



All hands are enjoined to spin : textile production in seventeenth-century Massachusetts.

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ALL HANDS ARE ENJOINED TO SPIN: TEXTILE PRODUCTION IN
SEVENTEENTH-CENTURY MASSACHUSETTS

A Dissertation Presented

by

SUSAN M. OUELLETTE

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial
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History

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ABSTRACT

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SEVENTEENTH-CENTURY MASSACHUSETTS

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For the last three decades, social historians who studied early America expanded older interpretations of colonial economy and society to include family, social position and gender as legitimate topical themes. During that same period, economic scholars have used social historians' community and household studies to explore rural self-sufficiency, the development of commercial agriculture and the Atlantic sea trade. Despite the recent use of family household economies to explore and explain colonial economy and society, most have entirely neglected one of the most fundamental early American industries: domestic textile production.

Colonial historians have previously used information about wool, flax and hemp in broadbased arguments about the productive side of the colonial economy, yet few have considered textile production a significant colonial economic activity. As a result, textile-producing

networks, construed as either economic or social phenomenon, have largely gone unnoticed.

This study draws evidence from a broad array of sources including the probate inventories of Essex and Suffolk County, Massachusetts, extant account books, trial transcripts, court records and material culture. Combined with a working knowledge of cloth-making, those records reveal that domestic textile production was a major form of social organization, especially in early Massachusetts. Textile-producing networks clearly served to draw households, neighborhoods and regions together in particular ways. From the processing of fibers to the finishing of cloth, intense cooperation and an extensive system of corporate labor were key elements of textile production. Simply put, no one gender or age group was responsible, rather a confluence of female and male as well as young and old laborers was necessary to the success of the industry.

Ultimately, because cloth was so important to the daily lives of colonists, their labors made an important contribution to the available domestic supply and to the success of their colony. At the same time, the system of cooperative networks necessary to the industry profoundly influenced the development of both the society and economy of early Massachusetts Bay.

TABLE OF CONTENTS

	Page
ABSTRACT.....	iv
LIST OF TABLES.....	vii
Chapter	
INTRODUCTION.....	1
PART ONE: PRODUCTION	
I. SHEEP PROPAGATION.....	19
II. IMPORTED COTTON AND FLAX AGRICULTURE.....	62
PART TWO: RELATIONS OF PRODUCTION	
III. SKILL DISTRIBUTION AND TRANSMISSION.....	102
IV. THE ORGANIZATION OF PRODUCTION.....	134
CONCLUSION.....	169
BIBLIOGRAPHY.....	171

LIST OF TABLES

1. Frequency of Probate Records Reporting Sheep.....	25
2. Frequency of Sheep in Boston Probates.....	26
3. Wealth Distribution of Probates Reporting Sheep in the Period 1630-90.....	42
4. Average Flock Size Related to Probate Value.....	44
5. Frequency of Wool Fibers in Probate Inventories....	45
6. Frequency of Wool Yarn Stock Found in Probate Inventories by Probate Value, 1630-90.....	55
7. Volume of Wool Yarn Reported in Probate Inventories, 1630-1690.....	55
8. Frequencies of Inventories Reporting New Wool Cloth, 1630-1690.....	60
9. Frequency of Probates Reporting Cotton Fiber.....	73
10. Frequency of Probate Inventories Reporting Flax....	75
11. Average Volume of Flax Fiber Reported in Pounds....	76
12. Average Frequency of Linen Yarn.....	77
13. Average Volume of Linen Yarn Reported in Pounds....	78
14. Average Frequency of Linen Cloth.....	79
15. Average Volume of Linen Reported in Yards.....	80
16. Frequency of Men Reporting Their Occupations as Weavers.....	119
17. Probate Value of Weavers, 1635-1690.....	121
18. Breakdown of Ipswich Household Obligations for Spun Yarn, December 1656.....	142
19. Frequency of Probates Reporting Looms.....	145
20. Frequency of Probates Reporting Spinning Wheels... 148	
21. Provenience of Spinning Wheels in Probates by Wealth.....	149

INTRODUCTION

Conventional wisdom regarding the settlement and economic growth of seventeenth-century New England describes a colony perennially dependent on external sources of manufactured goods. Initially, the first waves of colonists were the primary sources of provisions, manufactured goods, cash and credit. When the regular arrival of newcomers waned, out of necessity, the colony shifted its dependence to a sea-based merchant fleet. These sea traders created networks along which manufactured goods and marketable surplus circulated. In this model, New England's colonies would have floundered and died without those merchants. Despite ample regular food supplies provided by the agricultural sector to the colony, New England continued to require vast exports of manufactured goods from England to fulfill its needs. As one historian observed,

[In the beginning,] as long as hundreds of emigrant families disembarked at New England ports each year, the region's economic survival seemed assured. The newcomers' stores...added wealth to a colonial economy that could not depend on the lucrative staple crops that supported [other] British settlements.... Once emigration ceased...the precariousness of such economic arrangements was fully revealed and New England suffered its first economic depression.¹

1. Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 131.

According to this logic, the end of the Great Migration period in 1642 brought the first phase of successful settlement to a close. At the same time, colonial officials realized that New England would have to develop a sustainable economy on its own or it would not survive.

Hampered by the absence of exportable staples, New England's leaders struggled to find a way to balance the demand for manufactured goods against the absence of spendable wealth. At first, colonial governments attempted to foster home-based manufactures by establishing production bounties, trade monopolies and other forms of encouragement. These efforts met with only "mixed success."² Finally, it was the sea-based merchants who forged the important links between West Indian sugar plantations, New England surplus and English credit.

Throughout the colonial period the merchants - those who dealt for personal profit in the wholesale import, export, and distribution of goods - were the dynamic economic force in the northern colonies.... [O]verseas trade alone could furnish the settlers with the materials needed for maintaining reasonably comfortable lives....(my emphasis) [Since] the natural goods of New England largely

2. Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 132.

duplicated the produce of England, exchanges were to be made in places outside of England and profits to be translated into credits in England.³

Thus, elite merchants led the way to the success of the New England colonies where all else failed. With a lucrative trade network in place, New England colonists concentrated on farming and livestock raising which provided modest, but tangible, gains.

Certainly, the achievement of those bold merchant mariners can hardly be denied. Yet, New England's economic success can not be fully explained by this model. Ironware and textiles were among the most sought after manufactured products in the colony and colonists knew this to be true before they emigrated. In the first years of the "Great Migration" period colonists and English investors joined together to develop New England industry for profits, to be sure, but also to meet those vital needs. Early attempts at developing iron production mainly failed in the 17th century, but not because the established ironworks failed to produce ironware. Rather, active production of tons of raw iron pigs and the manufacture of ironware products in places like Hammersmith and Braintree, Massachusetts, failed to yield cash profits to investors. One problem was the type of ore available to New Englanders in the period. Bog ore needed to be mined in great quantities to produce small

3. Bernard Bailyn, The New England Merchants in the Seventeenth Century, (New York: Harper and Row, 1964), pp. vii, 75.

amounts of raw iron. The second and even more serious problem was a scarcity of revenues that could be transferred to England. The local market could support iron production only when producers accepted payment in kind. Much to the chagrin of the investors, the grain, livestock and food supplies offered in payment did not translate into currency as easily as tobacco did in the South. Lack of cash flow combined with poor management ultimately forced most of the iron manufactories into bankruptcy. The infant economy of New England could not sustain an industry that demanded a heavy outlay in equipment, land and skilled labor while investors were not willing to wait for their profits.⁴ The production of textiles, however, differed markedly from the production of pig iron or finished iron ware.

Many of the "Great Migration" immigrants came from textile-producing regions and brought with them their skills and the tools of their trade. As opposed to the small contingent of forced Scottish labor manufacturing iron, textile producers represented a significant portion of every town's population. Moreover, textile fibers could be produced nearly anywhere the colonists went, not just near certain areas like iron bogs. With skills, tools and land available for fiber production, the

4. For a brief discussion of the iron manufacturing of New England, see Bernard Bailyn, The New England Merchants in the Seventeenth Century, (New York: Harper and Row, 1964), pp. 62-71.

creation of textiles did not call for large outlays of cash or complex systems of distribution. Moreover, there was a tradition of cottage-produced "rough" textiles among English people that certainly argues against their supposed abandonment of cloth-making in New England.⁵ In 17th-century England, housewives regularly circumvented middlemen and merchants by producing much of their household's needs, saving money and sometimes even making extra for the family budget. As one contemporary agricultural tract observed:

Undoubtedly a woman cannot get her livinge
honestly with spinning on the dystaffe,
but it stoppeth a gap and must needs be
had.⁶

Why not in New England? For the same reasons, colonial housewives could take up their distaffs and wheels to provide much needed rough cloth. However, American historians regularly cite "evidence" arguing against such a notion:

There were...serious problems with the supply of materials to turn into fabric. Although thousands of sheep were imported into New England they were slow to thrive..., the docile sheep were no match for predators-particularly wolves.... Few families bothered with sheep rearing. [Despite official pressure to produce hemp and flax, they] never became mainstays of

5. The tradition of English domestic cloth-making was described in Alice Clark, Working Life of Women in the Seventeenth Century, (London: George Routledge and Sons, 1919).

6. Sir Anthony Fitzherbert, Boke of Husbandrye, 1555, reprinted in Alice Clark, Working Life of Women in the Seventeenth Century, (London: George Routledge and Sons, 1919), pg. 48.

textile production either. Efforts to import West Indian cotton likewise amounted to little.⁷

According to this logic, rather than establish a domestic textile industry, frugal colonists continued to import cloth or turned to conservative measures like "careful mending and passing down of clothing from one generation to the next."⁸ Most of all, the endemic shortage of labor absorbed any would-be textile producers into the more necessary activities of colony-building. The reality for New Englanders was that cattle, fodder and corn were simply better economic investments than flax, hemp or sheep. Exports, after all, were the stuff economic security and market economies were based upon.

Indeed, the depression of the 1640s propelled New England merchants on to the sea and ultimately facilitated their sea-based entrepreneurial success. Moreover, salted beef and fish, oak barrel staves and other New England products provided the foundation for an exchange of West Indian produce as well as English manufactured goods. To imagine, however, that New England's economic growth rested solely on these products neglects the importance of the growing internal economy of the colony.

7. Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 135-6.

8. Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 137.

Likewise, such a conclusion ignores a large body of evidence pointing to a major domestic textile industry. Probate inventories of the period contain multiple references to "coarse," "rough" or simply "cheap" fabric and clothing in quantities that indicate a substantial volume of textiles flowed from the wheels and looms of colonial households.

It is quite true that the making of cloth was a labor-intensive process. A considerable volume of production, a particular distribution of labor activities and varying degrees of skill were needed to transform raw fibers into serviceable cloth. However, this does not necessarily lead to the conclusion that all textiles were imported. Rather, the frugal nature of colonial households made the production of simple "coarse" cloth inevitable, especially if the conditions allowed for its production. One contemporary observer remarked in 1643:

In prospering hemp and flax so well it is frequently sown, spun, and woven into linnen cloth; and so, with cotton wooll ...and our linen yarn we can make dimities and fustians for our summer clothing; and... we hope to have woolen cloth [as well]...⁹

As noted above, the typical colonial wardrobe required several different qualities and types of fabric:

9. "New England's First Fruits," published in London, 1643, but written in Boston, reproduced in William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893), pg 6.

linen, cotton and woolens of varying weights and weaves.¹⁰ Thus, Bailyn's observation that the "success of the textile industry" could only be "ultimately" measured by the volume of woolens produced is flawed. His assertion that "cotton and linen fabrics would not suffice [as clothing] for settlers during chilly autumns and long, bitter winters" demonstrates a limited understanding of the importance of all types of fabrics to everyday life.¹¹ Certainly clothing was important. Consider Robert Wilkes' probate inventory presented to the Salem court in 1677 by his neighbors, John Hill and William Woodbery. Included in the inventory is the list of Wilkes' clothing which illustrates a representative adult male wardrobe of an average householder. A heavy wool cloak, twill coat, waistcoat and trousers probably represented his best clothing. A "jacket and breeches...stokins and shues...[and several changes of] wearing linging" was his every day clothing. None of the descriptions of Wilkes clothing indicate that it was imported cloth. In fact, the absence of descriptive labels such as "Holland," "Irish" or "Pennistone" could connote a homespun origin. Wilkes' wardrobe consisted of

10. At this time cotton was used with linen to make blended fabrics. It was very rare to have all cotton fabrics.

11. Bernard Bailyn, The New England Merchants in the Seventeenth Century, (New York: Harper and Row, 1964), p. 73.

linen, cotton/linen and wool fabrics of different weights.¹²

The average woman's wardrobe was, to some extent, more varied than a man's. Phebe Eaton, a widow who lived in Haverhill, owned "a penniston petticoat, cotton petticoat, carsee (kersey) petticoat, two wascuts (waistcoats), cloth hood, small linging, a blacke cap and neck cloth, two hatts, a stuffe gound, a paire shooes and stokins."¹³ Again, as in Wilkes' clothing, most of the pieces were probably fashioned from domestically produced cloth. Her best petticoat, made of English penniston wool was most certainly imported, while her kersey and linen things were everyday wear and probably "domestic" judging from their valuation. Thus, Phebe Eaton's wardrobe again demonstrates the variety of fabrics and fibers of a typical wardrobe while it contained only one piece of clothing clearly identified and valued as imported.

By modern standards both Wilkes' and Eaton's probate inventories recount a sparse collection of clothing. However, hours of work were represented in those few garments: twenty or more yards of cloth woven for each full suit of clothing and literally miles of yarn spun in order to produce them.¹⁴ Purchasing locally manufactured

12. Inventory of Robert Wilkes of Salem, The Probate Records of Essex County: 1675-1681, (Salem: The Essex Institute, 1917), (hereinafter ECPR), Vol III, pg. 179-180.

13 Inventory of Phebe Eaton of Haverhill, ECPR, Vol II, pg. 342-343.

14. I am assuming a fabric width of 18-22" here.

cloth or utilizing household labor to produce cloth considerably reduced the necessity of substantial outlays of scarce cash or extensions of precious English credit for clothing. Moreover, locally produced cloth meant that individuals could barter among neighbors with produce or exchange labor to get the cloth they needed and avoid merchants altogether.

The need for good clothing was ever present. Although, as already observed, many probate records of the period list items of clothing passed down to family members like heirlooms, clothing still eventually wore out beyond mending and, as every housewife probably knew to her dismay, new stockings were constantly needed. In the case of growing children, the problem of keeping them dressed was even more critical.

Beyond basic clothing needs there were still other equally important requirements for cloth as well. Linen sheets, pillow covers, bed ticking for mattress covers, woolen blankets, and wool coverlets were necessary appurtenances for colonial bed furnishings in a time of no central heating, insulation and glazed window openings. In the kitchen, daily activities called for table linens, towels, grain sacks, flour sacks, cheese cloths, pudding wraps and other fabrics uses long forgotten. For households with infants, diaper cloths and childbirth linens could be found. Other items listed in many probates included lap robes and saddle blankets. As

a substantial portion of probate inventories in Essex and Suffolk Counties, Massachusetts, reveal, cloth was an essential part of everyday life and a lack of it would have had far more profound consequences than simply a dearth of warm clothing. A rough estimate using fifty probate records between 1655 and 1675 for Essex and Suffolk Counties with itemized clothing and fabric goods' descriptions underscores that necessity.

On average, each household contained housekeeping items that averaged out to about sixty-five yards of linen or linen/cotton fabric. Additional yardage devoted to clothing indicates that thirty to forty yards of wool, linen and linen/cotton fabric was needed to clothe each adult member of the household. Thus a rough approximation of the average fabric needs of each adult was around fifty yards of fabric. With an estimated population of 33,000 in 1665, this would mean that New Englanders required, on average, about 1.6 million yards of cloth.¹⁵

Given the ordinary or "coarse" quality of most textile needs, it seems ludicrous that the colony's cash-poor economy could afford or would even attempt to import

15. The sample data was drawn from the probate records between 1655-75 of Suffolk and Essex Counties. The "randomness" of the sample was defined by the fancy of the probate recorders who did not consistently itemize clothing and household goods. ECPR, Vol. I & II; Suffolk County Probate Records, (hereinafter SCPR) Vol. I & II. The population figure for New England was taken from John J. McCusker and Russell R. Menard, The Economy of British America, 1607-1789, (Chapel Hill: University of North Carolina Press, 1991), page 103.

such simple, but voluminous needs. This is not to say that imported cloth did not circulate in the colonial economy. As we have seen in the case of Phebe Eaton, these can be found with some regularity in the records as well, certainly in the probates of men such as Henry Shrimpton, a wealthy Boston merchant. Yet, the persistence of a domestic textile industry was clearly evident and had surprising economic ramifications. In the probate sample described above, at least half of the fabrics, especially among the poorer folk were "coarse." Even a conservative estimate indicates that New Englanders potentially produced over 800,000 yards of fabrics or, in probate values, about 40,000L worth. It would seem that although most historians have overlooked it, New England possessed the means to produce vast quantities of "rough" textiles: sheep, water, flax, tools and most important, female skills and labor.

Despite the depredations of wolves on the livestock of New England, the numbers of sheep grew steadily throughout the period studied. Evidence gleaned from probate records, town selectmen meetings and the records of the Massachusetts General Court as well as the private and published writings of individuals bear this out. Very early in the life of the colony, wool was available for the manufacture of woolen cloth, if only on a small scale at first. After all, if "the few families who bothered with sheep...[produced enough wool] to support the

domestic production of homespun," what else would the average household desire?¹⁶

Equally available, perhaps even more so at first, was flax and hemp for the manufacture of linens. Flax seed was easily transported, far more so than livestock, and grew well. New England's soils, though not as fertile as colonists hoped, produced flax readily and continually throughout the period studied. Likewise, the "plentiful growth of wild hemp" in the colony was there for the colonists' gathering. Combined with a considerable supply of English and Spanish cotton purchased in the West Indies by local merchants, a whole range of cloth was possible: pure linen, pure cotton, dimities, diaper, fustians and other combinations of linen and cotton needful in the average English household.

Textile tools and skills came along in the holds of the ships that brought the colonists. In at least one instance, an entire town from the cloth-producing region of Yorkshire transplanted at least a portion of its inhabitants to a new town in Rowley, Essex County. They did not come to change their lifestyle, they intended to perpetuate it. The first to do so in New England, Rowley men built a fulling mill to process their "rough" cloth even as they built gristmills and sawmills to service the

16. Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 135.

town's needs.¹⁷ Rowley women most certainly set about providing and processing the raw materials for their husbands' craft.

Here again, conventional wisdom has obscured rather than revealed. Much has been written about the labor "shortage" in early New England. According to this logic, the ideal labor pool, young able-bodied men, emigrated to the Chesapeake. This deprived New England of a much needed source of economic growth potential. However, this notion disregards New England's intensive use of the labor of women, a labor pool of great abundance and potential in relatively stable agricultural communities. Moreover, the presence of women in a sex-balanced and healthy environment made the volume of children greater than anywhere in British North America. Thus the labor "shortage" of New England is an illusory one when discussing the development of domestic industries, especially textile production. In ignoring the use of women as producers, historians have truncated half of the the "labor force" of New England.

Indeed, most of the processes leading up to the actual weaving of cloth could be broken down into simple tasks, easily interrupted and ideal for women whose lives revolved around the demands of childcare and farm work.

17. Samuel Maverick, A Briefe Description of New England and the Townes Therein Together With the Present Government, 1660, reprinted through the Massachusetts Historical Society, (Boston: David Clapp & Son, 1885).

Rather than "an occasional occupation of...farmers and petty artisans who bought almost all their textiles from...importers or from middlemen," textile production occurred around and between the seasonal labors of New England colonists, especially women.¹⁸ Yet, textile production was not solely the activity of women. As we shall see, the making of cloth was a shared venture between men and women. Although women may have dominated, both men and women shared different responsibilities at each stage of production. Indeed, the making of textiles wove the sexes together in their labors as surely as the weaver combined the warp and weft threads of his fabric. As skills and tools passed from one generation to the next, the connections spread across time as well as space. Moreover, one household could not produce independently of another, causing the threads of production to weave neighborhoods, communities and, ultimately, the colony into elaborate patterns of reciprocity and inter-dependence. Such production may only occasionally have become a part of any publicly recorded transaction, but as part of the landscape of barter and exchange, "rough" textiles became one area of

18. In his argument, Bailyn is suggesting that cloth production persisted in the colony, but only on the fringes and in very minute quantities. In his opinion, the merchants and their extensive trade networks made it possible for colonists to forgo the difficult work and to continue to have the "superior" textiles produced in New England. Bernard Bailyn, The New England Merchants in the Seventeenth Century, (New York: Harper and Row, 1964), 74.

production that enabled colonists to move closer to their ideals of competence and self-reliance. Thus, in order to really understand the early social and economic history of Massachusetts, historians must not only reinstate women as actors in the historical landscape, but must also comprehend how pre-industrial men and women cooperated in their endeavors.

This study re-examines traditional sources such as probate inventories, wills, account books and diaries searching for evidence of textile manufacture in early Massachusetts. Close reading of probate inventories from Essex and Suffolk Counties, Massachusetts, in the years 1630-1690 reveal the availability and production of textiles among the households recorded and even suggest how the process of production was organized among those households. Wills, account books and diaries, although concentrated on the male activities of their authors, disclose other minutiae that clearly link women to much of the labor required to manufacture textiles. Town selectmen records and other town records provide important insights in the management of community resources, especially those pertaining to textile manufacture. Agricultural tracts and other related works provide even more clues to those processes. Taken together, the recorded glimpses of textile production in the Essex and Suffolk County communities of Massachusetts Bay offer an opportunity to explore a submerged economy

that most certainly helped to shape the larger commercial structures of early New England even as it supported the daily needs of individual households.

PART ONE: PRODUCTION

"For cloth here is and would be materials enough to make it"

- Captain Edward Johnson, 1642¹

1. Captain Edward Johnson, Wonder-working Providence of Sions Savior in New England, London, 1654; pg 174, reproduced in Library of American Civilizations, microfiche # LAC15925

CHAPTER I

SHEEP PROPAGATION

"The Lord has been pleased to increase sheep extraordinarily of late"

- Captain Edward Johnson, 1642²

In his New World narrative, Wonder-Working Providence of Sion's Savior in New England, Captain Edward Johnson described the material wealth accumulated by his fellow colonists between the years 1628 and 1651. Among those he considered to be the greatest was the phenomenal growth of Massachusetts' livestock herds. Johnson's interest is not surprising. In the simple economy of early New England, domestic animals were an essential ingredient which, when combined with land, became a primary source of colonial wealth and prosperity. Moreover, an abundance of domestic animals in New England guaranteed the future of the Massachusetts Bay Colony.

In Johnson's estimation, the population growth of Bay Colony livestock was nothing less than miraculous:

There are supposed to be in Massachusetts [Bay] government at this day [1651], ...about fifteen thousand acres in tillage, ... cattell about twelve thousand neate, and about three thousand sheepe.³

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2. Captain Edward Johnson, Wonder-working Providence of Sions Savior in New England, London, 1654; pg 174, reproduced in Library of American Civilizations, microfiche # LAC15925
 3. Captain Edward Johnson, Wonder-working Providence of Sions Savior in New England, London, 1654, pg 175; reproduced in Library of American Civilizations, microfiche # LAC15925.

The expanding tallies of Massachusetts' domestic animals fired Johnson's imagination and he was especially jubilant over the sheep flock for although "cattell" provided food and leather products, sheep's wool provided much-needed warm clothing and bedding. Describing the prolific growth of sheep in the colony as "extraordinary" proof of divine approval, Johnson pointed out that New Englanders' access to woolen cloth "hath not been cut short" and uncertain supplies from England were about to become a specter of the past.

For an infant economy struggling to cope with debt and the vagaries of sea-based supply lines, this was welcome news. Johnson's 1651 estimate forecast a ready supply of over six tons of raw wool for that year with a potential doubling of each year's harvest thereafter.⁴ Reserves of such magnitude permitted more than an adequate basis for domestic textile manufacture of considerable scope.⁵ Sheep and wool were important to the

4. The average ewe produced at least one lamb each season and lived to approximately ten years. Since many ewes produced twins, a reasonable estimate of lifetime production is fifteen lambs in ten years. This means that each flock had the potential to more than double in size each lambing season. Even a more conservative estimate of one lamb per birth means that the flock can still come close to doubling its size in one season.

5. Modern wool breeds produce ten to twelve pounds of fleece a year, but according to an 18th century farm manual, the average yield among most English longwool breeds in 1780s was about four pounds. This was before bringing in the Spanish merino which considerably increased wool yields in the early 19th century. I have settled on an estimate of four pounds yielded per year owing to the feed quality differences between England and New England in this period.

colony and the proof was their relative value to the rest of the economy.

Johnson's enumeration of 1651 reveals that at least fifteen percent of all domestic animals in the colony were sheep. In certain areas, such as Charlestown or Ipswich, the percentage was much higher with equal numbers of sheep and cattle grazing the town commons.⁶ Although not all families in New England owned sheep, all of them owned at least some wool clothing, if not raw wool, for their own use. For many households, cloth, cloth furnishings and clothing accounted for a substantial proportion of the household's wealth, as many 17th-century probates reveal. Thus, the collective assets of the colony were influenced directly by domestic manufacture of woolens and, while divine providence may have helped to increase the colony's flock, economic exigencies influenced colonial investment choices.

Even as Edward Johnson celebrated the size of New England's aggregate sheep flock, Massachusetts Bay representatives underscored official interest in sheep. Urging that they be brought from England, a 1645 order read:

6. The town of Charlestown collectively owned 400 head of "great cattell" as well as "near about 400 sheape." Captain Edward Johnson, Wonder-working Providence of Sions Savior in New England, London, 1654, pp. 41, 175.

...all ye towns in general and every one in particular within the jurisdiction, seriously to weigh the premises and accordingly that you will carefully endeavor the preservation and increase of such sheep as ye already have, as also to procure more...those such as have an opportunity to write to their friends in England...[and] advise them to bring as many sheep as conveniently they can...⁷

In this proclamation, the General Court acknowledged the damage done in England and in Europe by protracted wars that laid waste to European flocks and made cloth expensive as well as difficult to obtain. Furthermore, although supply ships made regular visits to Massachusetts Bay, an adequate supply continued to be unpredictable. In the court's opinion, the absolute necessity for warm clothing in the cold and wet climate of New England made a home-based wool industry a necessity.

Restrictive decrees as well as official encouragement characterized the Court's legislative activities. At a session held on the 22nd of August, 1654, the court set limits on slaughtering and ordered a moratorium on the export sale of breeding animals.

7. Order of Massachusetts Bay General Court, May 14, 1645, reproduced in William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893), pg 6.

No ramme or wether under two years can be butchered except by their owners until they reach two years...No person or persons shall transport any ewe or ewe lamb upon the forfeiture of five pounds each.⁸

By regulating the slaughter of rams and wethers under two years, the Court was ensuring two year's wool clip before the animal was consumed.⁹ Preserving rams past their first year also guaranteed at least one useful breeding season for that animal as well. Constraints placed upon the sale of the breeding ewes protected the fertility of the flock and prevented flock owners from succumbing to the high premiums paid for sheep in adjacent New England colonies as well as the mid-Atlantic region.¹⁰ More to the point, such legislation prevented outsiders from siphoning off Massachusetts Bay's potential animal and wool production.

8. Order of Massachusetts Bay General Court, August 22, 1654, Nathaniel Shurtleff, ed., Records of the Governor and Company of the Massachusetts Bay in New England, (Boston: M. White, 1853-4), Volume IV.

9. A wether is a castrated ram. There are several reasons why rams were castrated. First, to control breeding too close to the flock's bloodline, ram lambs were castrated to prevent them from mating with their offspring. Second, rams, especially during the breeding season will fight for dominance and castrating subdues this tendency. Third, castrating boosts production of wool since the energy deflected from hormonal and breeding activity goes into other areas of growth, especially in wool.

10. Account book of Samuel Ingersol, 1685-1695, MSS 21, Peabody-Essex Museum, Phillips Library, Salem, Massachusetts. Ingersol recorded several sales of sheep while he was engaging in a Barbados-New Foundland regular shipping route. The values recorded were substantially higher than those in general probates at the same time. I am assuming that he was getting premium for them because they were a lucrative cargo.

Some New Englanders anticipated that their wool production could grow beyond meeting domestic needs and offer monetary enrichment:

[The Court]...having an eye to the good of posterity,...how profitable a merchandise it [woolen cloth] is likely to be, to transport to other parts [as staple trade items]...¹¹

By 1699, this potentiality became evident when England reacted negatively to New England's expanding wool industry. Enacting restrictive legislation of their own, English lawmakers sought to remedy merchants' complaints that wool and woolen cloth produced in New England seriously affected their own market viability. Resolved that "no person may export in ships or carry by horses" to anywhere outside of their own colony "any wool or woolen manufactures of the English plantations in America," the English Board of Trade moved to prevent further colonial competition with England's manufacturers. The penalties were stiff. Any Americans who defied the order risked forfeiture of their ships and cargo as well as the payment of a 500L fine in English money.¹²

11. Order of Massachusetts Bay General Court, May 14, 1645, reproduced in William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893), pg 6.

12. Abiel Holmes, D.D., The Annals of America from the Discovery by Columbus in 1492 to the year 1826, (Cambridge: Hilliard and Brown, 1829), Volume I, pg 474.

The threat to English woolen manufactures sprang from the enthusiasm with which colonists responded to the Massachusetts General Court's 1645 plea. Probate inventories recorded for Essex and Suffolk Counties in the period leading up to the 1699 order, reveal the expansion of sheep ownership over the period:

Table 1: Frequency of Probate Records Reporting Sheep¹³

Years	Essex	Suffolk	Suffolk hinterland
1630-49	5 (n= 70) 7%	21 (n= 71) 30%	16 (n= 48) 33%
1650-69	92 (n=336) 27%	85 (n=518) 16%	50 (n=175) 29%
1670-89	186 (n=486) 38%	75 (n=606) 12%	59 (n=210) 29%

In the first decade of settlement under study, only three probate inventories reported sheep. After the 1645 appeal from the Massachusetts General Court, however, inventories reporting sheep multiplied. Between 1650 and 1690, more than one-third of all inventories recorded consistently included sheep.

At first glance, Suffolk County seems to experience a decline rather than increase, but a significant segment of Boston's probate inventories are those of single transient men, mostly sailors who tended to die young and without significant amounts of personal property. This distorts Suffolk County's overall rate. In addition, the rapid general growth of Boston probably made access to common pasture increasingly difficult, reducing

13. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

opportunities for livestock ownership. As Edward Johnson commented, in just fourteen years of settlement "Boston, the which of a poor country village, ...is become like unto a small city."¹⁴

Table 2: Frequency of Sheep in Boston Probates¹⁵

Years	Boston
1630-49	5 (n=22) 23%
1650-69	35 (n=344) 10%
1670-89	16 (n=402) 4%

As Table 2 shows, the number of inventories reporting sheep occurred with decreasing frequency over the period. Thus, when Boston's probates are excluded from Suffolk County's overall rate, Suffolk's remaining towns show rates much closer to Essex County's. Taken together, probate inventories recorded in the two counties indicate that sheep production began reasonably early and grew at a fairly stable rate throughout.

In this context, Johnson's 1651 estimate becomes a benchmark in the economic progress of the colony, but the number of sheep existing in the colony says little about strategies employed to manage or propagate them. Again, the Massachusetts General Court documents provide some hints.

14. Captain Edward Johnson, Wonder-working Providence of Sions Savior in New England, London, 1654; pg 208, reproduced in Library of American Civilizations, microfiche # LAC15925

15. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

The court issued regular proclamations covering pasture divisions and usages as early as the 1630s. These chiefly directed all towns to allow liberal common usages for freemen developing sheep flocks. Between 1640 and 1645, the court also dispatched several orders encouraging their acquisition and propagation as well. All told, each order cited the essential nature of cloth to the continued success of the colony, the unreliable nature of imported sources and the economic hardship that imports placed on the immature economy.¹⁶ Naturally, colonial legislative orders were implemented at the town level and it is there in various town selectmen records that local strategies can be observed:

Whereas the [Massachusetts] General Court hath left it in the Selectmen of every Town to make orders for the clearing of their commons for the better keeping of their sheep.¹⁷

Thus, as a rule, selectmen of the town established the guidelines and allotments of common grazing, but always within the broad legislative recommendations of the Massachusetts Bay government. In this way, towns were able to add the particulars of their specific circumstances and needs while serving the larger

16. For a survey of early Massachusetts laws and General Court orders relating to cloth production see William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893).

17. Entry dated April 25th, 1657, Ipswich Town Records, 1634-1662, Manuscript #21, leaf 1, Peabody Essex Museum, Salem, Massachusetts.

interests of the colony. Indeed, not all towns had the same access to common grazing land nor did every town have the same priorities.

In coastal towns, for instance, islands or small grassy peninsulas jutting into the sea offered perfect grazing areas that required little fencing or protection from marauders. These areas were ideal, but by their very nature limited in capacity. After the first two decades, many coastal towns found themselves with grazing management problems as their herds and flocks multiplied. The minutes to the meetings of Ipswich's selectmen (1634-1662) reveal the problems and solutions faced by one of the larger coastal towns' administration.

Although sheep flocks were owned by individuals, Ipswich's flock was usually pastured and managed as a single group for at least part of the year. Beginning in the 1630s, most of Ipswich's common lands were made available for grazing from March to November. Very often, because their demand on the pasture grasses was far less stressful than those of the larger pasture animals, sheep were the first to move out to common pastures. Their small hooves and light body weights minimized potential danger to the sod, especially in the damp spring weather. In the fall, sheep were the last grazers brought in because they could glean sustenance from the dying fields longer than the larger foragers. In between,

individuals kept flocks on their home lots, especially through the early spring lambing period.

Originally, Ipswich selectmen hired one or two herdsmen to take all of the town's livestock out to the commons each day between April and November. Sheep, goats and cows intermingled with little distinction made between the livestock species. All of the grazing animals had similar needs of water and grass meadows and, at first, a shared pasture made sense since one or two herdsmen could be hired to tend the entire town's "great Herd".

One can almost imagine William Fellows, the herdsman engaged by the town in January, 1639, moving from houselot to houselot collecting animals into the ungainly parade bound for Jeffries Neck, the first town common. In the misty morning just a half hour after sunrise, Fellows would drive the animals out, perhaps with the help of his sons and maybe his dog. Once out on the Neck, Fellows closed the gate constructed by order of the town across the narrow strip of land connecting it to the mainland. Throughout the day, he guarded them against attack by stray dogs, wolves or other predators, but, more importantly, he prevented them from wandering back, pushing through the gate and laying waste to town gardens and fields. At the end of the day, "not before half an hour before sunset," the herd would retrace its steps,

each animal probably turning eagerly in without prompting at the home gate.

For his pains, Fellows, and the other herdsmen who would be hired over the years, was paid in corn and grain, but also fined if the herd wandered and damaged property while under his care. Fellows, one of the town's sheep shearers, must have been a competent herdsman, since no mention of his paying fines was recorded in the Ipswich meetings through the period of his tenure.¹⁸

Under the watchful eye of William Fellows, Ipswich's livestock population quadrupled in less than fifteen years. With such an enormous increase, the town's original common grazing land was no longer adequate and the selectmen began the process of dividing the "great herd." By 1654, the first common area, Jeffries Neck, was so over-grazed that only the sheep flock was allowed to pasture there. Four years later, the town subdivided the flock and hired the family of John Payne, living on Jeffries Neck, to provide a fold and care for half of the town's flock. Thomas Manning was contracted to put the rest on a new common cleared on the north side of the river.¹⁹

18. Entry dated January 5, 1639, Ipswich Town Records, 1634-1662, Manuscript #21, leaf 1, Peabody Essex Museum, Salem, Massachusetts. Will of William Fellows, March 27, 1677, ECPR, Vol. III, (Salem: The Essex Institute, 1917), pg. 128-130.

19. Entry December 12, 1658, Ipswich Town Records, 1634-1662, Manuscript #21, Peabody Essex Museum, Salem, Massachusetts. The "fold" described in this entry is most likely an enclosure made with high, solid wooden fences

Under continued pressure from the expanding livestock population, selectmen worked to extend the town's pasturage and to regulate the commons already in use. Restricted from Jeffries Neck, cows, oxen, goats and horses needed additional pasture areas that could support their needs. In response, the selectmen decided to speed development of supplementary common pasture by requiring labor from each householder with a claim to common rights:

Whereas...the Selectmen of this Town doth order that [of] the Inhabitants of this Town one able person of a family shall work one day in May or June as they shall be ordered according to the several divisions of the Town upon a days warning.²⁰

Thus, the Ipswich selectmen worked to stay one step ahead of their prolific animal population.

Other regulations concerning common pasture usage limited individual townspeople's use. For example, a freeman who possessed a claim to common grazing was not able to put all of his animals willy-nilly out on the commons. Animals other than cows were regulated using a "cow standard" and were pastured accordingly: two horses

meant to keep the sheep flock closely under supervision for the night. Sometimes, the enclosure would be partially roofed over to provide shelter from rain as well. Very often the shepherds would make a temporary residence for themselves right up against the fold's walls, so they were readily available if anything threatened the safety of the flock, especially the younger lambs.

20. Entry dated April 25th, 1657, Ipswich Town Records, 1634-1662, Manuscript #21, leaf 1, Peabody Essex Museum, Salem, Massachusetts.

to one cow, five sheep to one cow, and so on.²¹ Each commonage right was measured by the number of cows it could accommodate and was clearly delineated by the holder's social and economic standing in the town's hierarchy. Proprietors enjoyed the best and largest portions of common rights, while freemen of inferior status were entitled to much less. Commonage rights most often accompanied the ownership of certain land divisions, but could be devolved upon children independently.

A Rowley farmer, Francis Lambert, kept his "gates" and land together when he made his will in 1648.²² Leaving the bulk of his estate to his eldest son, John, Lambert provided a small gift for his other sons out of the profits from their brother's share. The rest of the children received moveables and cash payments, but no land or common rights.²³ Nineteen years later, John Lambert died leaving his wife and two young children. Proved in 1667, Lambert's will assigned his father's commonages equally between his children, Abigail and

21. These standards are still accepted wisdom today. For early modern England see Thomas Tusser, Five Hundred Points of Good Husbandry, 1580 edition reproduced, (London: Lackington, Allen & Co, 1812), pg. 149. For 17th century Massachusetts see Marblehead Town Records, Essex Institute Papers, Vol. LXIX, No. 3-4, (July-October, 1933):207-329.

22. A "gate" was another form of measure for the common pastures. In Rowley, a gate was equivalent to one acre by order of the town selectmen, 25 February 1662, Rowley Town Records, (Rowley, Massachusetts: 1894), pg. 129.

23. Will of Francis Lambert, ECPR, Vol. I, pg. 94.

John. Valued separately from the acreage, the common rights passed to the children as part of their inheritance. In this way, the "gates" became divorced, to a certain extent, from the original land divisions that assigned them to John's father, Francis Lambert.²⁴ With the death of her mother in 1681, Abigail Lambert was left homeless while still a minor. Heir to 4L of commonage in Rowley through her father, Abigail subsequently became the ward of her paternal uncle, Thomas. Ironically, Thomas Lambert, who did not inherit either land or common rights from his father, received at least temporary control over "rights of pasture" through his niece.²⁵

Another Rowley family, the Stickneys, acquired additional common rights by leasing them. Entering into a lease agreement with the town in 1662, William and his son Samuel agreed to pay lease rent and to lay "dung" each year on land belonging to the church. Left to Rowley's church leadership by their first minister, Ezekiel Rogers, the land served to defray the cost of maintaining the ministry.²⁶ The new pasture increased the Stickney men's pasture holdings by at least eight acres, allowing them to expand the family's livestock holdings. Three years into the lease, William died leaving Samuel

24. Will of John Lambert, ECPR, Vol. II, 102-103.

25. Guardianship of Abigail Lambert, ECPR, Vol. III, pg. 426.

26. Will of Reverend Ezekiel Rogers, ECPR, Vol. I, pg. 331-36.

in control of the lease as well as his inherited commonages.²⁷

For those who owned few animals, but more commonage rights, additional pasture privilege could be traded, sold or rented to another freeman with greater need, but only among town members. Animals from other towns were not often allowed pasture on the common land, even if sponsored by a resident.²⁸

The search for adequate pasture spawned many creative alternatives to meet individual farmers' needs. One industrious Ipswich freeman, Robert Lord, capitalized on his position and the town's lack of pasture in an unusual way.

Lord served his community in many capacities: as a selectman for the town of Ipswich in the 1650s, a clerk to the Essex County Quarterly Court, as a marshall and as the town grave digger. In 1650, he petitioned the Ipswich town meeting for control of the grass growing on the town burying ground. As grave digger, Lord felt he had the greatest claim on that land and, subsequently, the town agreed. "As long as he continues to be employed in burying the dead," the grass was his to use or rent out as long as large animals such as cows or oxen were not

27. Will of William Stickney, ECPR, Vol. II, pg. 5-8.

28. Salem Town Records, Vol. 1-3, 1634-1691, reproduced in Library of American Civilizations, microfiche # LAC20507.

trampling the graves of the departed citizens of Ipswich.²⁹

The town of Marblehead experienced even more difficulties obtaining and developing adequate pasture partly because of geographic boundaries and partly because of poor pasture areas within the town. Located on a rocky coastal peninsula, Marblehead had limited pasture available for its freemen from the beginning. By 1653, a group of Marblehead citizens claimed they were deprived of their fair share of common pasture. Town selectmen eventually agreed. However, since there was no additional pastureland to allocate them and no undeveloped land to improve, the selectmen agreed to purchase common rights on behalf of forty-four families from a neighboring town.³⁰ In the same period only a few miles away, Salem town residents wrangled over restricted access to pasturage on Winter Island.³¹

For inland towns, the successful management of grazing animals hinged less on whether land could be developed and more on what land should be cleared and how it would be divided. Moreover, without the relative

29. Robert Lord is listed as a clerk and a marshall on several probate records recorded in Essex County, Salem Quarterly Court Records, Vol. 6 leaves 6, 13. Entry for February 5, 1650, Ipswich Town Records, 1634-1662, Manuscript #21, Peabody Essex Museum, Salem, Massachusetts.

30. Marblehead Town Records, Volume 1, 1648-1683, (Salem: Essex Institute, 1933).

31. Salem Town Records, Vol 1-3, 1634-1691, reproduced in Library of American Civilizations, microfiche #LAC20507

isolation of islands or areas like Jeffries Neck, livestock protection and control was more labor intensive in the interior towns. The extra labor involved, however, did not hinder the proliferation of sheep in these areas. And, although the need for pasture did not stem solely from the growth of sheep flocks, the utility and versatility of the small animals made them popular. Indeed, according to one author of an early agricultural tract, sheep were used by inland towns to mend "poor land" by folding them on small areas where they consumed the briars, weeds and "mangy grass" making way for the growth of good English grass and other ruminants.³² Due to the high nitrogen content of their manure, sheep could also be used to revitalize the exhausted soil of over-used cropland.

A contemporary witness described in detail one town's use of their collective flock as a means to improve land:

23 December, 1704

[The people of Fairfield, Connecticut,] have an abundance of sheep, whose very dung brings them great gain, with part of which they pay their parson's sallery and they Grudge that, preferring their Dung before their minister. They let out their sheep at so much as they agree upon for a

32. Jared Eliot, Essays Upon Field Husbandry in New England, As It Is Or May Be Ordered, (Boston: Edes and Gill, 1762), pg 8.

night; the highest bidder always carries them, and they [the sheep] will sufficiently dung a large quantity of land before morning.³³

Finding adequate pasturage was just one management difficulty faced by livestock owners in inland or coastal towns by the 1650s. Another was reproduction. Initially, the sheep flock - rams, wethers, adult ewes and lambs - were kept together year round except for the period when individual flock owners held them on their homelots. As the size of the collective flocks grew, management of the pregnant ewes became more difficult. Flock owners did not, for instance, know when their ewes had been bred and therefore could not accurately predict lamb births. Lambing became more erratic, losses became more frequent, and this created more difficulties for individual farmers. When William Fellows had first watched over the "great herd," he probably informed individual flock owners when breeding activity occurred, but once flocks began to number in the hundreds and then in the thousands, such precise observation of ewe/ram mating was no longer feasible. Again, the selectmen responded.

Beginning in 1659, Ipswich freemen voted to leave decisions concerning the sheep flock to the selectmen. Primary in their consideration was the selectmen's goal of keeping rams from the ewes until "a convenient

33. Sarah Knight, The Journal of Madame Knight, (reprinted in New York: Peter Smith, 1935), pg 62.

season."³⁴ Underlying this simple statement was the need of the community to have control over the reproductive cycles of their animals. Lambs born too early in the season risked freezing in the late winter cold and those who survived had to be fed precious stocks of hay when weaned before spring grass sprouted. Lambs born too late in the season were also a problem since they continued to nurse their mothers after the time the flocks should be culled and separated as well as ran greater risks of warm weather disease and fly strike. Late lambs also prevented farmers from an appropriate shearing time and disrupted the seasonal breeding cycle by delaying ewes' recovery from their pregnancy. By ordering the removal of the rams, the selectmen hoped to preserve a balance in their flock's reproductive cycle and in the farmers' seasonal labor requirements as well.

As we have seen, the collective sheep flock of Massachusetts Bay reached over three thousand by 1650 while just ten years later, the town of Ipswich managed upwards of a thousand. How did an individual come to possess a part of this important resource? The obvious method was, of course, to follow the advice of the general court order asking friends or relatives to bring them from England. However, it was not possible for every person who emigrated to bring livestock with them. Time

34. Entry dated November 17, 1659, Ipswich Town Records, 1634-1662, Manuscript #21, Peabody Essex Museum, Salem, Massachusetts.

resolved this issue, though, and, as flock sizes grew, opportunities for individuals to acquire breeding animals for their own use widened. One strategy for access to breeding animals and their wool can be found in the diary of Reverend Thomas Barnard.

Barnard acquired and developed a flock of his own through "renting" the sheep of another farmer, Simon Bradstreet. In 1687, Barnard entered into an agreement with Bradstreet to care for a small flock of eight ewes. The "rent" consisted of one-half of the flock's "increase" or half of all the lambs born to the flock each spring plus one for his table. Immediately after Barnard received the ewes, one died, but apparently Bradstreet did not consider the dead ewe a problem because the sheep stayed on at Barnard's. Between 1687 and 1692, Barnard carefully noted in his journal each year's lamb crop, the number of sheep he killed for mutton and any other deaths. At the end of six years, Barnard now owned ten adult ewes of his own. In the spring of 1692, he delivered twelve ewes, the seven original ewes and five of the "increase," to his neighbor, John Farnum, who became Bradstreet's new sheep tenant.

Continuing to record his flock's activity, Barnard reckoned each year's increase in lambs. He likewise tallied slaughtered sheep for his table as well as wolf

depredations.³⁵ On average, Barnard kept about ten breeding ewes, six wethers, a ram or two, and consumed two lambs each year. By 1707, his flock size leveled out at about thirty. One can only guess if John Farnum enjoyed as much success as Reverend Barnard, but given the regular increase in the numbers of sheep reported in probate inventories over the period, it would seem so.³⁶

Another method was to inherit them. Sheep appear continuously in Essex and Suffolk County probate inventory records throughout the period under study. Often used as a moveable inheritance, men, women and children received bequests of as few as one or as many as several hundred. One example of this strategy was Hugh Alley, a poor farmer from Lynn, who judiciously divided his small flock of twelve sheep amongst his family:

This 2 day of the 11 month 1673...the last will of hugh ally Sener I give to my son John Ally a yew sheep and lamb at mickelmas next his wife and children for to have the yuse of them tele the children com to age and then the children to have the yew shep and the lamb and the incres of these sheep, I give to my grandchild John linsy at michalmase next a ewe shep and the first ewe lamb that this ewe brings his brother Elizer linsy shall have...³⁷

35. Barnard recorded only one loss of a lamb to the wolves.

36. Manuscript Diary of Reverend Thomas Barnard, 1688-1707. Family Manuscript Collection, #B2598, Peabody Essex Museum, Salem, Massachusetts.

37. Will of Hugh Alley, Sr., ECPR, Vol. II, (Salem: The Essex Institute, 1917), pg 407-408.

Under the terms of his will, Alley gave each of his children and grandchildren a ewe and the first ewe-lamb born to it. The rest of the flock, about five, became the property of his wife, Mary Alley, to dispose of as she "sese most nede." It seems likely that Alley's flock remained intact despite its diverse ownership pattern, except perhaps when individual animals were sold or slaughtered. Indeed, the communal nature of most towns' approach to flock management made it possible for people like Hugh Alley to own a few sheep, but still manage to propagate enough animals to provide children with a small inheritance of a few animals apiece.

An account book kept by Topsfield weaver John Gould illustrates the diverse ownership possible in a Topsfield, Essex County, flock. Keeping track of his share of the wool and lamb crop, Gould noted in 1698 that there were eighty-five animals in the flock that included his own. His father, two brothers, Goodman Bixby and Goodwife Cary all owned a portion of the flock which was serviced by a neighbor's ram. The ewes, wethers and lambs all foraged together and were identified by tattoos or distinguishing marks made on them at spring shearing time. The group shared the cost of pasture for their flock and carefully separated the wool crop at shearing time.³⁸ Goodwife Cary, as Mary Alley may have done,

38. Account Book, John Gould of Topsfield (1662-1724), MSS 223, Essex Peabody Museum Library, Salem, Massachusetts.

benefitted from her association with the Goulds and Goodman Bixby in the reduced cost of maintaining her small flock.

Probate evidence supports the view that sheep, as an easily kept and potentially abundant animal, was useful for people of limited means like Hugh and Mary Alley.

Table 3: Wealth Distribution of Probates Reporting Sheep in the Period 1630-1690.³⁹

County	0-200L	201-500L	501-800L	801L+	Total
Essex	119-42%	96-34%	40-14%	28-10%	283-100%
Suffolk	74-40%	62-34%	24-13%	21-12%	181-100%

In Table 3, the largest percentage of probates reporting sheep were those valued under 200L and almost half of all inventories recorded in the period fell in the same category. The prevalence of sheep in the probate records of the "lower sort" such as Hugh Alley points to several factors: sheep were relatively inexpensive to maintain compared to cows, were more prolific and readily available.

These factors were reflected in the lower price of sheep over the period. In 1645, the average cost of a yearling ewe was forty shillings. This relatively high valuation suggests a limited supply and a large demand. By 1660, prime blood stock brought one-quarter the price, ten shillings, making the purchase of six sheep equal to

39. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

the purchase of one cow. Fifteen years later, the average price halved to five shillings verifying that the supply of animals grew well enough to meet the demand over the period. As sheep became more prevalent, they became more affordable for poor farmers in general.⁴⁰

In practical terms, sheep were ideal for people who had less access to grazing. They could subsist on inferior, even meager, amounts of forage compared to the more specialized needs of cattle. As we have seen, sheep cost less per animal, and, because of their relatively small size, required less space. Moreover, their reproductive patterns allowed farmers to increase the size of a flock readily.

Gestation for sheep lasted five months, less than half that of a cow. One season's pregnancy usually terminated in at least two offspring and sometimes three compared to the bovine birth pattern of a single calf. Moreover, once they were born, lambs matured at a much faster rate than calves, reaching sexual maturity by five to six months. Calves, on the other hand, took eighteen months to two years to reach reproductive age. Finally, because a ewe lamb could be bred in the first year, the flock reproduced geometrically each year. All of these

40. I developed the typical cost of a breeding ewe by averaging probate values from the period. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm. For another source that confirms my estimates, see Louis G. Connor, A Brief History of Sheep Industry in the United States, (Washington, D.C.: GPO, 1921), pg 93.

factors combined made the return on a venture such as Reverend Barnard's far less risky than if he "rented" cows. In this way, sheep can be seen as the best poor man's livestock.

Yet, the bulk of sheep were not owned by the "lower sort" of people. Instead, as Table 4 demonstrates, the average flock size grew in proportion to the value of the probate. For all the same reasons that sheep might appeal to a farmer of limited reserves and means, they appealed to more prosperous colonists as well.

Table 4: Average Flock Size Related to Probate Value⁴¹

County	0-200L	201-500L	501-800L	801L+
Essex	9	15	21	47
Suffolk	6	14	23	28

A more prosperous farmer, such as Simon Bradstreet, might own as many as two hundred sheep, but in arrangements with lesser men, he could "rent" out his entire flock in small groups. In this manner, Bradstreet would tap into a greater share of the town common grazing lands and labor market without investing more than the cost of his flock. Each time his flock reproduced, he was guaranteed a share of the new lambs and their fleeces and paid out only half of the "profit" to his tenants. Unless the sheep flock suffered enormous damage from

41. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

wolves or disease, its continued growth in size and value was as certain as each new spring crop of lambs and wool.

As the General Court outlined in its 1645 order, it was the wool that made sheep most appealing to New England colonists. Easily processed into cloth, wool was warmth and survival in the winter and possibly a trade product as well. Probate inventories indicate the presence of raw wool in a substantial portion of inventories, especially in Essex County:

Table 5: Frequency of Wool Fibers in Probate Inventories⁴²

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	2 (n=70) 3%	30 (n=71) 42%	30 (n=48) 63%
1650-69	47 (n=336) 14%	63 (n=518) 12%	31 (n=175) 18%
1670-89	208 (n=486) 43%	52 (n=606) 9%	33 (n=210) 16%

The average yield from an English sheep breed in this period was approximately four pounds per year. This meant that a person who kept only two or three sheep could expect to harvest between eight and ten pounds at shearing time. Once the housewife processed her wool, she could have as much as five or six pounds of finished yarn, certainly enough for five or six yards of cloth. For larger flocks, the yield was much greater and could produce impressive amounts of marketable wool. As we have seen, by mid-century the collective flock of Essex and Suffolk Counties had the potential to produce a

42. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

substantial volume of raw wool each year, the 1651 wool crop amounting to over six tons.

At first glance, the acquisition and propagation of sheep in early New England appears to have been exclusively a male concern. From the broadest legislation enacted by the members of the Massachusetts General Court down to less lofty discussions between selectmen over the pasturing and breeding cycles of their flocks, men presided over every detail. However, closer examination reveals that women invested more than a passing interest and involvement in this seemingly male-dominated arena.

Spring lambing, for instance, was clearly a time when women, rather than men, were most involved with the sheep. Kept in a "borth" built near or in the house yard, pregnant ewes were carefully watched for signs of delivery. In most cases, lambing probably went smoothly, but often enough, a ewe needed human help to birth a particularly large or unusually laid lamb. Since children and their housework held them in place, women were more likely to have kept "lambing vigils" over their families' flocks. Moreover, as the recent work of women's historians has shown, women have traditionally been responsible for the milch cows, chickens and bacon pigs kept close to the house.⁴³

43. Jeanne Boydston, Home and Work: Housework, Wages, and the Ideology of Labor in the Early Republic, (New York: Oxford University Press, 1990), pg. 5-9.

Other factors indicate women's involvement as well. Given the relatively small size of ewes and their vaginas, as well as their propensity to birth twins, a woman's smaller hands and general knowledge of midwifery made her more likely to care for the ewes during this time. Once lambs were born, lactating ewes sometimes produced more milk than their lambs could consume and this abundance could make them ill if they consumed too much. The remedy was to milk ewes out, at times twice a day, and this undoubtedly fit in with the regular routine of milking the family milch cow. The extra milk was very often used to make an especially rich cheese or mixed with the cow's milk for a higher protein ratio. An English verse elucidates this bonus of extra milk from the flock:

To milk and to fold them, is much to require,
 Except we have pasture to fill their desire.
 Yet many by milking (such heed do they take),
 Not hurting their bodies, much profit they take.
 Five ewes to a cow, make a proof by a score,
 Shall double thy dairy, or trust me no more,
 Yet may a good housewife that knoweth the skill,
 Have mixt or unmixt, at her pleasure and will.⁴⁴

44. Thomas Tusser, Five Hundred Points of Good Husbandry, 1580 edition reproduced, (London: Lackington, Allen & Co, 1812), pg 149.

The opposite problem- -too little milk- -could also occur and then lambs had to be sorted out, fed manually or grafted onto ewes who could support the extra lamb. Lambs required watching, too. Gilded and docked as soon as they were born, new lambs needed to be coddled for a few days before they regained strength and growth.⁴⁵

The bulk of these chores fell solidly within the realm of the nurturing role that women expected to fulfill and, most likely, did. In the early spring of the year when the days were still short and the garden chores still a month or two away, it is easy to imagine Mary Alley keeping a lambing vigil. Lighting an early-morning lantern, wrapping herself in a shawl and trudging out to the sheep pen, Mary Alley would check the ewes' progress. Amid the cacophony of lamb bawls and ewe grunts, she would look for signs of imminent birth, feel the bellies of the new-born lambs for warmth and fullness and perhaps throw a few dried apples to her favorite ewes.

By the end of March, lambs were weaned and then ewes, wethers and rams were re-assembled and washed. Washing them merely removed the outer dirt and vegetable fibers that collected in their coats over the winter months and made shearing them less difficult. Generally

45. Gelding was the process of emasculating ram lambs by binding the scrotum tightly enough to destroy the testes and render the animal incapable of reproduction. Docking was the practice of removing the tails by chopping them off with a hatchet and then dipping the severed end in tar to prevent disease.

this was done in a mill pond or a sluggish stream (a strong current would carry the animals away and drown them) and usually when the weather had warmed sufficiently for them to dry off quickly in the sun. A few days later, they would be sheared and, even then, women played an important part.

The obvious female contribution to this event was described best by Thomas Tusser, indicating a tradition of community-based sheep management that harked back to England in the previous century:

Wife, make us a dinner, spare flesh neither corn,
Make wafers and cakes, for our sheep must
be shorn.
At sheep-shearing, neighbors none other
thing crave,
But good cheer and welcome, like neighbors
to have.⁴⁶

Aside from providing meals for the nourishment of the men like William Fellows of Ipswich who wrestled, caught and sheared the flock, women performed other tasks as well. Some women probably sheared. In England, it was not uncommon for a woman to be a "clipper of sheepe." An account book held in the Sussex Archaeological Collections recorded payment to "the wife of Geo. Baker for shearing 23 sheep." Another from Norfolk assessed a

46. Thomas Tusser, Five Hundred Points of Good Husbandry, 1580 edition reproduced, (London: Lackington, Allen & Co, 1812), pg 271.

woman shearer's wages.⁴⁷ In New England, evidence of shearing arrangements remains unclear. William Fellows certainly owned sheep shears; they were in his probate inventory and, as a town shepherd, it seems likely he knew how to use them, but it could easily have been his wife that wielded them come shearing time.

Shearing day was most likely chosen and organized by town selectmen, but women and children certainly joined in the process. As the shearers cut each fleece away from the body of the sheep, helpers laid the fleeces out and "skirted" them. Skirting was the process of removing all of the manure tags and urine-soaked wool sheared near the rump, head and belly of the sheep. Leaving the soiled portions on would ruin the rest of the fleece if left together. The tag ends, belly wool and soiled pieces skirted from the fleece were then soaked clean in a tub with soapy water and then laid out to dry in the shade. Later, housewives used this low quality fiber for felting or for stuffing comforters or cushions. These tag ends may also have been the only source of wool for the truly poor who had little, if any, access to animal products.⁴⁸ Once fleeces were skirted, helpers rolled them up with

47. Quoted in Alice Clark, Working Life of Women in the Seventeenth Century, (London: George Routledge and Sons, 1919), pg. 62.

48. In England, the strolling poor would send their children out to gather wool left on hedges by the sheep in the spring before they were sheared. See Alice Clark, Working Life of Women in the Seventeenth Century, (London: George Routledge and Sons, 1919).

the skin side facing out, tied them into small bundles and carried them away to dry attics until further processing. All of these tasks required minimal physical strength and tended to be seen as appropriate work for women and children.

Once lambs were weaned and shearing done, the flocks generally began their early summer grazing cycle and returned to the care of the town shepherds. Even then, it is possible that men and women shared responsibility for protecting or watching over the sheep. In mid-17th century England, one woman wrote that when she walked on the common land close to her home, she encountered "a great many young wenches" who kept sheep and cows.⁴⁹ With so many of England's rural customs re-created in New England, it seems likely that young women in Massachusetts could have done similar work. Moreover, since shared work was by custom credited to the head of household, the wives' and children's participation was nearly always obscure except to contemporaries. A case in point was John Payne of Ipswich.

Appointed shepherd for a portion of Ipswich's flock in 1658, Payne became one of William Fellow's successors. His share of the flock, approximately four hundred animals, was to be folded on his farm with provisions for

49. Letter from Dorothy Osborne to Sir William Temple, 1652-1654, reprinted in Alice Clark, Working Life of Women in the Seventeenth Century, (London: George Routledge and Sons, 1919), pg. 54.

pasture being made both on Jeffrey's Neck as well as on his own farm lot. The contract between Payne and the town specified that he "fold them upon his farm" for one half of the year and the common for the other.⁵⁰ One would assume that it was he who watched and guarded the sheep, but Payne was a sailor, possibly a fisherman, who frequently went to sea. Who was did the shepherding chores in his absence? As recent studies of colonial labor patterns have shown, New Englanders relied heavily on "native-born family" for their labor needs. With this in mind, Payne's wife and children seem likely candidates.⁵¹

Whether wives and children worked with the flock prior to the harvest of wool probably varied as much as the number of families who owned sheep, but once the wool clip came home their labor was indispensable. Stored in the attics and lofts of their homes until winter, wool became the post-harvest focus of most households and children were very often set to the task of opening the fleece bundles, sorting and picking the wool.

When sorting, children may have separated the different lengths and quality of fibers that came from

50. Entry December 12, 1658, Ipswich Town Records, 1634-1662, Manuscript #21, Peabody Essex Museum, Salem, Massachusetts. John Payne Probate Inventory, ECPR, Vol.III, (Salem: The Essex Institute, 1917), pg 177-178.

51. Marcus Rediker, "Good Hands, Stout Heart, and Fast Feet: The History and Culture of Working People in Early America," Labour/ Le Travailleur, 10 Autumn 1982), 123-144.

each individual animal's body. The most desirable part of the fleece, the back and shoulder wool, was pulled out and set aside as the "top." These were the longest and usually the softest fibers in the whole fleece. The head, belly and leg wool was set aside as inferior wool that could be used for stuffing comforters or mattresses, while the remainder was set aside for felt making.⁵²

Once the fleeces were sorted (or sometimes while they were in the process), they would be picked clean of hay seeds, burdocks and other vegetable matter the sheep gathered in its fleece while browsing in the open pastures over the course of the year. Pickers worked mainly by simply pulling the fibers apart and shaking the plant debris loose, but more ambitious households may have used a mechanical wool picker. A hand-powered machine, the mechanical picker swung back and forth in a pendulum motion over long teeth that helped to pull wool fibers apart and release plant matter from its tangle.

The next step in preparing wool for spinning was the carding process. Children were often chosen for this activity because its easy and repetitious nature required little supervision. Using two wooden paddles studded with nails or thin wires, a carder combed the wool by passing the rough surfaces of the hand cards across each other until the wool fibers were all lying in the same

52. Most hats not made of beaver skin felt or summer straw were made from wool felt.

direction. Combed wool was peeled carefully off the hand cards and rolled into tube-like structures, called rolags, which were stacked carefully in baskets to be spun later.

Spinning was so exclusively a female activity that the word "spinster" became synonymous with an unmarried woman, perhaps at first because it was mainly unmarried daughters who worked at their mother's or neighbors' spinning wheels before their marriage. Spinning occurred in a variety of settings. Women with wheels could spin their own or a neighbor's fiber. Easily interrupted, housewives could spin inbetween the demands of caring for small children or ailing relatives. Unmarried women could spin to earn extra money or fulfill a debt of labor owed to another household. Since spinning was not physically demanding, elderly women could contribute to a family's work-load without the physical stress of digging vegetables or milking the family cow.

Spun yarn was most likely used as soon as it was manufactured, but some families kept stocks of yarn as surplus produce or in anticipation of a market demand. Evidence of household yarn stocks can be detected in the probate records of the period.

Table 6: Frequency of Wool Yarn Stock Found in Probate Inventories by Probate Value, 1630-1690.⁵³

Probate Value	Essex County	Suffolk County
0-200L	40 (7%) N=582	40 (3%) N=688
201-500L	29 (14%) N=215	60 (19%) N=317
501-800L	8 (14%) N=57	21 (22%) N=96
800L+	11 (29%) N=38	15 (16%) N=94

As Table 6 demonstrates, the poorer households tended to keep yarn less frequently, while the wealthier homes were more likely to keep them. This likely reflects a market strategy where households with greater access to wool used their skills and tools to produce materials bound for market as well as for their own consumption. Frequency of appearance in probates, however, cannot tell the whole story.

Table 7: Volume of Wool Yarn Reported in Probate Inventories, 1630-1690⁵⁴

Probate Value	Essex County	Suffolk County
0-200L	643# (16# av.)	515# (13# av.)
201-500L	1080# (37# av.)	583# (10# av.)
501-800L	664# (83# av.)	285# (14# av.)
800L+	624# (57# av.)	64# (4# av.)

The large amounts of unused yarn listed in probates suggests two different strategies employed by people in Essex and Suffolk Counties. In Essex County, most wool yarn was stockpiled in homes with higher probate values while in Suffolk County the yarn was not concentrated in

53. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

54. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

one economic sector. Rather, the distribution of yarn stocks may indicate that in Suffolk County, yarn may have been much less important as a market product. This is not to say that Suffolk County had less yarn production, rather to suggest that the products made from yarn may have been more important.

Spun wool was utilized in two major ways: knitted garments or woven cloth. Knitted garments included such items as stockings, scarves, shawls, sweaters and mittens. George Curwin, a 17th century Salem merchant, credited a number of accounts for stocking knitting and, in turn, sold three dozen pairs of stockings to regular customers between 1652 and 1655.⁵⁵ Where did these stockings come from? Chances are they were traded to Curwin by other men whose wives, daughters or employees plied their needles.

In his daybook between sheep flock tallies, Rev. Thomas Barnard recorded regular employment of the daughters of his neighbor and fellow sheep owner, John Farnum. Mary and Betsey Farnum did a number of tasks for Barnard including spinning, knitting and bleaching linen. Barnard recorded each transaction and credited the wages paid accordingly. In November of 1693, the sisters received twelve shillings for their knitting, perhaps

55. Family papers of George Curwin, 1610-1684, MSS 45, Peabody Essex Museum, Phillips Library, Salem, Massachusetts.

even knitting stockings meant for a merchant like George Curwin.⁵⁶

Still another reference to knitting as a means of female employment is found in the story of Mary Rowlandson, captured by Indians in a Narraganset raid on her Lancaster, Massachusetts, home in 1676. Finding it difficult to survive on the traveling rations provided by her captors, Rowlandson used her knitting skills to bargain for extra food. The most popular item she knitted was stockings. The yarn she used to knit came mainly from picked-apart stockings, items routinely stolen in raids on Massachusetts farmsteads.⁵⁷

Although knitting fulfilled important needs in colonial households, making woven cloth was the primary purpose of spun wool, and spinners were kept busy producing yarn bound for the loom. On average, one weaver could keep twenty full-time spinners busy, although in practice a weaver probably worked sporadically as yarn came in from specific households. Woolen cloth came in a variety of weights and weaves depending on its use. The most common types of wool cloth were broadcloth, serge and kersey.⁵⁸

56. Entry of November, 1693, Manuscript Diary of Reverend Thomas Barnard, 1688-1707. Family Manuscript Collection, #B2598.

57. Mary Rowlandson's account can be found in Charles H. Lincoln, ed., The Narratives of the Indian Wars, 1675-1699, (New York: Charles Scribner's Sons, 1913), pp 149-161.

58. These were the wool fabrics most often mentioned in probate inventories in the period.

Weavers manufactured broadcloth with a plain or "tabby" weave. Produced on a large loom, broadcloth tended to be more than twice the usual width of woven cloth, between 54 and 63 inches, and a standard length of 24 yards. Hard wearing, thick-textured and warm, broadcloth made ideal outer clothing, especially in the colder months of the year. Yarn destined to become broadcloth was always carded before spinning, creating a "worsted" yarn, and sometimes dyed as well. Once woven, broadcloth was not properly finished until it was fulled, a process that felted, tightened and thickened the fabric.⁵⁹ Rowley weavers, drawing on their Yorkshire roots, more than likely continued to produce broadcloth in Essex County since they were the first in New England to build a fulling mill. The entire process tended to make broadcloth the most expensive of the wool fabrics produced in this period, making it a profitable, but limited market product. Other cheaper types of wool cloth were produced to fit the needs of poorer households.

Serge, considered to be a lesser quality than broadcloth. Narrower and produced with less finishing, serge served an important role in the middling to lower colonial households. A twill weave, serge fabric was mid-weight rather than heavy and cheaper since the finishing process was far less labor intensive than that of

59. Florence M. Montgomery, Textiles in America, 1650-1870, (New York: W.W.Norton, 1984), pp. 177-179.

broadcloth. Used as an all-purpose fabric, serge could become upholstery, bed curtains, blankets and, for those who could not afford broadcloth, clothing. Notifying the English Council on Trade in 1705, Lord Cornbury, Governor of the Province of New York cautioned the Council to disrupt the production of serge in New England. "I myself have seen serge...[produced there that] any man may wear," he wrote. Pointing out that production of cloth in New England and other English colonies bred independence in America and trouble for English merchants in London, Cornbury called for an immediate suspension of colonial textile manufacture.⁶⁰

The least expensive pure woolen cloth was kersey. A twill weave made from the roughest of yarn, kersey was seldom fulled and only poorly dyed. As a result, kersey fit a wide range of uses similar to that of serge, but could be produced quite inexpensively and sold very cheap. The low cost made it available to the poor who regarded kersey as an all-purpose fabric.

All three types of locally produced woolens found their way into Massachusetts households and probate inventories confirm their existence.

60. William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893), pg 12.

Table 8: Frequency of Inventories Reporting New Wool Cloth, 1630-1690⁶¹

Probate Value	Essex County	Suffolk County
0-200L	73 (13%) N=582	41 (6%) N=688
201-500L	46 (21%) N=215	27 (9%) N=317
501-800L	5 (9%) N=57	11 (12%) N=96
801L+	5 (13%) N=38	9 (10%) N=94

At first glance, the percentage of probates reporting new wool cloth in Essex and Suffolk Counties over the period seems low. However, when one views these stocks as the surplus available after the clothing or other wool cloth needs were met, the numbers become more significant. In Essex County middling households, for instance, at least one in every five households held surplus fabric in reserve.

Clearly, by the end of the century, domestic manufacture of wool cloth was reaching levels that made the "comfortable living" desired by the Massachusetts General Court in 1645 possible. The "miracle" of sheep and wool production observed by Edward Johnson in 1654 was even more evident. However, such abundance was less the result of divine intervention as it was the result of traditional practices and suitable conditions. Following labor customs established long before their emigration to Massachusetts, New England colonists developed their sheep flocks by careful management and hard work. The wool crop harvested from their flocks provided an ever-

61. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

increasing resource from which the domestic cloth would be manufactured. Woolen cloth produced in New England filled a gap made by the distance to England and the debt associated with colonial settlement. By the 1690s, the long-term goal set by the Massachusetts General Court of an exportable staple wool crop must have seemed imminent. One observer claimed that over three-fourths of all textiles used in New England were domestically produced.⁶² However, whether or not the New England cloth industry seriously challenged English textiles abroad, the potential benefits anticipated in 1645 were certainly fulfilled on the level of community consumption.

62. Report from Caleb Heathcote to the 1703 Royal Council on Foreign Trade Trade. See William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893), pg 12.

CHAPTER II

IMPORTED COTTON AND FLAX AGRICULTURE

"hemp and flax here [in New England] is [in] great plenty"

-Captain Edward Johnson, 1642¹

If seventeenth-century Massachusetts people only raised sheep and produced woolen cloth, they would have engaged in a significant textile industry that employed many hands, covered most of the colonists' nakedness and made commercial success possible. Yet sheep and wool composed only about half of early Massachusetts' textile efforts. Equal to the woolen industry in scope was the growth and processing of flax and hemp and the production of domestic linen and cotton fabrics. As one contemporary noted,

In [New England's] prospering hemp and flax so well that its frequently sown, spun, and woven into linen cloth;...and our linen yarn we can make dimittees and fustians for our summer clothing.²

Just as wool was manufactured into different fabrics, linen came in many weights and weaves. Under the rubric of "linen," household fabrics ranged widely in quality and use. Loosely woven strainer or cheese cloths differed little in content from the fabric that became

1. Captain Edward Johnson, Wonder-working Providence of Sions Savior in New England, London, 1654; pg 174, reproduced in Library of American Civilizations, microfiche # LAC15925

2. "New England's First Fruits...,"(1643), reprinted in Collections, Vol. 1-70, (Cambridge: Massachusetts Historical Society, 1792-1915), pp. 242-250.

pudding bags or flour sacking.³ The same linen yarn woven in a diaper weave became table linen or towelling. Medium weight yarn could be woven into sheets, pillow covers or aprons while the same weight yarn woven in a complex damask pattern created rich, more valuable table cloths or napkins. Heavier weight yarns, woven densely, became sail canvas, bed ticking or mattress covers.

As the author of "First Fruits" observed, linen was also an important fabric for certain types of clothing, mainly the clothing worn closest to the skin. In a typical 17th-century inventory, men's shirts, women's shifts and other sorts of "wearing linging" were undoubtedly linen; probably homegrown and domestically processed. Whether left natural or "brown" in color, dyed or bleached white after weaving, linen was used in a range of basic clothing from underclothing to heavy outerwear.⁴ However, the linen preferred for clothing was actually a blended fabric made up of domestic linen warp and imported cotton wefts called fustian.

3. Naturally, spinners preparing linen yarn for these different fabric types would have produced yarn appropriate for each use. The direction and tightness of the twist, the number and weight of the yarn plys and the actual part of the linen fibers used made for a wide variation in the fabric textures and weights.

4. For a discussion of 17th- century costume, see Patricia Trautman, "Dress in Seventeenth-Century Cambridge, Massachusetts: An Inventory-Based Reconstruction," in The Dublin Seminar for New England Folklife Annual Proceedings, 1987, ed. Peter Benes, (Boston: Boston University, 1989):51-73.

Massachusetts obtained cotton from the West Indies along with molasses. Historians have told the story repeatedly of how Massachusetts men turned West Indian molasses into gallons of exported rum. While dreaming of rum, these same historians have totally ignored the importation of cotton and how Massachusetts men and women manufactured mountains of domestically consumed cloth.

As for cotton, it had been recently taken up as a textile fiber in England and had rapidly become popular. In less than thirty years, cotton was desirable for constructing better, more comfortable clothing.

About twenty yeeres past [ca. 1602] diverse people in this Kingdome, but chiefly in the County of Lancaster, have found out the trade of making of other [cloth]..., made of a kind of Bombast or Downe, being a fruit of the earth growing upon little shrubs or bushes, brought into this Kingdome..., but commonly called cotton Wooll.⁵

The "cotton wooll" landed in New England came directly from English plantations on the islands of the West Indies, especially Barbados. John Winthrop summed up the situation in a 1647 journal entry:

As our means of returns for English commodities was grown very short, it pleased the Lord to open us a trade with Barbados and other Islands in the West Indies, which as it proved gainful, so the commodities we had in exchange there for our cattle and provisions, as sugar,

5. Quoted in Florence M. Montgomery, Textiles in America, 1650-1870, (New York: W.W.Norton, 1984), pg 244.

cotton, tobacco, and indigo were a good help to discharge our engagements to England.⁶

New England colonists interested in developing domestic textiles traded for Barbadian cotton as early as 1635 because they knew the utility and value of cotton/linen fabrics. Such fabric was durable, absorbent and easily washed. Fustians and dimities were the most common types of this genre and fit a wide range of uses.

Fustians, a large group of general purpose fabrics were mainly woven with a tight heavy texture. Sometimes they were plainly woven, but fustians could also be fashioned with "tufts" creating fabric like corduroy or velveteen. Fustians were used for anything from draperies to dresses or upholstery to men's waistcoats. Generally, though, it served as extremely durable outerwear fabrics, especially in the summer months when hot weather made heavy worsted wool outerwear unbearable.⁷

Dimities were a particular class of fustian. Much more finely woven and very often decorated, dimities were generally used as the clothing worn closest to the skin. One 1696 draper's handbook held that dimities of the finer type were best used to "line breeches" and "foot stokings" or for men's waistcoats and women's petticoats. As undergarments, or "small clothes," dimity shifts, chemises and drawers could be easily rinsed out and

6. James K. Hosmer, Winthrop's Journal, 1630-1649, (New York: 1903), Vol. II, pg 328.

7. Florence M. Montgomery, Textiles in America, 1650-1870, (New York: W.W.Norton, 1984), pg 244-245.

dried, even in the winter months and made wearing heavy woolen twill fabrics bearable.⁸

As a popular fiber in the colony, cotton was deemed so important that provincial committees of trade were routinely directed to acquire an adequate supply for their town. A decree issued by the General Assembly of Connecticut in 1641 is instructive,

Whereas yt ys thought necessary for the comfortable support of these plantations that a trade in cotton wooll be set upon and attempted and for furthering thereof, yt hath pleased the Governor, that now is, to undertake the furnishing and setting forth a vessell with convenient speed to those parts where the said commodity is to be had, yf yt prove phesable.⁹

The Connecticut governor subsequently commissioned the ship which returned eighteen months later with a cargo amounting to approximately 12,000 pounds of "cotton wooll." The cotton bales were then divided among the towns and sub-divided among the freeholders who were willing to pay the "rate" set to finance the voyage. Similar ventures were underwritten by Massachusetts towns.

The steady traffic of Caribbean cotton can be seen in a variety of extant 17th century records. One source is the probate records of New England merchants.

8. Quoted in Florence M. Montgomery, Textiles in America, 1650-1870, (New York: W.W.Norton, 1984), pg 218-222.

9. General Assembly order dated 8 February, 1641, reprinted in William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893), pg 5.

Mahalaleel Munnings, a Boston merchant with overseas connections, is a case in point. An inventory of his warehouse made upon his death in 1659 revealed a shipment of nine bags of raw cotton weighing close to a ton. Judging from his outstanding accounts, Munnings apparently speculated on the sale of these goods since most were designated the property of an overseas source.¹⁰ Munnings was not unique.

George Curwin, a prosperous Salem merchant, had overseas connections that regularly brought in West Indian products, especially cotton. In three account books spanning the years 1652 to 1662, Curwin entered the dispersal of raw cotton to his customers almost daily. Over the course of ten years, the more complete of the volumes reveal that Curwen sold at least two and maybe three bags of raw cotton each year, roughly 600 to 800 pounds. In a similar ledger where he noted cargo brought in from the West Indies by his own ships, Curwin tallied a total of over a ton of cotton received in two seasons' voyages.¹¹ When Curwin died in 1681, his estate inventory included three bags stored in his warehouse.¹²

10. Inventory of Mahalaleel Munnings, Town of Boston, SCPR, Vol. III, pg. 229.

11. Account books of George Curwin, Volume 1-3, 1652-1662, MSS 45, Peabody Essex Museum, Phillips Library, Salem, Massachusetts.

12. Estate Inventory of George Curwin, Box 9, Folder 5, MSS 45, Peabody Essex Museum, Phillips Library, Salem, Massachusetts.

About half of the cotton that arrived on Curwin's wharf in Salem was the property of Barbadian planters who shipped the cotton for credits to be paid in New England's most available currency: salted meat and fish, grains, rum or forest products. Barbadian planters were well aware that cotton could be sold as easily as sugar in the New England ports, especially Salem and Boston. Upon his arrival in Salem harbor, Francis Ellis, a merchant mariner, notified his Barbadian clients of the state of the market:

I doubt the sale of goods will be slow, I understand that rum is in at 3s,... cotton at the most 18d and doubt it will fall to 16d....yet shall we use all dilligence to make a sale for your best advantage... I hope to carry the return items myself.¹³

The diligence referred to by Ellis was not so much his need to rush about selling his cargo as his efforts to land the cargo in Salem. The habormaster refused to allow his cargo to be landed for fear of summer "pestilence" accompanying Ellis' sailors to shore. In several angry letters Ellis badgered the port authorities to allow him to dock, claiming that his ship was healthier than the streets of Salem. Three days after Ellis' protest letters, the cargo was landed and the cotton sold for a good price.¹⁴

13. Letter to Daniel and Robert Hooper, 08-12-1700, Francis Ellis Manuscript, letterbook, Peabody-Essex Museum, Phillips Library, Salem, Massachusetts.

14. All of the letters pertaining to this voyage are contained in one small letterbook. The price of the goods were noted in the margins of the letters. Letterbook,

Between 1688 and 1692 Samuel Ingwersol, a Salem mariner, recorded the shipping fees for a total of more than sixteen bags of cotton in his daybook. Over half was the property of a Barbadian planter known only as "Mr. Jardin," while a few bags may have been his own investment. Ingwersol regularly acted as agent for at least four different merchant/growers in Barbados and frequently carried cloth back from Salem as payment for the raw cotton.¹⁵

Salem merchants well understood the value of imported cotton as a likely commodity for investment. Aboard the ship, Prudent Mary, as its new master in March of 1694, Samuel Ingwersol received instructions for William Gedney's outbound cargo through Joseph Grow, master of a ship bound for New Foundland. Apparently, Gedney knew Grow would meet Ingwersol's ship to exchange some of the rum shipped from Salem for part of the salted fish bound for Barbados.

Memorandum. Mr. Joseph Grow.
 Please to ship the effects of my two
 hogsheads of fish [got in exchange for two
 of rum] in good raw cotton with Mr. Samuel
 Ingwersol if he comes for New England.
 William Gedney

Francis Ellis Manuscripts, Peabody-Essex Museum, Phillips Library, Salem, Massachusetts.

15. Samuel Ingwersol Account Book, 1685-1695, MSS 21, Peabody-Essex Museum, Phillips Library, Salem, Massachusetts.

In a routine already well established for nearly a decade, Ingersol loaded four and a quarter bags of cotton at Barbados for the return voyage to Salem.¹⁶

Not everyone who wished to import West Indian cotton was a merchant or otherwise connected to the rum trade. Anyone willing to risk the "bold venture" of Atlantic sea-trade could take a chance. A friend of Samuel Barton's decided to gamble on his horse. In a letter to Samuel Taylor, a Barbadian merchant, Barton outlined what his friend intended,

Sir, the enclosed is a bill of lading for one dark bay stone horse about four years old. Ship [the horse] to friend Joseph Pope on board the Brigantine Newberry, Ralph Lindsay, Master, for Barbados which he desires you would sell for him to his best advantage and the meet proceeds to send to him at first opportunity for Salem in good rum and cotton woole.¹⁷

Although the reverse side of Barton's missive shows notations regarding the cost of the horse's transport and feed, no corresponding memorandum survives of the rum and cotton proceeds from the sale of the horse. However, it is not difficult to imagine what Barton's friend did with his return cargo. Cotton would have provided him with a currency of sorts, mostly in the form of credit with a merchant. He could also have directly used the cotton or

16. March 1694 entry, Memorandum to Joseph Grow from William Gedney. Samuel Ingersol Account Book, 1685-1695, MSS 21, Peabody-Essex Museum, Phillips Library, Salem, Massachusetts.

17. Letter to Samuel Taylor, Box 1, file 1, item 2, Barton Family Manuscripts, MSS 110, Peabody-Essex Museum, Phillips Library, Salem, Massachusetts.

traded it for something he wanted more. This is exactly what Robert Barker did when he bought ten acres of land from Edward Hunt and paid mostly in "cotton woole."¹⁸ For many farmsteads in New England, though, cotton became available through the merchants who supplied their other market needs.

Scattered throughout extant account books, miscellaneous papers and daybooks of 17th-century farmers and small merchants are the lesser transactions that mark the movement of cotton into the homes of textile producers. Joshua Buffum, a small Salem merchant, routinely debited small amounts of cotton wool, generally between ten and twenty pounds, to his customers' accounts. In addition, he sometimes credited accounts with cotton thread presented as payment. One such account, that of Josia Wollcott, reveals an active textile manufacturing household that produced a total of several hundred pounds of spun thread and 85 yards of woven fabric in the years between 1688 and 1700. Interspersed with Wollcott's purchases of sugar and other household staples were the pounds of raw cotton that returned, in part, as either spun thread or woven cloth to Buffum's establishment.¹⁹

18. Edward Hunt to Robert Barker, Case 132, Volume 1, Records and Files of the Quarterly Courts of Suffolk County, unpublished microfilm, University of Massachusetts Library, Amherst, Massachusetts.

19. Joshua Buffum account book, 1674-1704, Buffum Family Manuscripts, FMS B9293, Peabody Essex Museum, Phillips Library, Salem, Massachusetts.

George Curwin's 1655-1657 ledger debited a variety of customers for regular purchases of "cotton wool." Analysis of his customer accounts over the course of three years reveals a telling pattern. Most households purchased an average of twenty pounds of cotton each year, usually in just one transaction per year. Virtually all purchases occurred in the winter months after harvest and before spring planting in a time when textile activity may well have been most active. Lastly, the same households tended to purchase their cotton at nearly identical times of the year, some preferring late fall and others early spring. This regularity of purchase suggests that the cycle of farm chores and seasons also influenced the household production of textiles even when the fibers utilized were available throughout the year.²⁰

As we can see from the Wollcott family and George Curwin's clientele, the regular flow of West Indian cotton into Massachusetts ports made it possible for textile producing households to obtain raw cotton essentially whenever they required.

20. Account book of George Curwin, Volume 2, 1655-1657, MSS 45, Peabody-Essex Museum, Phillips Library, Salem, Massachusetts.

Table 9: Frequency of Probates Reporting Cotton Fiber.²¹

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	6 (n=70) 9%	0 (n=71) 0%	0 (n=48) 0%
1650-69	39 (n=336) 12%	28 (n=518) 5%	12 (n=175) 7%
1670-89	103 (n=486) 21%	18 (n=606) 3%	8 (n=210) 4%

Although raw cotton reported in probate inventories is only a crude indicator of the distribution of cotton among all households, Table 9 indicates that the frequency of "cotton woole" rises to almost one quarter of all households evaluated in Essex County over the period. Clearly, the county was a center of clothmaking, and Salem provided a vital link in the Barbados to Essex County cotton trade. In Suffolk County raw cotton appears in fewer probates, even when the distortion of Boston's transient population is removed. However, the need to promptly process fabric for consumption, as evidenced by Wollcott's yarn and cloth credits with Buffum, may well have made keeping large stocks of raw fiber seem wasteful or unproductive.

Another factor that may have influenced the time interval that cotton fiber remained unspun and stored was the relative ease with which it was turned into yarn. Long before the cotton arrived in Massachusetts, the pre-spinning preparation of the fiber began. Picked when the "bolls" began to burst open, the long, silky cotton fibers were extracted from their seed shell and then

21. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

separated from the seeds by slave labor before being transported.²² The separated cotton fibers were then packed into bales that weighed about three hundred pounds each. Consequently, the baled cotton "woole" that arrived in New England was ready to be carded and spun into thread without lengthy preparations.

Cotton was prepped for spinning in much the same way as sheep's wool. Just as vegetable fibers were teased out of the raw wool, stray seeds or seed cases were removed before the clean cotton was carded. Unlike wool, there was no grease or dirt to scour out, so the cleaning and carding process was swift. Cotton cards were similar in design to those used for wool except that the spacing between the "combing" nails or wires was more compact due to the finer cotton strands. The small rolags created with the carded cotton would be put aside until they could be spun.²³

The relatively recent arrival of cotton as a textile fiber in England probably meant that Massachusetts spinners likely used altered flax wheels for their work rather than a specific wheel type. Cotton required a

22. The cotton fibers imported from Barbados and the West Indies was of the Sea Island variety that contained fewer seeds and lacked the sticky film that made mainland cotton so difficult to process before Eli Whitney's cotton gin.

23. Rolags are the long narrow rolls of cotton or wool that were "rolled" off the hand cards. They would keep their shape and could be stacked away until needed. When brought out for spinning, the hand-sized rolls were easily picked up and spun by starting the fibers onto the spindle from one end.

slightly different spinning technique from that of wool, but not necessarily a specialized spinning wheel.²⁴ Lacking the scales found on wool fibers and having a relatively short staple length, cotton thread was not strong enough to be used as warp. Instead, cotton yarn was customarily used as weft on a warp of strong linen threads. This mixed fiber fabric was doubtless the first domestic use of cotton both in England and New England.

The presence and distribution of cotton in 17th-century Massachusetts plainly indicates the tenacity of clothmaking in certain households. However, by its very nature, cotton only supported and extended the use of the mainstays in English textiles: hemp and flax.

Just as probate inventories contained wool, sheep and cotton, they also included flax fibers from the first days of settlement.

Table 10: Frequency of Probate Inventories Reporting Flax.²⁵

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	18 (n=70) 26%	2 (n=71) 3%	2 (n=48) 4%
1650-69	48 (n=336) 14%	37(n=518) 7%	21 (n=175) 12%
1670-89	117 (n=486) 24%	47(n=606) 8%	29 (n=210) 14%

24. Although probate inventories report the existence of "cotton wheeles," it is not clear whether they were originally produced for the purpose of spinning cotton. Given the relatively new introduction of cotton in England as well as New England, it may be that spinners merely altered their wheel ratios, cotton needs to be spun more slowly, by changing the size of the pulleys operating the wheel's spindle.

25. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

As Table 10 indicates, inventories reported to the two counties' probate courts contained frequent references to flax fibers in household inventories over the period. Most, if not all, of reported fiber was probably dressed and ready to be spun. Although the inventory tabulators made no distinctions between dressed or undressed flax, most of the flax they found was stored in garret rooms, unlikely places for undressed sheaves or unbroken retted flax.

Another way to analyze the flax reported in probate inventories was in average volume per household.

Table 11: Average Volume of Flax Fiber Reported in Pounds.²⁶

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	235# (13# av)	2# (1# av)	2# (1# av)
1650-69	624# (13# av)	334# (9# av)	169# (8# av)
1670-89	1404# (12# av)	940# (20# av)	350# (12# av)

For Essex County, a consistent number emerges in Table 11 of approximately twelve pounds for each average household reporting flax. In Suffolk County, the average increases over the period of study to reach, and in the case of Suffolk County combined with Boston figures, exceed Essex County. The presence of dressed flax in Boston indicates that town-dwelling textile producers

26. The flax fibers reported are most likely dressed fibers since flax in the field and unretted flax are usually measured by the sheaf or bundle. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

were likely purchasing dressed flax from merchants with ties to outlying farms. Moreover, they were producing finished yarns and probably fabric in the urban center. There may also have been some use of linen yarn by lace knitters or frame stocking knitters in Boston as well.²⁷

For the average farmstead, however, twelve pounds of dressed flax fibers was a telling figure. Twelve pounds of dressed fiber could be spun into almost the same volume of yarn and yarn could be traded, knitted or woven into a substantial quantity of textile material.

Table 12: Average Frequency of Linen Yarn.²⁸

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	8 (N= 70) 12%	7 (N= 71) 10%	6 (N= 48) 13%
1650-69	16 (N=336) 5%	42 (N=518) 8%	30 (N=175) 17%
1670-89	32 (N=486) 7%	45 (N=606) 7%	28 (N=210) 13%

As Table 12 shows, linen yarn stocks could be found in approximately ten percent of all households, even in the Boston area. This yarn represents a surplus of available product and reflects the general nature of linen yarn production. As already observed, linen yarn

27. Frame knitting was already well-established in England by this period and tradition has it that Ipswich was a center of lace making and then frame knitting in the 17th- and early 18th-century based on the theft of knitting frames by men wanting to import the technology. Ipswich could very well have been following Boston's lead, a place to which many Ipswich people had close ties. Both industries are mentioned in Thomas Franklyn Waters, Ipswich in the Massachusetts Bay Colony, (Ipswich: Ipswich Historical Society, 1905).

28. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

could be woven into a variety of finished goods. If each household's yarn stocks only equaled the average holding of dressed flax, the annual yield based on those figures alone would mean significant additions to textile stores in the colony. For instance, depending on the width of the fabric and the intricacy of the weave, twelve pounds of linen yarn, spun very fine, could produce twelve yards of plain weave linen. Such an amount could be made into a coat and britches for a man or a petticoat, shift and over-skirt for a woman. Twelve yards could also be made into a pair of sheets and pillow covers.²⁹ However, the average volume of yarn stocks reported in the probates reveals that supplies of dressed flax did not necessarily parallel those of linen yarn.

Table 13: Average Volume of Linen Yarn Reported in Pounds.³⁰

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	47#	12#	12#
1650-69	48#	16#	15#
1670-89	36#	34#	36#

Table 13 clearly shows that the average store of linen yarn reported to the courts was actually much

29. The average linen sheet was made from approximately six yards of linen. The fabric was cut into two two-and-a-half-yard lengths and the two pieces were then sewn lengthwise together into a double width.

30. Yarn was not consistently reported in pounds, but for this study I converted yarns reported in other ways such as by the "knott" by using their probate value as an indicator. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

higher than that of unspun fibers. In Essex County, impressive amounts of surplus yarn remained a constant and indicate that linen textiles were an important priority for many households. Surplus linen could have been a source of outside income as well as a reserve source of family wealth. For Suffolk County, the supply increased markedly towards the end of the period. Perhaps this increase indicates a greater willingness to engage in textile production because of the valuable nature of cloth or was a response to the scarcity or expense of imported fabric.

Since woven fabric was the preeminent use for linen yarn, most was generally passed quickly on to the local weaver to fashion into "coarse" cloth. Again, we return to the probates for a rough estimate of domestic linen production.

Table 14: Average Frequency of Linen Cloth.³¹

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	6 (N= 70) 9%	10 (N= 71) 14%	6 (N= 48) 13%
1650-69	36 (N=336) 11%	68 (N=518) 13%	29 (N=175) 17%
1670-89	45 (N=486) 9%	52 (N=606) 9%	22 (N=210) 11%

Surprisingly, the preponderance of surplus linen yarns in Essex County did not translate into a larger number of households with linen cloth when compared to Suffolk County. Rather, a slightly larger number of

31. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

Suffolk County families seem to have consistently held supplies of domestic linen cloth in store. Whether Essex County transformed its cloth into clothing and household goods at a greater rate or sold its surplus to Suffolk County and beyond is not clear. These discrepancies extended to "new" cloth held by families in reserve.

Table 15: Average Volume of Linen Reported in Yards.³²

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	15 yds	8 yds	8 yds
1650-69	12 yds	13 yds	10 yds
1670-89	13 yds	28 yds	26 yds

Whether or not the respective counties kept the domestic cloth they produced or circulated it to other areas, the production of that cloth became an important segment of the domestic economy. Beyond the simple tabulation of pounds of fiber and yarn or yards of cloth, the significance of flaxen and hempen linen to the English colonial household can be measured in the effort devoted to its production. Just as in the production of wool, all the members of the household participated. Likewise, the shared burden was not always "promiscuous." Some chores were seen as female, while others remained

32. I counted linen cloth designated as "coarse, rough, or hand-loomed" as domestic in origin and also used probate valuations to pinpoint domestic cloth. Imported cloth was, not surprisingly, consistently more expensive than domestically produced over the period. ECPR, Vol. I, II, & III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

mainly a male purview. As a sixteenth-century farm manual indicated, customary practice dominated even the planting of the crop:

Good flax and good hemp, to have of her own,

in May a good housewife will see it be sown;

And afterwards trim it to serve at a need,
the fimble to spin, and the carl for her seed.³³

Hemp and flax were traditionally sown and harvested by women in England and Thomas Tusser's verse clarifies the duty of the "good housewife." In his world, men's labor broke the soil and prepared the field for planting, but women sowed and tended the hemp and flax crops. In early April after the men plowed and harrowed and while the soil was still moist, housewives and daughters broadcasted last year's seed harvest by hand. The time-honored method of planting was to sow the seeds "thicke upon the ground." This seeding technique enabled the women to force a tall and thin plant profile by creating a crowded growth environment. Tall and thin flax plants meant that once the fibers were extracted, they would also be long and delicate, the basis for smoothly spun thread and fine quality linen. When English women began

33. Thomas Tusser, Five Hundred Points of Good Husbandry, 1580 edition with notes by William Mavor, (London: Lackington, Allen & Co, 1812), pg 172.

to raise flax and hemp in New England, they continued to practice the same tried and true methods.

A persistence of English customs is evident in a number of wills that provided family members with precise instructions concerning flax and hemp production. One such will, that of John Dresser the elder, provides us with a blueprint of how the Dresser family organized and rewarded its laborers.

In March of 1671 at the age of seventy, John Dresser felt compelled to make his will. Dividing his property between his wife, two surviving sons and one daughter, Dresser carefully outlined each legacy. To his eldest son, John, he added only a small legacy to the "considerable estat" previously bestowed him on the advent of his marriage. A younger son, Samuel, was to receive half of all of the land not already in John's possession, making his share about half of the value of his elder brother's. To Elizabeth, an unmarried daughter, Dresser gave 120L, about one-fifth of his estate, to be paid over two years out of the farm's produce, especially its linen goods.

Mary Dresser, the children's mother, received the customary recognition of a good wife: one-third of the produce of the home farm and the right to occupy a portion of the house now belonging to her son Samuel. In addition, she received the "moveables" of the household, including a large portion of the household linens and the

textile tools. Lastly, to ensure that his widow would be able to continue comfortably "dureing hir natturall Life", Dresser instructed John and Samuel to provide their mother with all the essentials such as sufficient firewood, fruit from the orchard, leather "to call for as she seeth neede," ample Indian and English corn and enough prepared land to "sowe halfe a peck of flax seed yearly."³⁴ Mary could continue to produce household linens with the help of her daughter while Elizabeth remained unmarried. Elizabeth would help to produce the linens that would provide a portion of her own inheritance. Samuel would benefit from the portion of linens left after his mother's third and sister's legacy. The sons' obligation to mother and sister included providing the prepared ground where their textile work began. Clearly, John Dresser governed a household where men supported as well as benefitted from the labor of their women.

Other wills are not so specific as Dresser's, but certainly evoke the same arrangement. John Balch, for instance, reserved the use of two out of his four improved acres for his widow's use along with the house, houselot and outbuildings. Her tenure was protected as long as she did not remarry, and although Balch did not make the terms as explicit as John Dresser did, it seems

34. Will of John Dresser, Sr., ECPR, Vol II, (Salem: The Essex Institute, 1917), pg 262-265.

clear that Annis Balch's three sons were bound to make the prepared ground available to her as she desired.³⁵ In most wills, land was simply made available to widows provided they did not remarry; how they used the land was up to their own discretion. However, the existence of flax seed in many inventories indicates that more than a few acres were devoted to the growing of flax and hemp.

Whether husbands, sons or hired labor broke the ground for planting, putting the seeds in the ground was merely the beginning of the cycle. In the first weeks after the seedlings sprouted, women and children carefully weeded around the young plants to prevent weeds from displacing the cultivated plants or impeding their growth. Weeding was accomplished by hand rather than with tools such as hoes or shallow plows to minimize disturbance of the dense growth pattern and reduce damage to the tender seedlings. By tradition, the tedious hand-work of weeding fell to the women and children. In the words of one contemporary report, "here then is no need...to establish the Methods for the good Wife's weeding her flax-garden." She already knew how.³⁶

35. Will of John Balch, ECPR, Vol I, (Salem: The Essex Institute, 1917), pg 96-97.

36. Quote from "Linnen and Woolen Manufactury discoursed, with the Nature of Companies and Trade in General," reprinted in Alice Clark, Working Life of Women in the Seventeenth Century, (London: George Routledge and Sons, 1919), pg. 128.

As the flax and hemp crops matured in the field, the "good wife" planned the harvest and brought in her crop.

Again, Tusser's comment,

Wife, pluck fro thy seed hemp, the fimble
hemp clean,
This looketh more yellow, the other more
green.
Use t'one for thy spinning, leave Michel
the t'other,
For shoe thread and halter, for rope and
such other.
Now pluck up thy flax, for maidens to
spin,
First see it dried and timely got in.³⁷

Proper harvesting was crucial. Each year a part of both hemp and flax crops was harvested green while the rest allowed to go to seed. The flax harvested while still in bloom yielded the best and finest of linen fibers while green hemp yielded soft, if not superfine, fibers as well. The portion of flax and hemp crop allowed to go to seed would yield tougher plant fibers after processing. This would provide "coarse" rendered fibers for the household, but also the valuable seeds for next year's crops.³⁸

Just as men and women filled different work roles in the process, male and female hemp had different uses. The male or "carl" hemp which produced the seed was utilized for "male" products and, after harvest, was generally

37. Thomas Tusser, Five Hundred Points of Good Husbandry, 1580 edition with notes by William Mavor, (London: Lackington, Allen & Co, 1812), pg 172.

38. Anonymous, Gleanings from the Most Celebrated Books on Husbandry, Gardening and Rural Affairs. (Philadelphia: James Humphreys, 1803), pg 124.

processed by men. The Dresser men and their male neighbors probably manufactured cordage of all sizes and uses, horse and oxen halters, netting, shoestrings and other rugged string needs. These were fashioned from twisting the coarse fibers of the carl hemp in a crude version of their wives' spinning. Female or "fimble" hemp, a less bulky fiber, was spun, usually by children in the first stages of learning how, for use in making fish netting, straining cloths, candlewicks, rough toweling and other coarse cloth for household use.

Flax produced an even more delicate and pliable fiber than hemp. As we have seen, flax could be woven alone or mixed with cotton, resulting in a fabric that could be as light and soft as cambric or as dense and durable as sail canvas. In addition, the plant produced an oleaginous seed that could be milled to extract "linseed" oil used in a wide range of products from a preservative paint to a sovereign remedy for digestive disorders.

Like their English contemporaries, New England women harvested flax by "pulling" or uprooting the plants. It was pulled rather than cut to prevent mold or bacteria from staining or damaging the fiber inside the plant casing.³⁹ At harvest time, usually a dry part of the

39. The customary technique of harvesting flax by pulling was clearly a woman's task since use of the sythe, especially the larger cradle scythe was definitely a "male" task. For discussion of male and female tool use on farms in the mid-Atlantic states see Joan Jenson,

season before autumn rains, the plants were uprooted in clumps and tied into loose bunches called "stooks" or "baits." These would be stacked upright in small groups across the field to dry in the August sunshine. After several days in the sun, the dried sheaves would be gathered by the women and brought to the farm yard where they were "bolled" for their seeds. This could be done in several ways: some women pulled the sheaf heads through a stationary rippling comb and drew off the seeds into a container positioned under the workbench. Others, who lacked the luxury of rippling combs, beat the sheaves against a board or door jamb or threshed the plants like wheat. The precious seeds were caught, in a pail or winnowing sheet or swept up from a clay surface. The extracted seeds were stored in tightly woven baskets until crushed for their oil or planted the next year. Seedless, the "bolled" sheaves were transferred to a barn or dry loft for storage until the next stage of processing commenced. For flax this meant retting.

In late autumn, when heavy dews fell in the morning and evening, many families doubtless took advantage of the weather and spread their sheaves out onto meadow grass for retting. This portion of the process rotted the outer plant casing and made it easier to extract the inner fibers. Each day, the flax had to be turned so that

the entire plant was exposed to moisture equally. Another method was to submerge the flax in a shallow pool of water or a slow-moving stream. Stakes would be driven into the streambed and the "baits" stacked in alternating layers and weighted to keep them from floating away. The immersion retting process could take from four to five days and this technique shortened the retting time, but plants standing in water could sometimes rot too fast, endangering the whole batch. Moreover, immersion retting tended also to emit a strong smell of decay, more offensive than that associated with dew rotting, and sometimes poisoned the fish living in the stream.

Retting, whatever the method, was a painstaking task that required patience and care. As one farm manual remarked,

The watering or rotting [of] Flax is looked upon to be the most mysterious and difficult part of the Manufacture [of linen].⁴⁰

Once properly retted, the sheaves were again carefully dried and stored against the time when the final steps of fiber extraction would commence.

The refinement of flax and hemp plants into a spinnable fiber required a combination of skill and patience, none of which were specific to men or women. With a dearth of documentation, understanding how men and women divided or shared specific tasks becomes a matter

40. John Wily, A Treatise on the Propagation of Sheep, the Manufacture of Wool, and the Cultivation and Manufacture of Flax, (Williamsburg, Va.: 1765), pg. 35.

of speculation based on small clues rather than concrete evidence. What seems likely, however, is that tradition played an important part in medial work roles, as much as in the initial planting and harvesting phases.

In England, braking, scutching and hackling were shared chores, very often staged as "promiscuous" social events akin to corn huskings. In the American mid-Atlantic region, this tradition seems to have continued.⁴¹ For New England, only fragmentary references point to a similar persistence of English custom.

Official records routinely lack the details of labor arrangements between men and women and tend to overlook female work altogether. As early as 1639, a Plymouth Colony order read,

[E]very household within the Government shall sowe one rodd of ground square at least with hemp or flax yearly, and some one in every Towne to be appoynted to see the same donn.⁴²

No specific language indicated who the Plymouth officials expected to do this work even though tradition dictated it was a "housewive's" duty. A year later, Massachusetts Bay General Court sent a similar order to its towns. The Court requested a colony-wide survey of all flax and hemp seed varieties, equipment and skills

41. Joan Jensen, Loosening the Bonds: Mid-Atlantic Farm Women, 1750-1850, (New Haven: Yale University Press).

42. Plymouth Colony Laws reprinted in Edmund Whitman, Flax Culture: An Outline of the History and Present Condition of the Flax Industry in the United States, (Boston: Rand Avery Company, 1888), pg 79.

available. One major difference was that the Bay Colony authorities wanted detailed information gathered on the pool of "men and women which are skillfull in the braking, spinning and weaving [of linen]." Men answered the call for textile production, but the court recognized female participation in textile manufacturing, if only as supplementary to men's. Unfortunately, though, when households reported textile production, it was as an accomplished fact with no details and all credit going to the head of the family.⁴³

Even at the local level, official records remained silent on the particulars of flax-processing tasks. The town of Ipswich anticipated the Massachusetts Bay government's 1640 proclamation by several months and appointed a "committee for the furthering of trade." Committed to encouraging the production of hemp and flax, among other things, the all-male committee reported on household production, but still reported the householder's achievement rather than details of the corporate effort.⁴⁴

Personal accounts tend to give only a slightly more particularized description. Account books record the activity of male employees or casual helpers to whom the

43. See William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, Volume I, 1639-1810, (Boston: W.B. Clarke, 1893), pg 4.

44. Entry February 10, 1640, Ipswich Town Records, 1634-1662, Manuscript #21, Peabody Essex Museum, Salem, Massachusetts.

bulk of interim processing chores seem to fall. In western Massachusetts, John Pynchon, a substantial farmer who employed many farm laborers on his extensive holdings, hired out his flax processing. According to his account books, Pynchon engaged three men, Benjamin Knowlton, R. Waite and M. Morgan, to break, swingie and dress a total of four hundred and fifteen pounds of flax grown on his Springfield plantation.⁴⁵

In Ipswich farmers who wished to process their retted flax or hemp quickly could go the local "hemp mill." A water-powered hemp break was built on the upper dam in 1657 by Richard Shatswell and, presumably, the process was faster and more efficient than the hand labor provided by Pynchon's men.⁴⁶

The difference in the process between the Ipswich mill and hand work would not have been great. Pynchon's men would have worked on a wooden bench with a guillotine-like blade attached to the top of the table and the three men may have taken turns at the break. The operator placed a sheaf of dried, retted flax under the blade and drew the blade down onto the flax to crush the stems against the bench top. The sheaf was progressively pushed forward a few inches at a time while the blunted blade worked like a lever-arm, systematically crushing

45. Judd Manuscript, Massachusetts, Miscellaneous, Vol. 17, pg 35, Forbes Library, Northampton, Massachusetts.

46. Entry for February 1657, Ipswich Town Records, Volume I, 1634- 1674, Ipswich Town Clerk, Ipswich, Massachusetts.

the plant stems against the surface of the bench to break open the rotted outer stem and free the pliable inner fibers. Very often the flax needed to be put through the break twice before the outer casings were sufficiently crushed to effectively remove the inner fibers.

At the Ipswich mill, the bench would probably been much longer. The wooden blade would have been powered by a system of pulleys that transferred the power of a water wheel to the crushing lever. Most likely it operated in a fixed position with the lever moving up and down at the edge of the bench. The flax and hemp bundles would have been fed to the bench by hand and then pulled away from the bench when sufficiently crushed. Careful manipulation of the flax bundles would have been necessary due to the relentless action of the water-driven crusher.

An alternative to braking was beetling, or beating the flax on a table with wooden mallets. Less effective than a brake and certainly slower than the mill, beetling lengthened the time needed to loosen the fibers. However, the more evenly distributed energy transmitted by the hand strokes reduced potential damage to longer, finer plant filaments. In some cases, producers would sort out the best sheaves to be beetled rather than broken to preserve the finest of fibers and, in turn, produce a fine linen thread.

The process of swingling or scutching, beating the chaff out of the flax fibers, followed braking. With the

flax sheaf or "strike" draped over a board, a scutching knife was scraped across the flax, removing the plant casings and shaking loose the woody inner core or "bun." Sometimes the sheaves would be beaten against a doorframe or board to free undesirable plant fragments. The bark, core, and rough fibers fell to the floor discarded while the exposed inner fibers were sorted and retied into bundles. This, too, would have been a chore for a young laborer, perhaps even a hired one.

In Topsfield, John Gould, hired out his swingling to a neighbor and relative, "coson Dorman." A weaver and sheep owner, Gould also grew flax, perhaps to provide himself with a ready supply of warp thread for his looms. Among the notations of sheep, yard goods and other activities recounted in his "owne book," Gould recorded payments to his "coson" Dorman for swingling thirty-four pounds of flax. Apparently, Dorman's labor worked off a debt owed to Gould for weaving 28 yards of linen and 14 yards of wool cloth.⁴⁷

In seventeenth-century Massachusetts, the accepted standard for medial flax processing anticipated that one individual could break, single and dress two to three pounds in a single ten-hour day. Using this measure, Gould's "coson Dorman" acquired a little under a week's wages, exchanged in kind, for his effort. Pynchon's men,

47. Entry for November 1702, Account Book, John Gould of Topsfield (1662-1724), MSS 223, Essex Peabody Museum Library, Salem, Massachusetts.

on the other hand, would have needed to work steadily six days a week for ten weeks to dress his flax. Being farm labor, they would not have had the luxury of working steadily on the flax until they finished it. Even in winter the stock needed to be fed and watered. In addition, sundry repairs or improvements to farm equipment and buildings would have been part of their work round as well. An alternative was that they had their whole families, wives and daughters included, engaged in the work.

Although most references name men as the wage earners for this kind of work, women can not be excluded from it on that basis only. On the whole, none of the medial tasks called for extraordinary strength or specialized skill characteristic of the kind of labor left to women in English society. In fact, breaking or swingling chores could be done intermittently as time allowed. This work pattern fits the kind of casual labor that women and unmarried adolescents routinely did in their daily rounds of work. Since men were customarily assigned the account book credit, it is difficult to separate male-female or parent-child labor in these kinds of transactions. Sometimes, however, the discrepancy between who did the work and who was paid for it is easier to spot. For instance, in the same ledger that recorded Dorman's swingling, Gould recorded payment for spun flax and wool to his "Uncle Andrew." Since men were

never spinners, Uncle Andrew's wife or daughters probably did the work even if he was given the credit.

Another account book from an 18th-century frontier Maine household yields still another variation on how interim flax chores were shared. In this household, Martha Ballard noted that the Ballard men "sowed, turned and broke flax" while she and her daughters "weeded, pulled and combed" it. In her more detailed entries, Ballard revealed that for her family flax processing combined tasks that were shared by men and women. Goodman Ballard and his sons saw to the planting, retting and braking segments of the process while Martha and her daughters cultivated, harvested, combed, sorted and spun the fibers.

Some of these choices may reflect the personal preferences for tasks among the individuals of the Ballard household. Martha may not have cared for the "turning" of a smelly wet mass of rotting plants while the Ballard men may well have counted themselves lucky to avoid the dusty, repetitive work of combing the flax fibers. Moreover, the Ballard men planted flax, something that Mary Dresser chose to do herself and that English tradition labeled as women's work. In addition, Ballard's diary does not indicate who "bolled" the flax for seed or saw to its milling, but again these chores could have been shared out as time, preference and inclination

dictated.⁴⁸ What seems clear when the Ballard, Pynchon and Gould references are compared is that men and women shared these tasks less according to gendered labor roles and more according to the imperatives of the cycle and rhythms of their daily work routines.

The final stage before spinning was hackling, or drawing the flax through combs. As we have observed in the Ballard household, it was Martha and her daughters who combed the flax. Perhaps the Dresser women did as well. Hackling removed any of the outer casing or inner core pieces remaining and separated the fine fibers from the coarser tow. By utilizing sequentially finer combs, usually a coarse to medium to fine and then superfine tooth configuration, Martha and her daughters would have sorted the flax fibers from finest linen to coarse tow. The coarsest fibers, those that passed with difficulty through the largest of the tow combs, would be set aside for candlewicks, twine or oakum. The finer fibers would be set aside for more delicate, intricate and valuable fabrics. Retied into bunches, these fiber bundles would be set aside, much like the baskets of carded rolags for spinning. The results of flax processing was, like wool, a spinable fiber that could be knitted or woven into much-needed fabric.

48. Entries from Martha Ballard's Diary reproduced in Laurel Thatcher Ulrich, "Martha Ballard and her Girls," in Work and Labor in Early America, Stephen Innes, Ed., (Chapel Hill: University of North Carolina Press, 1988):70-105.

Like cotton, flax lacked surface scales, but spinning a strong fiber was fairly easy because dressed flax tended to have a length of between three to four feet allowing a strong twist between fiber breaks. Tying a hank of dressed flax to a distaff, the spinner would draw out the fibers and spin them to the desired thickness depending on how the linen would be used. Linen fibers spun better damp, so spinners would frequently moisten their fingers as they guided the strands into the twisted thread. When the spindle filled with spun thread, the spinner would wind the finished thread off onto reels that allowed a housewife to measure approximately eighty-yard skeins. Twenty of these skeins were known as a "knott." This was usually the basis by which linen was valued in merchants' ledgers. Sometimes the spun threads would be further processed with dye or be put through the complex process of whitening.

The bleaching process altered both the color and "hand" of linen thread to produce the whitest and softest of fabrics. Although Sarah Short left no direct record of her labors, the tools listed in her husband's inventory demonstrate that she well knew the process of bleaching "knotts" of brown linen thread into more desirable white linen. Imagine Sarah's careful preparations. The process began with soaking the tied off layers of thread in her two washtubs filled with warm water. Sarah or her daughters would have added or changed the water as they

moved the skeins between the tubs in the washhouse until the thread no longer clouded the water with oil or dirt. The next step called for another of Sarah's own products, her clean wood ashes, to be sandwiched between layers of the washed linen yarn in what was called the "bucking" tub. When the tub was filled with the alternating ash and yarns, Sarah poured water over the entire concoction and left it to sit for a day or more. The final stages came when the entire tub of yarn and lye was heated and kept as hot as possible while the yarn was continuously stirred and beaten by wooden paddles while soaking in the hot lye. The end of the day would have found Sarah and her daughters rinsing the bleached yarn in her wash tubs until all the lye rinsed away. At last the skeins would be hung on ropes in the washhouse to dry and then, when thoroughly dried, set aside to go to the weaver's loom. In the end the reward for all of this intensive care would have been "fine" white linen items such as Henry Short's shirts, Sarah's "wearing linging," the napkins and table linen of her kitchen or the thirteen pairs of sheets to be found in Short's estate inventory.

Henry Short knew well the value his wife and daughter's efforts brought to his personal wealth. In his will, Short stipulated that Sarah, his wife, should enjoy the use of the "new parlor" exclusively with all its appointments, including the bed and bedding valued at more than fifteen pounds. In addition, she was given a

generous annuity, one-third of all his moveable goods and rights to use the land and gardens as long as she lived. To his daughter, also named Sarah, Short gave a generous settlement of livestock and cash as well as one third of all the moveables in the household, including the textiles she helped to produce. Altogether, the textiles available to the household amounted to nearly one-third of the moveable goods in Short's estate.⁴⁹ Clearly, the joint labor of the household produced an impressive array of cloth goods that added much to the family's collective wealth.

The same enthusiasm that spurred New Englanders to develop their sheep flocks and create adequate supplies of home-spun woolens led New England households to utilize their linen-making skills. Although historians have overlooked the day-to-day productive capabilities of colonial households, the tiny measure of competence wrought by every yard of linen produced had a cumulative effect. In countless probate inventories, fabric, clothing and cloth goods made up sizable portions of corporate family wealth as well as insured each generation's comfort and well-being. To do so, New England households drew on English traditions of household cloth production, but re-shaped them in significant ways. These new patterns allowed New

49. Estate of Henry Short, ECPR, Vol. II, (Salem: The Essex Institute, 1917), pp. 345-9.

Englanders to effectively utilize their relatively limited labor pool and successfully make their way in the new colony.

PART TWO: RELATIONS OF PRODUCTION

"All hands are enjoyned to spin"

-Massachusetts General Court, 1656¹

1. Order of May 30, 1656, Records of the Governor and Company of the Massachusetts Bay in New England, Nathaniel Shurtleff, ed., (Boston: 1853), Volume I, p. 303.

CHAPTER III

SKILL DISTRIBUTION AND TRANSMISSION

"...fill my hands with such convenient skill as may conduce to vertue void of shame..."

-worked into Loara Standish's sampler, c. 1640-50²

All of the effort to produce wool, flax and hemp fibers as well as to procure raw cotton would have been meaningless if flax dressers, spinners, weavers and fullers had not been present in New England to practice their craft. However, cloth workers did emigrate to 17th-century New England and in significant numbers. Indeed, as one historian observed, a quarter of all adult males who came to New England in this period possessed specific cloth-making skills.³ Moreover, and this seems to have eluded some historians altogether, every 17th-century Englishwoman's domestic repertoire, including those who sailed for New England, included some textile expertise, especially spinning. Consequently, a notable proportion of Great Migration emigrants came with the essential skills needed to develop a domestic cloth industry.⁴

2. Sampler, worked by Loara Standish, circa 1640-50, Plymouth Hall Museum, Plymouth, Massachusetts.

3. Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 134. See also Roger Thompson, Mobility and Migration: East Anglian Founders of New England, 1629-1640, (Amherst: University of Massachusetts Press, 1994).

4. For English women and textile skills, see Alice Clark, Working Life of Women in the Seventeenth Century, (London: George Routledge and Sons, Ltd, 1919).

Nevertheless, conventional wisdom holds that the development of a domestic cloth industry in New England "never proved to be more than a disappointment to its promoters."⁵ Daunted by a short supply of labor, most colonists left the looms and wheels they paid to transport idle and shifted their efforts to marketable farm products in hopes they could afford imported English fabrics. In this interpretation, English imports remained the chief source of fabric. First-generation cloth workers who clung to their art became anachronistic. Logically, given this economic climate, few second-generation colonists acquired the skills their parents rejected as irrelevant to their lives in the Bay Colony.

Yet, prevailing arguments to the contrary, evidence from the period demonstrates that colonists continued to require young girls to learn to spin, taught harvesting and processing chores to children and apprenticed their young boys as weavers. Edward Johnson observed in 1654 that the inhabitants of Rowley "caused their little ones to be diligent" in the acquisition of skills from their parents for the betterment of the community.⁶ Rather than being irrelevant, textile skills served to augment the

5. Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 136-137.

6. Edward Johnson, Wonder-working Providence of Sions Savior in New England, (London, 1654), p. 130; reproduced in the Library of American Civilizations, microfiche # LAC15925.

prosperity of the next generation. Furthermore, the instruction of new textile workers welded household members together, ensured proper order within the household and transferred the key elements of collective and cooperative family labor to the next generation.

The devolution of cloth-making skills began with the ritualistic yet informal training of children. As toddlers, colonial children learned first by observation. Then, as their knowledge, dexterity and strength increased, they were given increasingly complex chores. As a Plymouth Colony historian wrote:

The family was a "vocational institute."...[the active transmission of skills] clearly served to prepare its young for effective, independent performance in the larger economic system. For the majority of persons...the process was instinctive and almost unconscious.⁷

The "instinctive" and "almost unconscious" nature of children's training has left little in the way of extant documentation. Rather, parental education of children can only be inferred from a scanty selection of sources. In his study of male farm labor in 17th-century Essex County, Daniel Vickers found that although young boys routinely worked alongside their fathers and grandfathers on the land, their presence was mainly implied rather than clearly described. Thus, indirect references locate young boys in the "misty backdrop" of rural farm scenes,

7. John Demos, A Little Commonwealth: Family Life in Plymouth Colony, (Oxford: Oxford University Press, 1970), p. 185.

but details of their training remain obscure.⁸ When historians study the training of girls, evidence is similarly sparse.

One kind of document that specifically provides an insight into children's "vocational" training is guardianship petitions. Generated when the "natural" cycle of parental training was disrupted by death or remarriage, guardianship petitions were filed in probate court as legally binding contracts meant to protect the property of the children involved, but also to spell out guardians' responsibilities. In the process, the documents described the duties of parents towards their children indirectly by laying out the colony's expectations of guardians and foster parents. To be sure, the petitions tended to follow a formalistic pattern, but contained within the legalistic phrases was a clear message: children needed to be trained to take up the roles they were expected to play as adults. For girls, this meant sound instruction in domestic arts, with an emphasis on female textile skills. Such was the case concerning the Sharpe children.

In 1656, Peter Aspinwall became the court-appointed guardian of Mary and Abigail, orphaned children of Robert Sharpe. Remarried and worried that her new husband would

8. Daniel Vickers, Farmers and Fishermen: Two Centuries of Work in Essex County, Massachusetts, 1630-1850, (Chapel Hill: University of North Carolina Press, 1994), p. 64.

dissipate her children's property, Abigail Sharpe Clapp requested that Aspinwall, a relative by marriage, take over administration of their affairs. Adopting a "needful and speedy course" to protect the children's welfare, Aspinwall assumed custody of the two girls. In exchange for his efforts and expenditure, Aspinwall requested the court allow him to lease out the house, land and livestock left to the children by their father. He further agreed to use the profits garnered from the farm to support the children while preserving their future security in the form of land and goods. Protection of their property was not the only obligation he assumed towards the children, however. In the official petition, Aspinwall guaranteed he would "learn" the girls to "read, to knit, to spin and such housewifery, and keep them, either to the day of their marriage or until age eighteen."⁹

The court agreed readily to the particulars and the spirit of the petition. First, the two children would be provided suitable care in a reputable home at the expense of their father's estate and would not become a drain on the town's resources. Since Robert was deceased and Abigail incapable of providing for the children, this was the next best solution. Second, Aspinwall's "better" socio-economic position and unimpeachable reputation as a church member and town worthy ensured that the Sharpe

9. SCPR, unpublished microfilm, Volume III, p. 106-8.

children would live in a scrupulously "ordered" household. Finally, Aspinwall guaranteed that the Sharpe children would be properly trained and educated to take their place in the community as responsible and productive adults.¹⁰

As indicated, Aspinwall's commitment carried complex obligations that went far beyond simple nurture and discipline. However, the shifting of responsibility from Sharpe to Aspinwall did not fundamentally change the contours of parental obligation, it merely transferred them. As the petition made clear, textile production figured prominently as skills too important to be lumped in with other "such housewifery." Aspinwall's agreement explicitly outlined duties that most families implicitly accepted as well as reflected the expectations of the colony towards their children's training. Sometimes this pattern can be traced in specific families.

As an adult, Mary Sharpe found herself repeating her mother's story when she became widowed in 1689. When her husband, Nathaniel Tilden, died, he left her with a partially grown family consisting of several adult children and two still at home. In his will, Tilden left instructions for their eldest son to take responsibility for the children's material welfare, but left Mary Sharpe

10. For a good discussion on parental obligations, see John Demos, A Little Commonwealth: Family Life in Plymouth Colony, (Oxford: Oxford University Press, 1970), p. 104-105.

Tilden to oversee the "education and Disposeing of them." Perhaps because she did not remarry right away, Mary did not choose to relinquish the care and education of her children. Unlike her mother, Mary had the opportunity to pass her skills on directly.¹¹

Another source documenting textile skill transmission is the indenture contract, especially those made for indigent female children. Mary Killam, a child "set out" to the Parsons family by the Hampshire County Court, is a case in point. Although the wording of the document deciding her fate corresponded closely to the guardianship papers of Mary and Abigail Sharpe, the Killam indenture agreement bound Mary to the service of Samuel Parsons until she was eighteen. As an unpaid servant, Mary Killam was expected to work very hard at whatever Parsons or his wife directed and to expect just punishment if she did not comply. In exchange, Parsons agreed to teach Mary "to read English, sewing, spinning, and knitting."

What is striking about this indenture is the correspondence of domestic skills expected of Mary Killam compared to the Sharpe sisters. Taken from a family where frequent removals implied an unstable and impoverished life, Mary Killam still needed this expertise whether she married or spent her life as a waged servant. Moreover,

11. Recounted in John Demos, A Little Commonwealth: Family Life in Plymouth Colony, (Oxford: Oxford University Press, 1970), p. 120-121.

female textile skills figured prominently in the agreement, underscoring their importance to the Bay Colony yet again.¹²

Girls' domestic textile instruction occurred in a variety of settings. Most started training under their mother's supervision, but then may have perfected their skills in the company of other women such as the young women who "helped out" in Martha Ballard's Maine home or were employed to spin wool at Reverend Barnard's Andover farm. In the case of Betsey and Abigail Sharpe, their mother probably began the process since they were between five and seven when they moved to the Aspinwall household, but undoubtedly the girls underwent expanded instruction with their foster mother.

As was the case for all crafts, skills necessary to cloth manufacture accumulated gradually. As a child progressed in age, so would the difficulty of her activity. The simplest tasks generally were associated with the medial processing of wool, flax and cotton fibers after harvest, but before spinning and weaving. The picking and carding of wool, for instance, required only a limited degree of manual dexterity, no skill and only minimal supervision. A busy housewife with young daughters like Betsey and Mary could set them to the task

12. The only record of Mary Killam is her "putting out." I have not been able to find her again in any other context. Judd Manuscript, Massachusetts Miscellaneous Collection, Vol. 14, p. 233, Forbes Library Special Collections, Northampton, Massachusetts.

of carding the family's wool and then turn to younger infants, dairy chores or sundry other household work with only cursory attention to the girls' carding. The same was true for the carding of raw cotton.

Hackling broken flax, another intermediate chore, required more expertise and concentration. The hackler was faced with the exacting chore of sorting fibers as the combing process progressed since the differentiated fibers served various uses. Here, more careful and persistent supervision was required. An unskilled child put to the task of hackling her mother's or mistress' flax crop could seriously damage the plant fibers.

Eventually, young women took up spinning and learned to produce yarn. A universal female skill, spinning benefitted households of every economic level and at every stage of life. Young housewives with infant children were especially likely to grasp the efficacy of spinning as a sidebar handicraft in a youthful household. As one historian noted:

The Graftons [a couple who lived in Salem in the last half of the 17th century] had neither [sheep nor a loom in the shed]. Children -not sheep- put wheels in Hannah [Grafton]'s house. The mechanical nature of spinning made it a perfect occupation for women whose attention was engrossed by young children.¹³

13. Laurel Thatcher Ulrich, Good Wives: Image and Reality in the Lives of Women in Northern New England, 1650-1750, (New York: Alfred a. Knopf, 1982), p. 29.

For mothers whose daughters were old enough to begin spinning, instruction provided an opportunity to teach the female virtues of perseverance, patience and humility as well as an important skill. Part of the constellation of a good housewife's domestic arts, spinning could also serve to extend a young woman's bride wealth by allowing her to earn money or accumulate textile items of her own. Recall, for instance, Reverend Barnard of Andover and his hired girls.

The young women Barnard hired came to his home to spin and knit. In just one month, November of 1693, he paid wages to eight different women for their part in producing approximately twenty pounds of finished yarn.¹⁴ Coming to work on the four spinning wheels found in his home, these young women probably viewed their opportunity to "help" at the Barnard home as a respectable option open to unmarried females.

The yarn produced by Barnard's hired girls was worsted wool harvested from the leased Bradstreet flock. Remember that Barnard's final "reckoning" occurred in the fall of 1692, so the wool harvested the next spring was his entirely. The spinners worked on the washed, picked

14. Spinning wages in this period were approximately 2 shillings per pound for worsted or linen yarn and half a crown per pair of stockings. See J. Leander Bishop, A History of American Manufactures, (Philadelphia: E. Young and Son, 1868), Vol. I, p. 317-319. For Barnard material see Barnard Family Papers, Reverend Thomas Barnard, 1688-1707, MSS FMS B2598, entry dated November 1693, Peabody Essex Museum Library, Salem, Massachusetts.

and carded wool that probably amounted to his entire wool clip, about 35 to 40 pounds of raw wool. At two shillings per pound, Barnard offered the standard wage for the period, although his account book only recorded the wage values, not whether the girls were paid in coin or kind. However Barnard compensated the young women, his use of the neighborhood skills to turn his raw wool into finished yarn was part of a cycle of related activities that drove the engine of the local economy. Without the transmission of textile skills from one generation to the next, Barnard, a second-generation planter, could not have benefitted from a neighborhood network of laboring girls.

Barnard was by no means an exception. Patriarchs regularly profited from the textile labors of their wives and daughters. Such was the case of Renold Foster, a respected freeman of Ipswich Town. The owner of a higher-than-average estate valued at over seven hundred pounds, Foster died in June, 1681. Rich in textiles of all types and usages, Foster's estate included at least four complete sets of bedding with linen sheets, embroidered coverlets, bed curtains and wool blankets. In addition, there were linen tablecloths ("boardcloths"), towels and napkins and new linen yardage. Fully thirty percent of

the value of Foster's "movable" estate was in textiles. While undoubtedly some of these were imported, it is also clear that domestic cloth contributed in important ways to the value of Foster's estate.

Quite likely, Sarah and Mary Foster spent many hours under their mother's eye as they processed wool harvested from their father's thirteen sheep into yarn that later became clothing or blankets. Although the inventory does not specifically include spinning wheels, the presence of over ten pounds of wool yarn and sixteen pounds of raw wool indicates access to equipment, perhaps at a neighbor's home.

A portion of the linens were also produced locally, employing at least some of the household's female labor. Again, the absence of equipment would seem to make linen production less likely; yet Foster specifically pointed out his wife and daughters' involvement. In his will, he gave all the "linnen and woollen yarne, that she hath made [my emphasis]" to his wife.

In more than one instance, Foster conceded that his textile wealth had mainly been "provided into the house" by his wife and daughters. To acknowledge each of his daughters' labors, Foster divided a substantial portion of the sheets, blankets and table linen between them as part of their share of his estate. Valuable in themselves, the linens accounted for 10L of each daughter's inheritance.

To his wife, Foster left a variety of linens and bed clothes that allowed her a comfortable life and, in addition, he protected Sarah's future productivity. In final instructions via his will, Foster charged his executors, sons Joseph and Abraham, to provide their mother with wool from his flock and with prepared arable land to grow her flax. Moreover, he attempted to ensure that an aging Sarah, lacking unmarried daughters would have extra "help" in her textile labors.

The only set of linens willed outside the immediate family was a "bed bolster, pillow and paire of sheets of my now wives makeing." This, he reserved for his granddaughter, Hannah Story. Although Hannah was not his only grandchild, nor even his only female grandchild, Foster singled her out precisely for the same reasons he handed the manufactured textiles over to his daughters: Hannah Story lived and worked in her grandparents' home. This is evident in the stipulation made by Foster that she would be entitled to her legacy only if she remained in her grandmother's home to help "as she hath done to us hitherto." Undoubtedly Hannah Story "helped" her grandmother with textile tasks that did not stop when the Foster children were grown and gone to families of their own. Hence, in the careful distribution of his

estate, Renold Foster asserted the important contribution of the women in his household as well as the value of his household's textiles.¹⁵

Most women never saw their labors directly acknowledged. For instance, John Gould, the Topsfield weaver and keeper of sheep, recorded credit in his account book for more than ten pounds of spun yarn from "Uncle Andrew." Since men did not spin, it seems likely that Andrew's wife or daughters were the spinners who provided the skills and labor for the credit on their household's account. On another page, a similar entry indicated that "Brother Thomas" was credited for spinning twelve and a half pounds of combed flax.¹⁶ In the case of hired women, their labor was even more obscure.

Just as Mary Killam anonymously contributed to the wealth of the Parsons family as a poor young servant, so did many young women whose work went largely unrecorded. One exception that yields tiny glimpses of these female workers is found in criminal and civil court records. Young women showed up in the records as witnesses, defendants and plaintiffs, and their labors became a matter of record.

Mary Walcott, a young Salem woman, sat "composed and knitting" while claiming to be tormented by one of the

15. Estate of Renold Foster, Sr., ECPR, Vol. III, p. 419-422.

16. Account book, John Gould of Topsfield (1662-1724), MSS 223, p. 5-7, Phillips Library, Essex-Peabody Museum, Salem, Massachusetts.

accused witches, Goody Cloyse.¹⁷ At the time of her testimony, Mary knitted yarn under the supervision of the wife of her employer, Thomas Putnam. However, Mary could very well have learned to knit and to spin in her own home, since yarn and knitted stockings were among the products frequently used to settle her father's accounts with Philip English, another Salem merchant.¹⁸

Mary Warren, a servant in the house of John Proctor, was among the initial group of "afflicted" girls who accused neighborhood men and women of witchcraft in early 1692. Her angry employer claimed in court that her "possession" was really malicious mischief since as long as he kept her "close to her wheel," Warren did not have time to think of witchcraft or have "fitts."¹⁹ Apparently Proctor was forced to demand textile labors from his hired girl. When he was not around to police her behavior, she avoided such work altogether. Ironically,

17. Paul Boyer and Stephen Nissenbaum, ed., The Salem Witchcraft Papers: Verbatim Transcripts of the Legal Documents of the Salem Witchcraft Outbreak of 1692, (New York, 1977), Vol. III, p. 678.

18. In an entry dated April 2, 1686, Mary Walcott's father credited his account with over thirty pounds of spun yarn. In another entry, he brought five pairs of knitted stockings. Phillip English Account book fragment, English-Touzel-Hathorne Papers, 1665-1690, MSS 11, Box 17, folder 3, Phillips Library, Essex-Peabody Museum, Salem, Massachusetts.

19. Paul Boyer and Stephen Nissenbaum, ed., The Salem Witchcraft Papers: Verbatim Transcripts of the Legal Documents of the Salem Witchcraft Outbreak of 1692, (New York, 1977), Vol. III, p. 683.

Proctor became the victim of her willful behavior when she accused him of being a witch; he subsequently died as a result of his witchcraft "examination."²⁰

While one woman's spinning kept her from "possession," another woman's was proof of enchantment. Rebecca Stearns found herself unable to make her spinning wheel work properly and, at first, thought it was "out of kilter." Both she and her husband, Charles Stearns, attempted to put it right, but the wheel seemed to be properly in balance. They began to suspect external causes. At one moment the wheel worked fine, while the next Rebecca Stearns "could make no work of it." Soon, Rebecca became convinced her wheel was enchanted by her neighbor, Winifred Holman. In the face of Rebecca's need to "spin for the necessity of her family," she demanded that Holman be charged and convicted of witchcraft.²¹

In still another case of suspected witchcraft, William Browne repeatedly harassed a young married neighbor, Goody Prince. After her child was stillborn, Prince claimed that Browne had cursed her and caused the death of her child. The neighborhood was divided over the case with much testimony on both sides. Abigail

20. Proctor refused to plead guilty or innocent, so was "pressed to death" in the examiners' attempt to force a plea from him. Carol Karlsen, Devil in the Shape of a Woman: Witchcraft in Colonial New England, (New York: W.W. Norton & Co., 1987), p. 243,

21. Trial of Winifred Holman, Middlesex County Superior Court Folio Collection, old folio 25, Massachusetts Archives, Columbia Point, Boston, Massachusetts.

Seargeant, a woman who gave evidence in defense of Browne, maintained that Prince brought the stillbirth upon herself by engaging in labors too difficult for her stage of pregnancy, including spinning for long hours.²² Browne was never formally charged and the complaint lodged by Margaret Prince was eventually dismissed, but Sargeant's observation reminds us of the daily toil faced by young housewives. Prince's prodigious spinning represented only a small portion of her workload and may even have been in anticipation of the new baby and an expansion of textile needs in the Prince household.

Although girls were never formally apprenticed to learn textile skills, guardianship petitions, indenture contracts and court transcripts clearly indicate that Bay Colony homes customarily engaged in female textile instruction. As a result, most New England women possessed the basic skills to produce yarn, the primary element of fabric. Some of that yarn was fashioned into knitted stockings, shawls, mittens and mufflers, but woven fabric was also needed to clothe the people of New England. In this way, weavers were as essential to New England's textile industry as spinners.

Since the bulk of the "great migration" immigrants hailed from the cloth-making regions of England, it is no great surprise that weavers comprised more than sixteen

22. Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Salem: Essex Institute, 1912-75), Vol. II, p. 37-8.

percent of the many skilled artisans who decided to emigrate.²³ These skilled immigrant craftsmen brought the expertise and equipment needed to produce finished cloth. Yet along with the tools of their trade, they also needed farm equipment and animals. Conditions of settlement made it necessary to engage in simple agriculture to guarantee food supplies each year. Thus, many weavers and cloth finishers continued to practice their craft in Massachusetts even as they cleared farms and developed adequate food supplies. A crude census based on occupations reported in probate inventories indicates the persistence of weavers in their trade:

Table 16: Frequency of Men Reporting Their Occupations as Weavers.²⁴

Essex County	Suffolk County	Suffolk hinterland
16% (18/116)	6% (20/348)	15% (11/72)

Clearly, many of the first-generation craftsmen were able to resume weaving at some point in their lives. In Essex County, the percentage of weavers corresponds with the percentage of those who emigrated. In Suffolk County with Boston's probates included, the percentage of weavers is smaller, indicating that the overall

23. In a sample of 151 identified artisans who emigrated in the 1630s, 24 of them were weavers. See Roger Thompson, Mobility and Migration: East Anglian Founders of New England, 1629-1640, (Amherst: The University of Massachusetts Press, 1994), p. 82-91.

24. Census taken from ECPR and SCPR where occupations were reported either by decedent in a will or by inventory clerks in the probate records.

proportion of weavers to total population may have been less due to the greater availability of imported cloth. Another possibility is that the transient population of sailors, temporary immigrants and soldiers may have skewed the overall percentage of artisans, artificially inflating the non-artisan numbers. When Boston's probates are removed from the sample and Suffolk's hinterland towns are scrutinized, the total percentage of weavers is much the same as that in Essex County.

Certainly the area a particular craftsman chose for settlement distinctly influenced how well he was able to continue his craft. It is difficult to know whether individuals realized this as they assembled their new towns or simply took their chances. Only in the case of the people of Rowley do we know that textile production was uppermost in their minds as they selected their settlement site and organized their new town. Yet, at least some weavers knew they would continue in their craft, because towns very often recruited weavers and their families to settle in exchange for land.

In 1656, the inland town of Chelmsford admitted William Howe as a free inhabitant and granted him twelve acres of meadow and twelve acres of upland meadow "provided he set up his trade of weaving and perform[ed] the towne's work."²⁵ In Ipswich, the town not only

25. William Bagnall, *The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and*

granted land, but also saw to the practical matters of buildings as well. In 1671, the town gave James Sawyer, one of at least three resident weavers, the right to fell enough trees from the common to build a little "shope" for his looms next to his home.²⁶ Two other seventeenth-century Ipswich weavers, Thomas Lull and Nathaniel Fuller, were regularly granted the right to fell pine trees from the town's common in amounts that equalled the claims of "ancient" commoners.²⁷ Clearly, the weaving trade allowed them privileges meant for valuable citizens.

Access to land and buildings did not create a class of wealthy weavers in New England, however. For the most part weaving remained an occupation for a middling tradesman.

Table 17: Probate Value of Weavers, 1635-1690.²⁸

Value	Essex County	Suffolk County	Suffolk County hinterland
0-200L	11	15	8
201-500L	7	5	3

Linen Manufactures in the Colonial Period. (Boston: W.B. Clarke, 1893), Vol. I, p. 8.

26. Ipswich Town Records, Volume II, Entry 22 December, 1671, p. 332.

27. Ipswich Town Records, various entries, Volume I, p. 328, 348; Volume II, p. 39, 60, 87, 162, 210, 329, 330.

28. ECPR, Vol. I-III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

The range of actual living standards among weaving households can be seen in the difference between three representative households from the period.

Thomas Payne, a first generation emigrant, brought his skills and equipment with him when he came to New England in 1638 aboard the Mary Anne. A weaver who apprenticed in Suffolk, Payne settled in Salem and prospered. In his will, dated 1638, he left a house and two-acre houselot with gardens in Salem and more in planting land and meadow outside the village. Additional investments in shipping and a grist mill provided the basis for his sons' legacies which were to be paid out of the sale proceeds. To his eldest son he also gave his weaving equipment which consisted of several looms and assorted "appurtenances" belonging thereto.

The existence of his "well-appointed" shop demonstrates that Payne obviously continued in his trade as a weaver, although he probably managed a small farm to provide his home with foodstuffs as well. The success of Payne's strategy can be measured by the breadth of his estate, including property and moveable goods aplenty. His trade evidently continued to serve him well, even after his move to New England. The most telling evidence of the lasting worth of Payne's vocation was Thomas Jr.'s adoption of his father's trade.²⁹

29. Although there is no extant inventory of Payne's property, the detail of his will makes it clear that Payne's estate was worth at least 200L and probably more.

A second weaver's estate provides us with a more detailed inventory. Before his death in 1673, Francis Plummer of Newbury operated a weaver's shop as well as a substantial farm. Since all we have is the list of his property and goods, there is no way to know how and when he accumulated the farm land and which came first, the trade or his property. It seems likely, though, that he was a weaver first. Plummer may have been a first-generation arrival with skills or he may have arrived apprenticed to another master weaver. His assemblage of property was most likely amassed after reaching adulthood and, since Plummer had at least two grown sons and perhaps several step-sons as well, he could have developed the farm as they matured. It is clear from his inventory that Plummer maintained a weaving shop attached to his home where his looms and equipment were set up. This would seem to indicate that although he probably supervised the operation of his land and farm, he could also have been a full-time weaver and perhaps even taken on an apprentice.

The general textile wealth of the household also betokens Plummer's skill. Sheets, table cloths, coverlets and clothing amounted to over 40L and accounted for fully ten percent of the total inventory's value. Moreover, Plummer's wife and daughters may have helped in the shop

as they certainly had access to the spinning equipment and raw materials listed in the inventory.³⁰

The third set of documents, an inventory and proofs of John Kingsbery of Rowley, gives us an example of a young and relatively poor weaving household.³¹ Kingsbery died suddenly in the winter of 1670 leaving his wife and two small children with a small estate valued at only 66L. Although he owned forty acres of "wilderness" land, Kingsbery lived in a small house built on one acre in Rowley village that housed his family and his weaving shop. With only a few livestock and rights to one acre of common pasture, he obviously made his living as a weaver. Indeed the most valuable grouping of moveable goods in the inventory was his loom, collection of reeds and other weaving "tackle," totaling over 4L.

Yet, this may have been an upwardly mobile household rather than a stagnantly poor one. With barrels of salted meat and dried corn put by as well as a small but adequate assortment of cooking utensils, the Kingsberys were obviously able to feed themselves quite well. The "bead and clothes" valued at ten percent of the total inventory indicate that at least some of the comforts of a middling household existed in the Kingsbery home. Moreover, the purchase of "wilderness" land for his

30. Plummer's estate value was 412L. Estate of Francis Plummer, ECPR, (Essex Institute: Salem, Massachusetts, 1916), Vol. II, p. 319-322.

31. Inventory and proofs of John Kingsbery, ECPR, Vol. II, pg. 224-225; III, pg. 222.

children's future indicated Kingsbery's ability to increase his assets from profits earned with his trade.

Still more significant is the second-generation status of John Kingsbery. He clearly did not emigrate with his skills; instead he apprenticed and trained in New England. Kingsbery chose to become a weaver and must have perceived it as a viable opportunity for success, not a moribund craft. Indeed, his untimely death, not his choice of occupation, seems to have been the greatest blow to his family's prosperity.

The experiences of Payne, Plummer and Kingsbery suggest that first-generation emigrants who practiced their trade did not simply weave, but also created the next generation of weavers. Second- and third-generation craftsmen enhanced the production of established workshops and became replacements when their masters retired. Moreover, in the shops of such men, weaving skills could be transmitted in either of two ways: a formal apprenticeship contract or casual transmission among family members.

In formal apprenticeships, boys were generally "put out" to live in the home of a master weaver. The young apprentice went to his master in much the same way that Mary Killam went to the Parsons home, "living in" with the master craftsman's household for the duration of the agreement. As in Killam's court-imposed indenture, the apprenticeship contract provided for specific obligations

on both sides. For the young apprentice, the contract outlined the length of training period and his expected "graduation" to the next stage of his occupation. For his part, the master craftsman agreed to teach the "mysteries" of his craft from winding quills to warping a loom to the making of "sleyes." Very often the master agreed as part of his obligations to provide the successful young journeyman weaver with his own loom at the end of his contract. In exchange, the apprentice weaver agreed to work diligently for his master for a prescribed period of time, faithfully endeavor to learn his appointed trade and respect his master's authority as he would his father's. The successful master craftsman could have more than one apprentice at one time, giving him greater productive capacity than he had on his own. For a master who could not afford the expense of an apprentice, there were other alternatives.

Very often, members of a weaver's family learned the skills of the trade without formalized training. Frequently the entire household, including the women, would have their turn at winding quills, warping the loom or weaving a "web of cloth."³² Given the seasonal nature

32. In her testimony before the Salem Quarterly Court, Abigail White described how Edmund Berry constantly derided his wife, Bettorice Berry, in White's presence, even when Bettorice performed tasks helpful to him like winding his quills. Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Essex Institute: Salem, Massachusetts: 1913-1921), June 1677, Vol. VI, p. 194-196.

of the production and processing of textile fibers, certain times of the year likely brought heavier demands and forced all available hands into the work. Even more possible, the different cloth requirements from simple tabby weaves to more intricate designs caused many weavers to set adolescent children or wives unencumbered by infants at the looms for the simpler work while they labored over the more elaborate compositions. Interested children, especially a son like that of Thomas Payne, could become their father's apprentices without formal contract and be trained to inherit the father's business as well.

The Lawes family of Salem engaged in both kinds of skill transmission. Born in or around 1586, Francis Lawes left home and apprenticed as a weaver in the English manufacturing center of Norwich. A bustling community of traders and artisans as well as a well-known textile-producing center, Norwich provided Lawes with the opportunity to set up his own shop and, presumably, to take in apprentices of his own. By 1637, Lawes, a middle-aged master craftsman and freeman of Norwich, had at least one apprentice, Samuel Lincoln, in his shop. In that same year, Lawes sailed aboard The Rose to New England taking his wife, daughter, a woman servant and his apprentice, Lincoln. Lawes must have been a fairly successful weaver since he was able to finance the passage of his family of three plus two retainers. Upon

arrival, Lawes still had enough cash to purchase a houselot in Salem.³³

In Massachusetts Bay, Lawes continued weaving full-time and informally trained at least two more people, his daughter, Mary, and her son, John Neale. Lawes hoped John Neale would carry on in the family trade and so left all his "weaueing Tackling as Loomes, slease, harnes & what euer elce belongs unto" to him. From the inventory of John Neale, Jr.'s estate in 1679, it seems clear that Neale did not pursue his grandfather's craft. Instead, Neale must have honored the clause in his grandfather's will that if he did not "make use of it himself," the loome and all its attendant parts would revert to Lawes' daughter, Mary, for her "use and dispose."³⁴

Mary Neale did use her father's loom and prodigiously. When her husband died in 1672, his inventory included a long list of table and bedlinens as well as twelve yards of "hoame-made" cloth. In her own inventory made nine years later, there was an additional harvest of linens and woolens worth about 25L. Moreover,

33. William P. Upham, "Records of Salem, 1634-1659," Essex Institute Historical Collections, 2nd Series, Vol. I, No. 1 (1868), 59.

34. For Lawes details see Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991), p. 33n, 116, 117, 138n; Roger Thompson, Mobility and Migration: East Anglian Founders of New England, 1629-1640, (Amherst: The University of Massachusetts Press, 1994), p. 87, 93, 118, 233; ECPR, Vol. II, p. 49-52. For John Neale, Jr. see ECPR Vol. III, p. 342-344.

Mary's skill became the next generation's legacy when she passed on her loom, not to her son John, but to her stepson, Samuel Mansfield.

Shortly after the death of her first husband, John Neale, Sr., Mary Lawes remarried. Her second husband was Andrew Mansfield, a widower with children from his first marriage. One of his adolescent children, Samuel, must have become interested in weaving because when he married in 1676, Mary Lawes Mansfield passed Francis Lawes' loom on to him.³⁵ When Samuel Mansfield died in a smallpox epidemic in 1679, he left his loom and all of its tackling surrounded by the appurtenances of an active weaver's shop.³⁶ So, despite the Neale family disinterest, Mary Lawes still found an heir to her father's legacy.

Unlike the Lawes, the Stickney family did not come to New England with an obvious tradition of weaving. Instead, faced with the need to settle a large brood of nine children, William Stickney apprenticed one of his younger sons, Amos, to a local weaver, possibly James Howe. Providing the apprenticeship and the wherewithal to set up, William believed himself discharged of his parental duty when he "procured [Amos] a trade and given

35. Will of Robert Mansfield and Inventory of Mary Lawes Mansfield, ECPR, Vol. II, p. 275-279.

36. Inventory of Samuel Mansfield, ECPR, Vol. III, 306-307.

him some part of estat toward his settleing" and added a token of "but five pounds more," in his will.³⁷

Amos Stickney doubtless consented to the plan or perhaps even solicited his father's help in obtaining the apprenticeship. Most apprenticeships were arranged by parents, but frequently after a child's interest has been expressed. Further, cooperation on the part of the apprentice was necessary in the completion of a successful contract. However, the best evidence for Amos Stickney's enthusiasm was his probate inventory. Replete with yarn supplies, new cloth and a "loame with all tackling for weaving," the inventory of his weaving shop suggests customary activity rather than neglect.³⁸

In a similar situation, George Abbott apprenticed one of his eleven children, a younger son named Obed, to be a weaver. Training in Salem, Obed chose to stay on there after his apprenticeship was over. Perhaps the bustling port town was the right choice since Obed was able to accumulate enough savings to purchase a house and 63 acres of land in Billerica by 1725.³⁹

Not all apprenticeships passed smoothly. In February of 1664, Joseph Pike agreed to teach Samuel Hadley the "trade of a weaver." In the contract written up by Pike and George Hadley, Samuel's father, Pike furthermore

37. Will of William Stickney, ECPR, Vol. II, p. 6.

38. Will of Amos Stickney, ECPR, Vol. II, p. 242-244.

39. Lemuel Abijah Abbott, Descendants of George Abbott, of Rowley, Massachusetts, (n.p., 1906), p. 76.

agreed to provide his apprentice with a "good loom with the tackling and a good shuttle fit to set to work with."⁴⁰ For the next five years, Hadley lived in Pike's Newbury home learning his craft and, according to Hadley, weaving "all that was wove in the house" because "his mastar Could not abide to weave."⁴¹ Towards the end of his indenture, Hadley claimed that he could weave at least ten yards of cloth a day and could warp a loom as proficiently as his employer.

As he reached the end of his apprenticeship to Pike, Hadley made plans to begin his "journeyman" work. At the invitation of John Knight, Hadley agreed to set up his loom at Knight's home and weave him a "web of Cloth." Returning to Pike's for his equipment, he apparently found Pike unwilling to live up to his end of the bargain and provide Hadley with a "good loom."

Since the original agreement concerned Joseph Pike and Samuel's father, George Hadley, Samuel turned to his father for help. Not being a weaver himself, the elder Hadley enlisted the help of a Rowley weaver, John Howe. Howe and Hadley visited with Pike attempting to settle the dispute, but found him intractable. First, Pike

40. The 1664 indenture was recopied into the court record by the clerk. Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Salem, Massachusetts: 1913-1921), March 1670, p. 219n

41. Testimony of Thomas Haynes and Mary Holten, Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Salem, Massachusetts: 1913-1921), March 1670, p. 219n.

claimed Hadley had not fulfilled the terms of the indenture. Pronouncing that Samuel was incorrigible, Pike attempted to convince the elder Hadley and Howe that his best teaching efforts went unrewarded. When two men pressed Pike further on the issue of Samuel's behavior, Pike admitted Hadley had not truly violated his contract obligations. Then, when prodded by Howe and Hadley to fulfill his part of the covenant, Pike tried to pass off an old loom "standing in a hovel which seem[ed] to be rotten and ready to fall to pieces."

Leaving Pike's home dissatisfied, the elder Hadley filed suit at the Ipswich quarterly court. Under the examination by the magistrates, the testimony ranged from the depositions of witnesses to the presentation of the original apprenticeship document. Finally, in the face of the evidence presented, the judges decided in favor of Samuel Hadley. Following their decision, the court ordered Pike to provide a "good loom with all things fitting for it" within the month.

The protracted testimony demonstrated more than Pike's parsimonious nature. Apparently, although he "could not abide to weave," Pike did not give up his craft. This suggests that occupations were not so easily discarded upon arrival in New England. Furthermore, although Pike owned some land and farmed it, he continued to get his living primarily by weaving. Pike's agreement to train Samuel Hadley may have freed him to do more of

his farmwork or may also have been the result of neighborhood pressure to guarantee continued service as in the case of the Chelmsford weaver, William Howe.⁴² Whatever his motivation, Pike helped to expand the pool of native born craftsmen manufacturing domestic cloth.

Parental instruction, apprenticeships and indentures all yielded the same result. Second- and third-generation colonists learned the skills necessary to produce domestic cloth and practiced them. The result was an extensive cloth industry that crossed gender lines and involved in one way or another almost every household in New England. To some colonists the absence of a large export industry in cloth manufacture may have been a disappointment. Certainly, the textile producers of New England worked primarily to fulfill local needs. Yet, those needs were extensive and demanded an enormous effort from a highly integrated workforce. The success of the industry was obvious to the largest proportion of settlers. To them, the ten to twenty percent of increased personal wealth furnished by domestic manufactured cloth, was sufficient to the day. Just as important, New England's domestic cloth industry spared frugal colonists from squandering their hard-earned coin on simple needs they could produce themselves.

42. William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, (Boston: W.B. Clark, 1893), Vol. I, p. 8.

CHAPTER IV

THE ORGANIZATION OF PRODUCTION

"these people being very industrious every way... set upon the making of cloth..., and caused their little-ones to be diligent.

-Captain Edward Johnson, 1651¹

Social historians who have studied early New England have variously described the domestic economy as a matter of household labor, family labor and even gender specific labor. Certainly individual households were settings within which the labor of textile production took place. Yet the organizational structure of textile work was not necessarily an embodiment of the "little commonwealth" imagined by some historians. The image of a colonial household as an:

absolutely central agency of economic production and exchange [where]...[e]ach household was more or less self-sufficient; and its various members were inextricably united in the work of providing for their material wants...²

has been particularly enduring, but this view contradicts the larger corporate effort necessary for survival in New England. Certainly family members worked together to a degree under the direction of the patriarch to provide for the needs of the household. However, this model of a self-contained and self-directed economic unit does not

1. Edward Johnson, Wonder-working Providence of Sions Savior in New England, (London, 1654), pg 130; reproduced in the Library of American Civilizations, microfiche # LAC15925.

2. John Demos, A Little Commonwealth: Family Life in Plymouth Colony, (Oxford: Oxford University Press, 1970), p. 183.

fit with the larger pattern of cloth-making. The very nature of England's and New England's textile-manufacturing networks meant that individuals were brought into the web of production at different points and under varying degrees of supervision. In this way, textile production demanded that colonial households be scenes of extensive as well as intensive human relations that routinely stretched into the homes of their neighbors. The basic fact of life in seventeenth-century New England was that no single household produced cloth by itself.

No less misleading is the gender-segregated world so gracefully teased from the pages of Martha Ballard's diary. Laurel Ulrich's vision of women circulating among neighborhood homes to work in female-segregated groups conjures a New England where men and women's work worlds remain largely gender exclusive.

[Female] community life [had as its base] a gender division of labor that gave them responsibility for particular tasks, products, and forms of trade....Men broke flax, sheared sheep, and performed other supportive services, but women had primary responsibility for the production of cloth.³

For historians who have rightly sought to replace women in the historical landscape, this view is persuasive. Women did indeed engage in sex-specific tasks and work in

3. Laurel Thatcher Ulrich, A Midwife's Tale: The Life of Martha Ballard Based on Her Diary, 1785-1812, (New York: Alfred A. Knopf, 1990), p. 78-9.

sex-segregated groups at times. Yet, this view precludes the close male/female collaboration in sheep raising, flax agriculture and the outright sharing of textile processing chores. This is not to argue that women's active role in colonial public society, especially as textile producers, is less than in Ulrich's view. Rather, that women's labors were combined with men's in order to accomplish the larger goal. Without such "promiscuous" activities, New Englanders simply could not produce enough domestic cloth for their needs. Dividing textile chores sharply along gender lines diminishes the breadth of colonial cloth-making.

More than the work of any single gender or household, one aspect or another of domestic cloth production was visible in nearly every part of New England's social landscape. Elements of textile work could be found on farms where shepherds cared for their flocks and in gardens where women harvested their flax and hemp. Barns and lofts were sites where men and women began the first steps of fiber processing. In the garrets and greatrooms of colonial houses, families stored distaffs crowned with fine blond flax strands and baskets filled with fluffy cotton and wool rolags until they could be spun into yarn. Housewives and their daughters turned and treadled their spinning wheels in their sunny dooryards or in front of a warm hearth of an evening. In shops and houses weavers worked huck-a-buck and diaper

designs into the cloth on their looms surrounded by their wives and children winding quills and preparing new warps. Along the banks of fast flowing rivers mill wheels chattered and turned the machinery inside the fulling mills of the cloth dressers. Indeed, the manufacturing of textiles wove a richly intricate tapestry drawing individuals, neighborhoods, communities and even regions into its web.

As a domestic industry and part of the provincial economy, cloth-making concerned more than just the shepherd, housewife or clothier, it was also the business of colonial leaders. In Massachusetts, the provincial government recognized the importance of domestic textiles and political actions directed the overall pattern of production. Within a decade of the arrival of the Winthrop fleet, the Court began to concentrate on development of the industry.

The Court taking into serious consideration the absolute necessity for the raising of the manufacture of linen cloth, etc. doth declare that it is the intent of this Court that there shall be an order setled about it, and therefore doth require the magistrats and deputies of the several towns to acquaint the townesmen therewith and to make inquiry..., what men and women are skillful in the braking, spinning, weaving; what means for the providing of wheeles; and to consider with those skillful in that manufacture, and what course may be taken for teaching boys and

girls in all townes the spinning of the yarn; and to return to the next Court their several and joynt advise about this thing.⁴

In effect, the magistrates attempted to produce a survey of the potential for textile manufacturing that could then inform their management at the provincial level. The study must have revealed an obvious potential for cloth-making since the next announcement offered production incentives.

In October of the same year, the Court instituted a bounty of three pence for every shilling's worth of fabric produced. Several stipulations dictated how bonus fabric would be defined.

[T]he cloth must be made within the jurisdiction and the yarne heare spun alsoe, and of such materials as shallbe also raised within the same, or else of cotton.⁵

These incentive payments continued to be paid for a little more than a year until the Court, under pressure from an economic recession, repealed the order.

Nevertheless, a considerable number of men were able to claim sizable bounties before the court revoked its obligation. Among these, John Whitredge, an Ipswich man,

4. Order of the Massachusetts Bay General Court, May 13, 1640, Records of the Governor and Company of the Massachusetts Bay in New England, Nathaniel Shurtleff, ed., (Boston: 1853), Volume I, p. 294.

5. Order of October 7, 1656, Records of the Governor and Company of the Massachusetts Bay in New England, Nathaniel Shurtleff, ed., (Boston: 1853), Volume I, p. 294.

collected payment for the manufacture of over eighty yards of fabric produced in 1641.⁶

Over the next decade, the Court authorized multiple ordinances designed to encourage development of domestic textile resources as well as to seek out and promote necessary skills. While some historians have dismissed these as futile attempts to entice reluctant colonists into cloth manufacture, the cumulative effects of these various pieces of legislation would seem to indicate otherwise.

For instance, in their attempt to promote linen production, the members of the Court encouraged the exchange of flax seed varieties for crop experimentation. The dissemination and cultivation of different flax seed varieties led to impressive crop yields. In a report written in 1649, Beauchamp Plantagenet observed that New Englanders were producing more than half a ton of flax and a ton of hemp for each acre sown.⁷ In response to official urging, development of the provincial sheep flock was rapidly underway within ten years of settlement. Likewise, the importation of cotton had become commonplace. Compelling evidence of the Court's effectiveness was their own confidence by mid-century.

6. William Bagnall, The Textile Industries of the United States Including Sketches of Cotton, Woolen, Silk, and Linen Manufactures in the Colonial Period, (Boston: W.B. Clark, 1893), Vol. I, p. 5.

7. Plantagenet was quoted in J. Leander Bishop, History of American Manufactures, (Philadelphia: E. Young & Company, 1868), p. 316.

Rather than just encourage textile production, legislative acts began to require compliance with provincial goals. The Court was neither short-sighted nor foolish. The magistrates must have firmly believed in the ability of New England towns to abide by their directives.

In the spring of 1656, the General Court notified all Massachusetts Bay households of their new domestic textile policy,

Not knowing any better ways and means, condusale to our subsistence, than the improving of as many hands as may be in spinning woole, cotton, flax, etc.; It is therefore ordered... that all hands, not necessarily employed on other occasions, as women, girls, and boys, shall be, and hereby are, enjoyned to spin according to their skill and ability...⁸

Instructing town selectmen to oversee their order, the Court directed towns to identify their potential and actively aspire to the general standards set by their order:

Every one, thus assessed for a whole spinner, do after this present year, 1656, spin for thirty weeks every year three pounds per week of lining, cotton, or wooling, and so, proportionately, for one half or one quarter spinners.⁹

8. Order of May 30, 1656, Records of the Governor and Company of the Massachusetts Bay in New England, Nathaniel Shurtleff, ed., (Boston: 1853), Volume I, p. 303.

9. Order of May 30, 1656, Records of the Governor and Company of the Massachusetts Bay in New England, Nathaniel Shurtleff, ed., (Boston: 1853), Volume I, p. 303.

To enforce the new policy, the Court decided to levy fines on households who did not meet their obligations. For "every pound short," the selectmen were bound to "take special care" to fine the deficient household twelve shillings. Each household was expected to produce its share of the yarn necessary to manufacture the volume of cloth needed to meet the "present straight and necessities that ly upon this country."¹⁰

The General Court's decision appears to have sparked heated discussion in at least one town meeting. Although the specifics of that debate are now obscure, Salem townspeople discussed the possibility of a spinning law at length. William Titcomb, the moderator of the meeting, spoke out against the ordinance and even claimed it was a rumor. Titcomb agreed there had been "much agitation" about a "spinning law," but then denied any such ordinance had been created by the Court. After the meeting, the debate resumed at a local ordinary where Titcomb again denied the existence of such a law. Unfortunately for him, the matter did not end there. Several frustrated men complained to authorities that Titcomb encouraged Salem townspeople to ignore the General Court's enactment. When this charge surfaced at

10. First Section, Order of May 30, 1656, Records of the Governor and Company of the Massachusetts Bay in New England, Nathaniel Shurtleff, ed., (Boston: 1853), Volume I, p. 303.

the next town meeting, the selectmen settled the issue by fining Titcomb for "lying" at a public meeting.¹¹

Despite what may have been misgivings in Salem, Ipswich leaders rose to the occasion. Adopting a direct approach, the committee "of Seven Men" appointed one selectman to conduct a census for each neighborhood. When the initial poll was completed, they had compiled a town-wide survey of each household's assessment and calculated the town's total production quota for each year. In the report presented at a town meeting and copied into the minutes, selectmen estimated that Ipswich possessed the potential to produce 3,870 pounds of finished yarn each year and carefully set out how the obligation would be met by each household.

Table 18: Breakdown of Ipswich Household Obligations for Spun Yarn, December 1656.¹²

Assessment	#	(%, N=78)	Yearly Production
one-quarter	15	(19%)	337.5
one-half	43	(55%)	1935.0
three-quarters	9	(12%)	607.5
one whole	11	(14%)	990.0
Totals	78	(100%)	3870.0

According to the estimates of the selectmen, more than half of the town's seventy-eight families possessed the ability and resources to produce approximately fifty

11. William Titcomb case, Records and Files of the Quarterly Courts of Essex County, Massachusetts, WPA transcripts, Vol. III, p. 116-117.

12. Entry December 10, 1656, Ipswich Town Records, Volume I, folio 199, Ipswich Town Clerk, Ipswich, Massachusetts.

pounds of yarn per year. At first, this would seem a less than vigorous commitment on the part of the town. Yet, if each Ipswich household met its quota, the potential result was an average of more than fifty yards of fabric per year per house. Given the wardrobe needs of an average family, fifty yards was certainly more than enough to satisfy most demands and have a small surplus left.¹³ Obviously, a household that exceeded its quota possessed surplus fabric for the local market.

Ipswich town selectmen doubtless knew the textile needs of an average family well. First-generation immigrants had had to plan in detail for their initial settlement needs in New England and at mid-century most selectmen were still drawn from that group. Their projections, based on well-known general requirements, weighed the work of producing common daily necessities against the additional labor needed to successfully manage a colonial household. The result was an educated guess as to what textile work Ipswich families could comfortably sustain. At the same meeting, Ipswich selectmen ordered all single persons within the town to

13. This estimate is based on the average wardrobes for men and women discussed in the introduction and an average family consisting of seven children and two adults. For family size see Philip J. Greven, Jr., "Family Structure in 17th-century Andover," in Colonial America: Essays in Politics and Social Development, Stanley Katz and John Murrin, eds., (New York: Alfred A. Knopf, 1983):142-161. Greven observes the parallel numbers in several other community studies in his article.

"dispose themselves into service within one month" and become productive members of well-governed families. The correspondence of the Court's order and Ipswich's impressment of any supplementary labor was too precise to be just coincidence.¹⁴

Another element that may have influenced spinning assessments in Ipswich and elsewhere was the availability and distribution of textile tools. Some, such as scutching boards, scutching knives and flax breaks were simple wooden implements easily made and discarded. Other equipment like spinning wheels, hand cards, hatchels and looms called for varying degrees of joinery and metallurgical skills. Certainly colonial craftsmen had access to examples brought from England to copy and the skill to make new, but this did not mean that every household owned textile equipment. Indeed, probate inventories from the period indicate that many households owned none at all.

This apparent lack of textile equipment lends credence to the conventional argument that imports continued to be the primary fabric source for colonial New England, even after initial settlement was over. Specifically, historians pointed to a lack of weaving equipment in the colony as a factor in the "deficiency" of textile production. However, a close examination of

14. Entry December 10, 1656, Ipswich Town Records, Volume I, folio 198, Ipswich Town Clerk, Ipswich, Massachusetts.

probate inventories reveals that even though every household did not own a loom, a significant number of looms were available for use in the colony.¹⁵

Table 19: Frequency of Probates Reporting Looms.¹⁶

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-49	3 (N=70) 4%	2 (N=71) 3%	1 (N=48) 2%
1650-69	8 (N=336) 2%	13 (N=518) 3%	7 (N=175) 4%
1670-89	15 (N=486) 3%	10 (N=606) 2%	8 (N=210) 4%

Table 19 demonstrates that a constant three to four percent of all probate records in the period report at least one loom and its "appurtenances." Since many of the first-generation emigrants lived beyond the 1689 period, these probates provide only a rough estimate of the number of active weavers at work in the two counties over the whole period.¹⁷ Despite the conservative numbers developed from the probate inventories, active use of sixty-seven looms could have produced a substantial

15. Looms are not complex in their construction and some very fine joinery was being done in the two counties during the period. At least one very elaborate tape loom was constructed in Ipswich by Thomas Dennis in the 1660s. See Helen Park, "Thomas Dennis, Ipswich Joiner: A Re-examination," *Antiques*, LXXVII (July, 1960):40-44 and "The Seventeenth-Century Furniture of Essex County and Its Makers," *Antiques*, LXXVII (October, 1960):350-55. See also Dean A. Fales, *Essex County Furniture: Documented Treasures from Local Collections, 1660-1860*, (Salem: Essex Institute, 1965), plate 11.

16. ECPR, Vol. I-III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

17. In an informal survey of quarterly court records and town histories, I have identified at least thirty additional Essex County weavers who survived past the 1690 cut-off of my study.

volume of cloth. If the average weaver spent only thirty weeks a year at his loom and produced at least ten yards of cloth, as one weaver testified in Ipswich court, the gross production would be approximately 120,000 yards of fabric per year at the least.¹⁸

Another way of gauging the availability of looms to potential weavers is in the response of the Ipswich Quarterly Court to Hadley vs. Pike. As we know, Samuel Hadley enlisted the help of his father to sue Joseph Pike for breach of an apprenticeship contract. The litigation between Hadley and Pike exposed more than just a dispute between neighbors, it also illuminated the crucial importance of weaving tools to a newly trained artisan and how difficult access to new equipment could be. Despite completing his apprenticeship, Samuel Hadley could not get started on the journeyman stage of his craft without a loom. His lack of equipment became critical when John Knight offered him his first opportunity to "set up."

Turning to his father, George Hadley, Samuel enlisted his aid in bringing Joseph Pike to court. After hearing the evidence of at least six witnesses and viewing the original indenture document, the Ipswich magistrates decided to find in Hadley's favor. They

18. This figure assumes that all of the households had only one loom and one weaver that worked about 180 days a year. It is actually a conservative figure since some shops, like that of Thomas Payne, had more than one loom and many households had more than one resident weaver.

ordered Pike to pay Hadley's court costs and to provide him with a new loom "with all things fitting for it within one month [my emphasis]."

At the least, the judges' decision makes it clear that textile tools were readily procurable in Essex County. Hadley probably could have provided himself with his own loom at his own expense, but because of the contract, he expected Pike to do so. The court agreed, but would not have made such an order without being reasonably sure that Pike could obtain a new loom for Hadley within that time.¹⁹ Although apprenticeship contracts like that of Hadley are rare, those that have survived indicate that master weavers often promised to provide equipment to their apprentices when they completed training. When the master and apprentice were father and son, final ownership of the looms and shop equipment was usually provided by the testamentary documents.²⁰

Weavers and their looms were certainly important to the making of cloth, but near the center of the productive network stood the spinners and their wheels. As the basis for yarn production and the grist for the

19. George Hadley vs. Joseph Pike, Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Salem, Massachusetts: 1913-1921), Vol IV., p. 218-220.

20. Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Salem, Massachusetts: 1913-1921), Vol. I:90; Vol. IV:218-220; Vol. V:159, 202, 389.

weavers' looms, wheels were also a good indicator of textile tool distribution and activity in the period.

Table 20: Frequency of Probates Reporting Spinning Wheels.²¹

Year	Essex County	Suffolk County	Suffolk County hinterland
1630-1649	20(N= 70)29%	10(N= 71)14%	8(N= 48)17%
1650-1669	96(N=336)29%	103(N=518)20%	48(N=175)27%
1670-1689	146(N=486)30%	92(N=606)15%	61(N=210)29%

As Table 21 shows, roughly one-third of rural households owned at least one spinning wheel. Again, Suffolk County figures seem to be skewed by the urban population of Boston, but when Boston's numbers are removed the numbers are very similar to Essex County's.

Compared to the number of looms reported in the inventories, the quantity of wheels seems disproportionate at first. Yet, when one considers that each busy weaver required the yarn output of approximately twenty diligent spinners, the disparity in numbers makes sense. Like the looms of weavers, spinning wheels could be operated by more than one member of the family or even a neighbor. Thus, one spinning wheel could produce twice or three times the volume of one spinner if there were two or three people to make use of it. Still, spinning wheels were not universally owned and their presence or absence in a household suggests different productive strategies among colonial households.

21. ECPR, Vol. I-III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

An analysis of the probate inventories with wealth factored in discloses a more detailed picture of where spinning wheels were most often found.

Table 21: Provenience of Spinning Wheels in Probates by Wealth.²²

Value	Essex County	Suffolk County	Suffolk County hinterland
0-200L	133 (N=262) 51%	83 (N=205) 41%	42 (N=129) 33%
201-500L	89 (N=262) 34%	80 (N=205) 39%	53 (N=129) 41%
501-800L	23 (N=262) 9%	28 (N=205) 14%	24 (N=129) 19%
800L+	17 (N=262) 7%	14 (N=205) 7%	10 (N=129) 8%

Clearly, households with probate values under 500L were more likely to own spinning wheels. This distribution might indicate that households of greater wealth purchased their cloth, whether imported or domestically produced. Another possibility is that middling households, those with probate values between 100-500L, were more typically geared towards artisanal manufacture and could afford to own the tools necessary to the work. Indeed, numerous studies of the Great Migration indicate a high percentage of immigrants were middling craftspeople, some of whom paid to bring their equipment with them.²³

22. ECPR, Vol. I-III, (Salem: The Essex Institute, 1917). SCPR, Vol. I-IX, unpublished microfilm.

23. See Virginia Anderson, New England's Generation: The Great Migration and the Formation of Society and Culture in the Seventeenth Century, (Cambridge: Cambridge University Press, 1991); Roger Thompson, Mobility and Migration: East Anglian Founders of New England, 1629-1640, (Amherst: The University of Massachusetts Press, 1994).

For poorer or younger households, owning equipment may have been less likely, but access to textile tools could have come through outwork in the neighborhood's wealthier homes. It was spinning that brought Abigail Darling to the Salem Village home of Widow Mary Putnam. She and Deborah Knight, another young woman from beyond Hathorne's Hill, worked together at their wheels and took turns caring for Putnam whose health was rapidly failing. Perhaps because they were sharing nursing duties as well as household chores, both girls were on hand to witness Putnam's will. With her work finished at Widow Putnam's, Abigail returned home for a few days, but quickly moved on to the employ of Goodwife Cheever, a next-door-neighbor of Widow Putnam. Ezekiel and Abigail Cheever needed additional help, since their only daughter was now married and living away. Abigail Darling took her place, at least in front of the Cheever's spinning wheel.²⁴

In Andover, as we know, Thomas Barnard employed several young neighborhood women to spin. The children of Barnard's neighbors, the girls were probably well-acquainted with the family. Moreover, some of the young women were undoubtedly accustomed to working as a group since they were closely related to each other and probably moved easily between their respective homes.

24. Paul Boyer and Stephen Nissenbaum, ed., Salem-Witchcraft: A Documentary Record of Local Conflict in Colonial New England, (Boston: Northeastern University Press, 1993), p. 220-1.

Two, Betsey and Mary Farnum, were sisters. As the daughters of John Farnum, they were among the Barnards' closest neighbors. Connected by their relationship to Bradstreet and his flock, the Farnum and Barnard families obviously exchanged more than sheep. Three more of the young women, Lydia, Hannah and Mary Abbott, were the Farnums' first cousins through their mother, Sarah Farnum Abbott. Not all of the young women were related, though. Bridget Richardson, Dorcas Lacy and Betty Faulkner do not seem to be linked, except by their connection as paid labor to the Barnard household. Thus, economic as well as familial connections influenced who came to the Barnards' home to work.

All of the young women were unmarried at the time and their presence in the Barnard home indicates another way in which textile equipment could be accessed in a community. Surplus daughters could be sent out to work for a neighbor who owned the necessary equipment. Their labor allowed all of the families to share the community's textile production requirements without the investment in equipment they probably could not afford. At the same time, the girls' wages, likely paid in finished yarn or cloth, provided their parents with access to textiles without cash outlay. By this strategy, families could invest their surplus daughters' labor in the neighborhood textile industry for a tangible return. Only a daughter's marriage interrupted the flow.

At least two of the young women who worked for Barnard wed within five years of his diary notations.²⁵ Their marriages presumably meant leaving the household of their parents or employers, but did this mean that outwork in the neighborhood would also end? For some women, marriage might mean access to textile equipment through a "setting out" gift from her parents. John Gould, the Topsfield weaver, provided his daughter Phebe a wheel to spin the wool from the three sheep included in her portion.²⁶ Clearly, Phebe Gould had the means to produce wool yarn in her new husband's home. Another means could have been through marriage to a widower with an already-equipped household, as was the experience of Beatrice Plummer in her second marriage.²⁷ Under either circumstance, a new wife produced textiles for her own family and possibly had the opportunity to supervise others much like Mrs. Barnard. For most, though, access to equipment continued through borrowing and utilizing a neighbor's tools, especially before a couple's first child was born. Even if a young wife had her own wheel,

25. A marriage for Betsey Farnum to George Holt was recorded on 10 May, 1698. See Clarense Almon Torrey, New England Marriages Prior to 1700, (Baltimore: Genealogical Publishing Company, Inc, 1985), p. 385.

26. John Gould Account Book, MSS 233, Box 1, Folder 1, leaf 75, Phillips Library, Essex-Peabody Museum, Salem, Massachusetts. Sylvester Judd recorded the "setting out" list of Sarah Wright (Hadley) that also included two spinning wheels. Judd Miscellaneous Manuscript, Vol. i, p. 91.

27. Laurel Thatcher Ulrich, Good Wives: Image and Reality in the Lives of Women in Northern New England, 1650-1750, (New York: Alfred a. Knopf, 1982), p. 29.

she may still have gone to a neighbor's home to work. As one woman advised her daughter, she "might better do her work an go to another bodys house than they that have a great family can go to hers."²⁸

Clearly, the social nature of such gatherings was important to the maintenance of inter-neighborhood relations, but they were also a result of the nature of textile production. As we have seen, the making of cloth began with the production of fibers and progressed through stages of processing and spinning before the final weaving and fulling could take place. By the very nature of this complex set of steps, not every household could or would have participated in every step of the process. Instead, some families produced fibers while some processed and created yarns. Other families finished the cloth. At the center of the web of connecting functions there was often a cluster of families that facilitated the productive capabilities of their neighborhood, either by providing tools, skills or some other crucial aspect of the cycle. Reverend Barnard's Andover household operated as just such an anchor in his neighborhood.

We know that Barnard owned a small flock of sheep that produced a substantial wool harvest, especially after the flock was entirely his. He also owned the

28. Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Salem, Massachusetts: 1913-1921), Vol. III, p. 140.

equipment, at least four spinning wheels and an unspecified number of handcards, to manufacture wool yarn. To supplement the family's labor needs, Barnard drew on families with surplus daughters and little or no equipment. Yet, despite his impressive network, even Barnard did not produce cloth in his mini-factory. The yarns were sent to the neighborhood weaver and perhaps then on to a local fulling mill before they came back as dressed cloth. Due to the male bias of Barnard's account book (he never once mentions his wife), we have no clear vision of whether he or his wife orchestrated the productive textile work in their home. However, glimpses of other similar webs of production indicate women were more likely to be the stewards of these thriving networks.

Margaret Prince, the harassed young matron whose first child was still-born, participated in just such a female-headed structure. Widow Babson was Prince's next door neighbor and actively drew on the neighborhood for workers. As a result, Babson's house was perpetually full of neighborhood women like Prince who came and went with fiber, yarn and cloth. Prince was apparently spinning for Babson at the time of her dispute with William Browne. As her erstwhile employer, Babson was the natural authority that Prince appealed to in her distress. Arriving with hands "full of spun wool" for Babson, Prince's entrance was witnessed by no less than five other women,

presumably engaged in textile labor. Caught by her labor pains before she could return home, she turned to these women neighbors, along with the local midwife, to deliver her stillborn child and nurse her through recovery.²⁹

Another woman who likely coordinated neighborhood skills was Mary Rogers. A native of Yorkshire County England, Mary had grown up in an area that produced fine woolen cloth. As a young woman, she married Ezekiel Rogers, the rector of the parish in Rowley, England. When a parish schism caused the dismissal of her husband from his pulpit, a group of Rowley residents, including Mary and Ezekiel, set out for New England sometime in 1638. This group formed the core of the settlement in Essex County known also as Rowley.³⁰

When Ezekiel died in 1674, he left an estate that included raw wool, spun yarn and a small flock of sheep. As his widow, Mary was given sole administration of his estate and was entrusted by the court to maintain the value of the estate for their children. Although there was no spinning wheel in the inventory, one indication that she drew on neighborhood labor to process her

29. Records and Files of the Quarterly Courts of Essex County, Massachusetts, (Salem, Massachusetts: 1913-1921), Vol. II, pp. 37-8. WPA transcript, Phillips Library, Peabody-Essex Museum, Vol. III, pp. 108-113.

30. Edward Johnson, Wonder-working Providence of Sions Savior in New England, (London, 1654), pg 130; reproduced in the Library of American Civilizations, microfiche # LAC15925; George Brainard Blodgett, Early Settlers of Rowley Massachusetts, (Rowley: Amos Everette Jewett, 1933), p. 273.

sheep's wool into yarn and then finished cloth were the details of the inventory which included wool, yarn and cloth. Unfortunately, no testimony like that of Prince's suit against Brown has preserved the details of Mary Roger's network. Despite this want of detail, it seems clear she operated much like Widow Babson. One can easily imagine Mary Rogers distributing her wool to neighborhood spinners, and receiving the spun yarn in return. The raw wool, spun yarn and new wool fabric in her inventory testifies to competent management of her network and it was certainly productive. In the three years following the death of her husband, a neighborhood fulling mill operated by the Pearson family charged Mary Rogers' account for "dressing" more than 35 yards of wool serge. Along the way to the mill, Mary probably traded wool and yarn for the services of the spinners and weaver before the final product of finished fabric came back to her. It is also possible, since the wool clothing in her inventory did not equal the amount of wool fabric, that she paid for the spinning and weaving in finished fabric. Mary may well have perpetuated the interdependent circle of production for still another woman when she willed her possessions including her sheep to her cousin, Ann Nelson.³¹

31. Inventory of Ezekiel Rogers, ECPR, Vol. II, pp. 416-417; Will and Inventory of Mrs. Mary Rogers, Vol. III, pp. 289-291.

Some characteristics of these women organizers seem to be constant. Widow Babson, Mary Rogers and Mary Putnam were all widows with substantial estates replete with various combinations of sheep, crop land, textile tools and access to cloth finishers. Although the details do not permit certainty, it is possible that older married women like Abigail Cheever and Goodwife Barnard operated similar networks. Perhaps the other operative factor here was age. With few, if any, younger children in the household, older housewives could turn their attention to the organization of a larger productive network. With smaller families to wash, bake and brew for, these women could concentrate vital energy on building equity in their husband's estate and making more general wealth available to their household through textiles.

Weavers' homes could be centers of production networks as well, though they may well have been overlapping centers in which wives orchestrated yarn production and husbands created fabric. John Gould's weaving shop produced a variety of fabrics for customers from yarns supplied by his wife and daughter as well as from the members of the productive network associated with his shop. His account book entries chronicle, if sometimes haphazardly, the interactions of this network.

In one transaction, Gould used flax supplied by "Mr. Symonds" to weave two pieces of cloth for another customer. The dressed flax was spun by an uncle's wife, a

member of Gould's regular laborers, and the cloth may even have been woven by his apprentice, Benjamin Standly. In other transactions, Gould arranged for flax to be dressed and prepared for spinning and then passed the flax on to be spun to still another woman. He also owned part of a collectively managed flock of sheep that doubtless provided him with a harvest of wool and the basis for some of his wool cloth.³²

Textile networks could also develop around a merchant's activities. Since domestic products were the basic currency of most financial transactions of the period, textile products would naturally have come into the hands of merchants. With access to many different households, merchants were in an ideal position to take advantage of the organic development of textile networks and produce finished cloth for sale. Moreover, they could extract additional profit from as many of the different steps of the process they could control. Evidence for this manipulation of the manufacture of domestic textiles can be found in daybooks and ledgers from the period.

In three account books kept by Salem merchant George Curwin during the years 1652-1662, a regular traffic of domestic goods circulated into and out of his shop. Most of Curwin's accounts were identified with the male head of household's name and noted male goods such as wood or

32. John Gould Account Book, MSS 233, Box 1, Folder 1, Phillips Library, Essex-Peabody Museum, Salem, Massachusetts.

corn by the bushel, but female textile products figured prominently, too. Supplied by housewives or daughters, Curwin sometimes identified their work with notations like "by your wf's hand." Typically an account's reckoning drew from both male- and female-produced goods such as in the entries for Thomas Dorman that combined fire wood and barrel staves along with spun yarn and honey from his wife's bee hives.³³ One 1659 account, however, shows how the lines between male and female textile-related products could blur.

Headed by a woman's name, Widow Giles, her account reckoned in 1659 lists a bag of raw wool weighing 270# on the credit side. At first glance, one might assume Bridget Giles's transaction to be an unusual case. Not so. A widow for almost twenty years, Giles controlled a large meadow, at least ten acres of arable land and an indeterminate number of livestock. Among her assorted "cattel" she kept a flock of approximately 48 sheep, but with no extant copy of her probate inventory greater detail is impossible. Her wool traded to Curwin may have been one of the commodities available to her through her "widow portion" that was meant to be marketable surplus and used as such. Thus, although she had not processed the wool, Widow Giles provided a substantial contribution

33. Family Papers of George Curwin, 1610-1684, MSS.45, George Curwin Account Book, Volume III, p. 33, Peabody Essex Museum Library, Salem, Massachusetts.

to the overall production of Salem's textiles and to the personal involvement of George Curwin in its operation.³⁴

Despite Curwin's position as a merchant in one of the larger import/export centers of Massachusetts Bay, the pattern of transactions in his account books indicate that he routinely acted as a middleman in the active domestic production of cloth by his customers, especially when it involved the use of imported fiber. Often supplying customers with "cotton woole" on credit, Curwin accepted spun thread and woven textiles as payments on their accounts.³⁵ The thread and yarn was then parcelled out and sold to other individuals who sometimes reconciled their accounts with knitted stockings or woven cloth.

Widow Giles' wool, for instance, as that of other suppliers, was resold to Curwin's customers in smaller units usually from six to ten pounds each. These smaller portions of the wool crop came back to Curwin again in the form of wool yarn and sometimes wool fabric. Wool was not the only fiber or yarn type Curwin credited or debited accounts for. Raw cotton, dressed flax, cotton and linen yarns and a variety of fabrics also passed through his accounts. He even profited from the sale of

34. Family Papers of George Curwin, 1610-1684, MSS.45, George Curwin Account Book, Volume III, p. 22, Phillips Library, Peabody Essex Museum Library, Salem, Massachusetts.

35. Family Papers of George Curwin, 1610-1684, MSS.45, George Curwin Account Book, Volume I, II & III, Peabody Essex Museum Library, Salem, Massachusetts.

equipment. Curwin's warehouse routinely held multiple pairs of hand cards, sheep shears and knitting needles.³⁶ Although he may not have been directing the work of a neighborhood as Widow Babson or even Thomas Barnard, George Curwin certainly operated well within the lines of several overlapping circles of production, especially in the Salem area. His scope of business extended beyond Salem, however, partly because of his ready supply of cotton wool. Trading with Barnard and Farnum in Andover, Denison and Knight of Ipswich and Bixby of Topsfield, Curwin benefitted at every turn from the productive activities of a great portion of Essex County.

Joshua Buffum handled a similar, though smaller, portion of the textile activity in his mercantile business. The son of an early Salem planter, Joshua inherited two-thirds of his father's land and a woodlot from which he launched his business. Between 1674 to 1709, Buffum's account book records the progress of his business with frequent sales of sawn lumber and wooden coffins. However, Buffum did not rely solely on wood for his business. His customers very often settled their accounts with a variety of produce, including textile products. Josia Walcott, for instance, brought Buffum 188 pounds of yarn in November of 1688. Walcott did not bring

36. Loose papers associated with George Curwin's accounts, Curwin Family Papers, Box 9, item 6, Phillips Library, Peabody Essex Museum Library, Salem, Massachusetts.

all of the textile produce of his household to Joshua Buffum. In a pattern related to his personal needs, Walcott brought yarn and knitted stockings to at least two other merchants, Jonathan Curwin and Phillip English.³⁷

Buffum, in turn, contributed to this circulation of textile items in a connected series of trades. In some accounts he received yarn for cotton wool. In others, he traded yarn for finished cloth. He may even have rounded out the trade circle by sending his yarn off to the weavers for cloth to sell back to his customers. Between 1692 and 1700, Buffum's accounts reveal an active trade in textile fibers, yarns and cloth of various types. He even seems to have become interested in owning and raising sheep, since he made a meticulous accounting of Salem grazing rights in the "North fold" for 1683, including five "poles" for himself.³⁸

A third account book from nearly a century later displayed a remarkably similar pattern to those of George Curwin and Joshua Buffum. Kept by an unknown merchant in the Nantucket area in the years 1763-1769, this ledger carried eighty-five accounts kept over approximately

37. Fragment of Jonathan Curwin Account Book, Curwin Family Papers, Box 9; Phillip English Account Book, English-Touzel-Hathorne Papers, Box 17, folder 3, Phillips Library, Peabody Essex Museum Library, Salem, Massachusetts.

38. Robert Buffum Estate, ECPR, p. 174-177; Joshua Buffum Account Books, 1674-1709, FMS B9293, Phillips Library, Peabody-Essex Museum, Salem, Massachusetts.

twenty years. Fully one-third of the domestic produce satisfying debt was spun fiber or finished cloth. The pattern of circulation evinced in this ledger paralleled those of Curwin and Buffum.³⁹ Fiber, yarn and cloth circulated from one account to another in an almost perpetual round of production and consumption. The domestic cloth produced in Nantucket in this lively exchange may not have moved beyond the limits of the town or even that particular merchant's neighborhood, but certainly contributed to its viability.

One final area where the scope and scale of New England's domestic fabric production becomes particularly apparent is in the creation and production of fulling mills. Although fulling was not a necessary step in the creation of all types of cloth, for good wool cloth it was essential. In a fulling process, newly woven wool cloth was washed, shrunk and then felted. Properly dressed cloth was then napped with teasels and evenly sheared for a smooth appearance. The entire process was time consuming, but made the fabric much more valuable. Thus, a serious cloth industry, especially one that produced woolens, required that there be fulling capabilities of some sort available.

39. This account book is unsigned and has no placename written into the flyleaf, but the individual account names indicate that this may have belonged to a Nantucket merchant. Anonymous Account Book, manuscript 142, Special Collections, University of Massachusetts Library, Amherst, Massachusetts.

The appearance of fulling mills in New England has not been particularly well documented, but there are a few exceptions. A 1635 entry in the Ipswich town records granted John Shatswell a six-acre piece of land on the Egypt River. By 1638, Shatswell acquired two more pieces on the North and Muddy Rivers. Although the town records do not specifically mention his intentions, Shatswell's preference for river sites suggests he was trying to develop an appropriate location for a mill. By 1656, John Shatswell's son, Richard, operated a hemp mill and shortly thereafter a fulling mill on his father's original six-acre parcel on the Egypt River.⁴⁰

Despite Shatswell's early start in Ipswich, the first documented fulling mill in New England was built in Rowley by John Pearson. Not of the original complement of Yorkshire men to come from England, Pearson apparently relocated to Rowley from Salem in 1642 with the intention of erecting a mill. By tradition, Pearson built somewhere on the Mill River near the Bay Road by 1643 at a place that eventually became a mill complex with saw mills, grist mills and additional fulling mills. Styling himself a clothier, Pearson probably moved to Rowley specifically to take advantage of the townspeople's intention to produce woolen cloth. For the next four generations of the Pearson family, most of the Pearson men called themselves clothiers, participated in the operation of

40. Ipswich Town Records, I:3, 7, 9, 11, 207.

the growing complex of mills and passed the implements of their trade on to their sons.

Peter Chaney built a third fulling mill in the town of Newbury close to the Rowley line in 1686. Petitioning the town for permission to set up several types of mill, Chaney promised to build a fulling mill within three years of his occupation of the site. The new mill was obviously meant to complement Pearson's Rowley business because the town's agreement with Chaney expressly connected the operations of the two mills.

[Chaney] doth engage himself to full this town's cloth before any other town's and to do it upon the same terms as Mr. Pearson doth full cloth⁴¹

Clearly, the town of Newbury wanted a mill enough to give Peter Chaney the land and lumber necessary to build it. Yet, the petition makes clear that the town leaders would not allow Chaney to take advantage of his position in the town. The relative proximity of both mills meant area weavers could expect to get their woolens fulled regardless of the growth in the region's productive capacity.

For more than forty years until 1730, the Chaney and Pearson families continued to operate their mills in the Rowley/Newbury area. In the meantime, the Pearsons built at least one other fulling mill around 1690 in the area

41. Pearson Family Papers: Byfield Mills, Box 1, folder 1, item 1, Phillips Library, Peabody-Essex Museum, Salem, Massachusetts.

of the first. Later, the entire complex would become known as Byfield mills. Peter Chaney gave his son control of the original mill property and a part interest in the fulling mill in 1694. After the death of his father, Peter Chaney, Jr. sold the entire property to one of John Pearson's grandsons, Jonathan Pearson.⁴² From that time on until 1809, the Pearsons retained direct control over all the fulling mills belonging to the original Ipswich and Newbury grants.

The Pearson family's long-term ownership of the Byfield mills complex is significant for its obviously successful employment as a processor of wool cloth from the Rowley, Newbury and Ipswich towns. John Pearson left a large estate of over a thousand pounds when he died in 1693. Benjamin Pearson, the son who inherited the Byfield mills benefitted even more. When he died in 1729, his estate had grown to a value of 2600L.⁴³ Clearly, a considerable volume of domestic textiles flowed through the Pearson mills for them to be so profitable.

Even more important to this study is the survival of at least two original account books from the Pearson mills into the twentieth century. These ledgers, described in an account of Rowley's history, document a

42. Pearson Family Papers: Miscellaneous, Box 1, folder 1, item 1, Phillips Library, Peabody-Essex Museum, Salem, Massachusetts.

43. Pearson Family Papers: Miscellaneous, Box 1, folder 2, items 4-10, Phillips Library, Peabody-Essex Museum, Salem, Massachusetts.

significant portion of the cloth that was fulled in the original mill between 1672 and 1688. Although tradition has it that Pearson kept only those accounts not paid on delivery, the amount of fabric reported in those pages documents an impressive volume of local cloth production.

The sixteen years covered by the Pearson ledgers included over 618 individual accounts. Virtually every Rowley family had an account (104 families) and another five hundred were from towns surrounding Rowley. Over the period covered by the ledgers, approximately 65,000 yards of fine woolen cloth was processed. If the Pearson mill was the only one in operation, this figure would have been impressive enough, but by the 1670s there were at least two others in the Rowley area. Upstream from the main Pearson mill was another also managed by the Pearson family and the Shatswell mill operated in Ipswich by this time.

Consider that the 65,000 yards of wool cloth was just a portion of the overall production of fabric. In nearly every probate reporting cloth goods, linen outweighed wool cloth by nearly three yards to one. This would mean that if linen, linen/cotton and wool cloth were manufactured in the same proportion as they appear in the probates, nearly 200,000 yards of linen would have been produced over the same time period.⁴⁴

44. The Pearson ledgers were described in detail in George Brainard Blodgett, Early Settlers of Rowley,

The productive capacity of New England's cloth industry was the result of complex social and economic connections. An elaborate web of interdependencies, textile production linked genders, generations and households and literally wove New England society together. Magistrates and selectmen created a positive legal and official environment within which cloth could be manufactured. Entrepreneurs such as George Curwin, Peter Chaney and John Pearson linked local neighborhood networks to the larger regional trade system and provided a framework of "warp" resting upon the loom of official sanction. Older women like Widow Babson who directed neighborhood textile networks coordinated the movement of each level of manufacture much like the weaver treadled warp into position and beat the weft threads into place. Youthful laborers, people like Abigail Darling, Samuel Hadley and Benjamin Standly, supported the work each in their own way and became the body of the community fabric. As a result, textile production in seventeenth-century New England supported and maintained colonial social structures even as it sustained and strengthened the provincial economy. For the men and women of early Massachusetts, the making of textiles was neither a simple nor a trivial endeavor.

CONCLUSION

The production of textiles in New England was more than just an occasional activity sandwiched in between the more important chores of governing, farming and birthing. Following cloth-making traditions developed long before their arrival in New England, colonists adapted Old World traditions to a New World setting. Colonists who arrived in New England with textile skills were invaluable in developing a domestic industry and training the next generation of cloth-makers. A lack of available hired labor did not deter them; the larger and healthier families of New England provided an ideal labor pool. New England's terrain, although not exactly like that left behind, provided a more than adequate basis for sheep and flax agriculture. More to the point, the considerable everyday textile needs of the average seventeenth-century household far outstripped most families' ability to purchase imported goods. In a cash poor society, domestic manufacture of cloth made sense. So New England's demographically changed, but culturally rigid, people worked diligently to produce most of the textile needs of their homes. Although most of the cloth was consumed locally, the domestic textile industry made an extremely important contribution to the colonial economy at large.

Equally significant was the effect that textile production had on the social development of seventeenth-century New England. The rise, or perhaps re-establishment, of intricate and extensive networks of a domestic textile industry among colonial households drew New England families together into a complex web of interdependency. Merchants, housewives, farmers and their children shared in the production and distribution of fibers, yarn and woven cloth. At the same time, domestic textile production and its exigencies cemented household, neighborhood and regional relationships.

Recently, social historians have come to view New England as a society fragmented into sub-cultures determined by household status, gender and age. These may well be artificial constructions created by historians rather than by colonial people. When observed through the lens of textile production, New England's people seem more often to have shared rather than divided their lives.

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