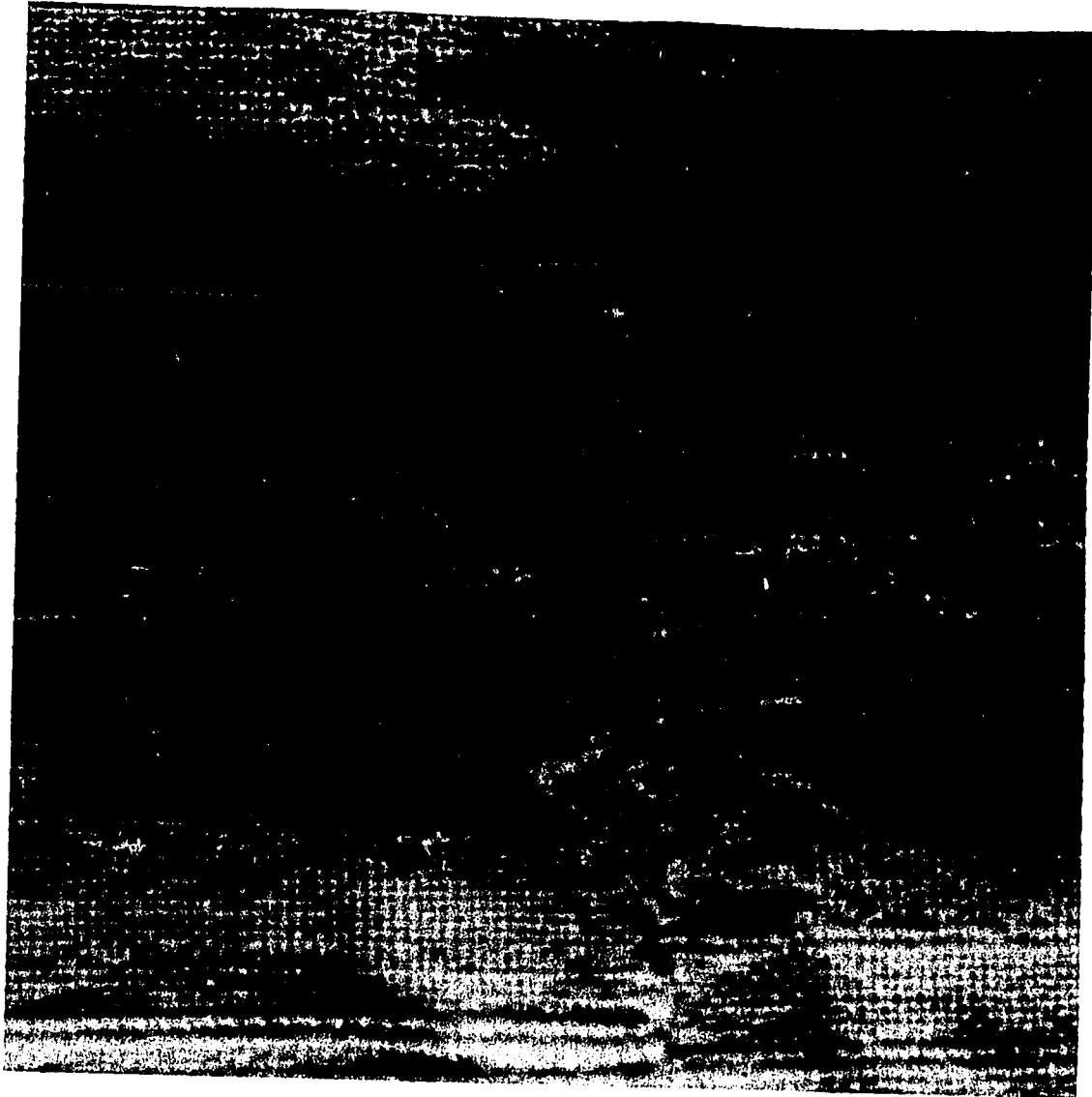


Figure 12

Tabby Weave



pieces are also probably more representative of what was actually produced for routine use.

Ply

All of the single ply yarns, regardless of the fiber, were spun with a Z-twist and those that were two-ply were Z-twist and plied with an S-twist. The yarns were spun by almost everyone in the family and, by having a consistent Z-twist, no one accidentally untwisted the yarns while plying.

Fiber

There was just one bedcovering made with linen. It was the bed tick and was 100 percent linen. All 39 of the other bedcoverings had white cotton warps. Interestingly, all the documented bedcoverings belonging to museums were listed as having linen warps but a physical analysis proved the warp to be cotton. The four twill weave blankets had wool wefts. The white counterpanes were 100 percent cotton and the overshot coverlets had a cotton tabby weft and wool pattern weft. Wool probably was used for the overshot pieces more for the way it dyed than for warmth, although warmth and beauty may have been equally important.

Sett

The sett refers to the number of ends of warp per inch of width. Both the lowest sett of 20 ends per inch and the

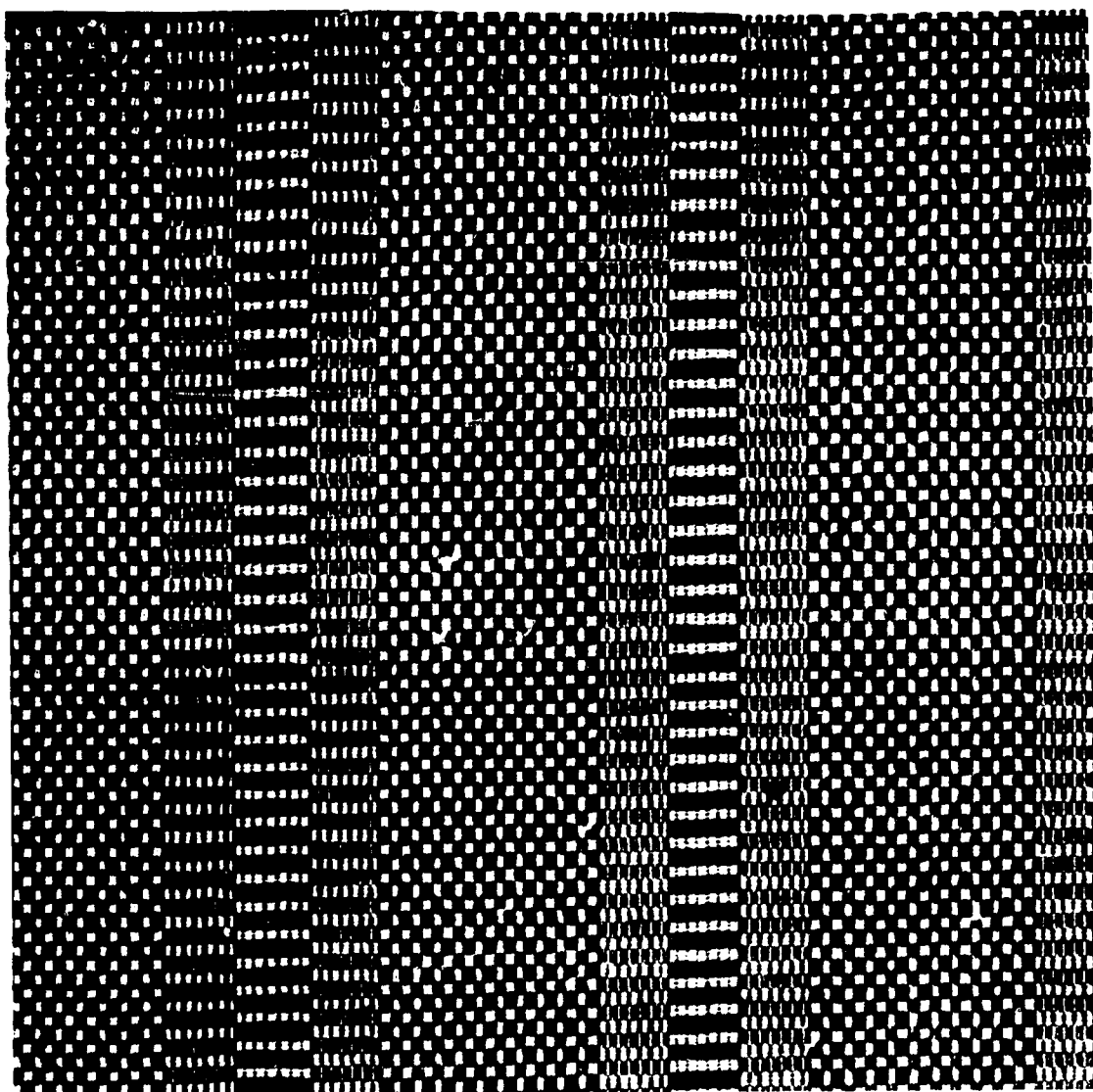
highest sett of 48 ends per inch was found in overshot coverlets. There were only seven bedcovers of cord weave. One had a sett of 38 ends per inch and the other six were grouped at between 44 and 46 ends per inch. These counts were from the finished textiles and, because the weave structure tended to collapse together after finishing, it was probably sett with fewer ends per inch. The one counterpane observation at a sett of 20 was the plain weave which was woven with somewhat heavier yarns than were the cord weave textiles.

The sett of the twill blankets varied from 36 ends per inch with two observations to 44 ends per inch with one observation. The fourth twill weave blanket observation was at 42 ends per inch. This sample is far too small to make any generalizations about sett for blankets.

The overshot sample was large enough to see some general tendencies. The sett varied from 20 ends per inch to 48 ends per inch but most of the observations were between 34 and 44 ends per inch. Two coverlets had 48 ends per inch and one of those was woven on opposites, a two block rather than the usual four block weave (figure 13). This coverlet may have been woven on a warp intended for another type of weave structure.

Sett is of particular significance because it indicated that, although it was technically possible to weave tabby blankets, cord weave, and overshot on the same warp

Figure 13

Two Block Overshot

threading, the loom was prepared for each type of weave. Threading or slewing the loom is a back-breaking, eye-straining process. The weaver could have avoided some of that arduous work by threading the loom with warps long enough for many different types of bedcoverings. The variation in sett between the different weave structures suggests that the weaver of nineteenth century North Carolina used the loom as a means of creative expression by planning and weaving each project separately. More observations of bedcoverings in all of the weave structures are needed to verify this possibility.

Width and Number of Loom Widths Used
in the Bedcoverings

Usually even the widest loom was not wide enough to make a bedcovering the full width of the bed so two or more loom widths were sewn together. Even when a loom was wide enough the weaver often elected to use two widths rather than one because less of the warp was wasted when a narrower cloth was woven. Usually 18 to 36 additional inches of warp yarns were needed to tie from the warp beam to the cloth beam and could not be woven. This additional warp is called loom waste. A narrower width might also have been chosen because of the weaver's reach. Thirty-six inches was a comfortable weaving width. See table 19 for the number of widths used and the width measurements.

Table 19

Number of Loom Widths and Measurement in Inches Found in
Extant Bedcoverings

Width	Two Loom Widths	Three Loom Widths
25"		1 Counterpane
26"		
27"		3 Counterpanes
28"		1 Counterpane 1 Coverlet
29"		2 Coverlets
30"	1 Coverlet	2 Counterpanes 1 Coverlet
31"	1 Coverlet	1 Counterpane 1 Coverlet
32"	2 Coverlets	
33"	1 Tabby Counterpane 1 Coverlet	
34"	3 Coverlets 1 Twill Blanket	
35"		
36"	10 Coverlets	
37"		
38"	1 Coverlet	

The observations concerning number of loom widths tends to confirm the speculation that weave structures were planned for specific projects. There was only one counterpane woven in two widths and it was the white tabby counterpane. The six cord weave counterpanes were woven in three widths. Nineteen overshoot coverlets were made with two widths and seven were made of three widths. The only whole twill blanket was made of two widths.

Length and Width

Five of the bedcoverings no longer were the original length and width because of alteration by their present owners or because extreme deterioration made it impossible to take accurate measurements. Table 20 shows the lengths and widths within 5" increments.

Twenty-four of the bedcoverings measured between eighty and ninety-five inches long by between sixty-five and seventy-five inches wide. Another nine had either a length or width that came within the most frequent lengths and widths. There was just one overshoot coverlet that was shorter and narrower than most bedcoverings and one that was both longer and wider than most.

Even though most of the bedcoverings tended to fall within certain measurements, there was much variation in lengths and widths. This may indicate that the beds were not standard in size and that perhaps there was more variation in length than in width and the "furnishings" were woven to

Table 20

The Length and Width and Frequencies of the Bedcoverings

Width									
Length	60"	2 2	65"	70"	75"	2 2	80"	85"	90"
75"	1-0	2 2				2 2			
80"	1-B	2 2		3-0 1-C	1-C	2 2			
85"	1-0	2 2	1-0 2-0	3-0 4-0	2-C 1-0	2 2	1-0 1-C		
90"		2 2	2-0	1-C	1-B	2 2		1-0	
95"	1-0	2 2	1-T	2-0		2 2			1-0
100"		2 2	1-C			2 2			1-C
105"		2 2				2 2			

O-Overshot, C-Cord weave, B-Blanket, T-Tabby Counterpane

fit them. Variation may also have resulted from a yarn surplus or shortage or the stamina or patience of the weaver.

Color

All of the counterpanes were white as was one blanket. There were nine coverlets with a white warp and tabby combined with a two color red and blue pattern weft. One blanket also had this combination of colors. Five of the overshot coverlets had a pattern weft of black and red and the usual white warp and tabby. There were three overshot coverlets of blue and white, thought to be the most common of the color combinations used. Another three overshot pieces had pattern wefts of red and green; three others had red and brown pattern wefts; and three additional bed-coverings used a combination of blue and lavender in the pattern weft. Lavender and black were used for the pattern weft of one overshot coverlet and purple and brown were used in another. The remaining colored pieces were are blankets. One was grey and white and one was a solid brown. There may have been even more colors used but because certain dyes may have caused the fibers to deteriorate, the textiles no longer exist. Some dyers were more skilled than others and could produce fast colors that were different from the more common ones.

Summary

An examination of forty extant bedcoverings of Alamance County, North Carolina, coupled with a review of primary historical records provide information important to material culture historians about the technology and materials available and the values and needs of weavers.

The bedcoverings of known origin were usually produced by women for the use of their families. Ten of the twelve bedcoverings with known weavers were made by women for their families. Two were made by a neighbor woman who produced textiles for others.

The fact that all the bedcoverings except one, the bed tick, were woven on a cotton warp indicates that similar artifacts in the collections of museums and individuals may also have cotton warps rather than linen as was previously believed. There are three possible explanations for these findings: (1) Cotton was more easily processed than was flax so was used more often. (2) Cotton had more flexibility and was more comfortable to use for bedcoverings than flax. (3) Bedcoverings with linen warps didn't survive to be studied because of characteristics peculiar to that fiber. These observations indicate that collections which are believed to be of linen and wool should be physically analyzed to be certain. It is possible that cotton may have been more a important fiber than was previously believed or the use of cotton for warps was common to the cotton growing south.

The observations indicated that separate threadings and setts were planned for each project rather than planned for a variety of end use products. The desire to be creative appeared to outweigh measures of efficiency. The overshoot coverlets were usually woven in two pieces and with 34 to 40 ends per inch. The cord weave counterpanes of an equivalent overall width were made of three widths and had a sett of 38 to 46. The blankets were of a twill weave and could not have been produced on the overshoot or cord weave threadings.

Most of the bedcoverings were grouped within a twenty inch length measurement and a ten inch width measurement. This indicated that perhaps beds lacked standardization.

The most frequent colors found in the overshoot bedcoverings were combinations of red, white, and blue. This was probably because the red and blue dyes were more color fast rather than a sign of patriotism. The white was in the cotton warp and tabby and the colors were found in the wool pattern weft. The second most frequent combination of colors was red, black, and white. Black was also colorfast and obtained fairly easily. Combinations of blue and white, red and green, red and brown, and blue and lavender were found equally as often. The 100 percent cotton bedcoverings were white. Cotton doesn't dye with natural dyes very easily so was probably left white for this reason.

The investigation about bed clothing indicated that the bed certainly was a most important object in the house. The

weaver carefully planned for each type of bed covering and dyed the necessary yarns, sett the ends per inch for each weave structure, planned for the number of widths needed, and probably wove to fit the bed. Bed coverings were probably an outlet for the weavers' creativity and provided items of beauty to decorate their homes.

Data From the Physical Analysis of the Bedcoverings

Table 21

Tabby Weave

Object Number	Length	# of Panels	Panel Width	Sett (epi)	Warp Fiber	Weft Tabby	Fiber Pattern
1	---	---	---	24	Linen	Linen	---
2	97"	2	33"	38	Cotton	Cotton	---

Table 22

Twill Weave

Object Number	Length	# of Panels	Panel Width	Sett (epi)	Warp Fiber	Weft Tabby	Fiber Pattern
3	73"	1	66"	44	Wool		Wool
4	74"	---	31"	36	Cotton		Wool
5	72"	2	43"	35	Cotton		Wool
6	82"	2	64"	42	Cotton		Wool

Table 23

<u>Cord Weave</u>							
Object Number	Length	# of Panels	Panel Width	Sett (epi)	Warp Fiber	Weft Tabby	Fiber Pattern
7	106"	3	28"	44	Cotton		Cotton
8	88"	3	25"	46	Cotton		Cotton
9	90"	3	26"	44	Cotton		Cotton
10	89"	3	27"	45	Cotton		Cotton
11	89"	3	27"	46	Cotton		Cotton
12	85"	3	29"	46	Cotton		Cotton
13	103"	3	30"	20	Cotton		Cotton
14	82"	3	31"	43	Cotton		Cotton

Table 24

<u>Honeycomb</u>							
Object Number	Length	# of Panels	Panel Width	Sett (epi)	Warp Fiber	Weft Tabby	Fiber Pattern
15	105"	3	29"	44	Cotton		Cotton

Table 25

<u>Ms and Os</u>							
Object Number	Length	# of Panels	Panel Width	Sett (epi)	Warp Fiber	Weft Tabby	Fiber Pattern
16	84"	3	26"	48	Cotton	Cotton	Cotton

Table 26

<u>Overshot</u>							
Object Number	Length	# of Panels	Panel Width	Sett (epi)	Warp Fiber	Weft Tabby	Fiber Pattern
17	94"	2	33"	38	Cotton	Cotton	Wool
18	99"	2	31"	20	Cotton	Cotton	Wool
19	88"	2	33"	38	Cotton	Cotton	Wool
20	90"	2	35"	44	Cotton	Cotton	Wool
21	94"	2	36"	35	Cotton	Cotton	Wool
22	81"	2	37"	39	Cotton	Cotton	Wool
23	82"	2	38"	30	Cotton	Cotton	Wool
24	89"	2	32"	36	Cotton	Cotton	Wool
25	78"	2	31"	24	Cotton	Cotton	Wool
26	81"	2	34"	49	Cotton	Cotton	Wool
27	88"	2	36"	38	Cotton	Cotton	Wool
28	95"	2	36"	33	Cotton	Cotton	Wool
29	96"	2	36"	36	Cotton	Cotton	Wool
30	91"	2	36"	34	Cotton	Cotton	Wool
31	94"	2	36"	29	Cotton	Cotton	Wool
32	93"	2	35"	28	Cotton	Cotton	Wool
33	86"	2	36"	38	Cotton	Cotton	Wool
34	85"	2	36"	40	Cotton	Cotton	Wool
35	92"	2	33"	40	Cotton	Cotton	Wool
36	98"	2	37"	34	Cotton	Cotton	Wool
37	94"	3	29"	43	Cotton	Cotton	Wool

Overshot (Continued)

Object Number	Length	# of Panels	Panel Width	Sett (epi)	Warp Fiber	Weft Tabby	Fiber Pattern
<hr/>							
38	99"	3	25"	44	Cotton	Cotton	Wool
39	93"	3	25"	42	Cotton	Cotton	Wool
40	87"	3	29"	48	Cotton	Cotton	Wool
41	86"	3	28"	44	Cotton	Cotton	Wool
42	99"	3	31"	42	Cotton	Cotton	Wool
43	101"	3	31"	40	Cotton	Cotton	Wool
44	91"	3	29"	34	Cotton	Cotton	Wool
45	---	---	---	42	Cotton	Cotton	Wool
