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**THE WHITAKER MILL, 1813-1843:
A CASE STUDY OF WORKERS,
TECHNOLOGY AND COMMUNITY
IN EARLY INDUSTRIAL PHILADELPHIA**

IN 1813 an English immigrant named Henry Whitaker began construction of a mill village at Cedar Grove, on the Tacony Creek in rural northeast Philadelphia County.¹ At this time, Philadelphia was the largest industrial center and major producer of textiles in the United States. But because Philadelphia's early textile mills employed water rather than steam power, they were located not in the city itself nor along the Delaware River. Instead mill owners settled first on the rural fringes of the city in search of swifter rivers and streams,² including even as minor a source of power as the Tacony branch of Frankford Creek. Despite the emergence of a few textile giants such as Joseph Ripka in Manayunk, the bulk of the early textile mills, including the Whitaker enterprise, were quite modest in scale, limited by access to both water power and capital.³

However, despite the Whitaker mill's characteristic size and location, the history of its first three decades cannot be considered a microcosm of the entire Industrial Revolution, nor even of the early Philadelphia textile industry. This was a time of experimentation, when technology, the organization of production, worker participation, ideological frameworks, and political and social controls assumed a variety of changing forms. The Whitaker mill is but an example of one early industrial situation and of one set of responses to more widely felt changes and events.

Throughout the following outline of the Whitaker mill's early organization and development, the emphasis is on the position and

perspective of the worker within the mill community. But the lives of workers and mill owners were often intertwined at Cedar Grove. Thus, much of this study deals with the shared experiences which bound the workers and their employers together as well as with the changes in technology and production which led to increasing strains within this small, rural mill community.

The fact that the Whitaker mills were owned by the same family and operated on the same site from 1813 to 1970 favored the survival of unusually extensive company documentation. A variety of original records dating back as far as 1819 and referring to events as early as 1809 still exist. Most important are the paybooks and day books which identify the specific individuals who worked in the mill. The weavers are the best documented group of workers; fragmentary evidence survives from as early as 1819, and from 1825 on, the record appears complete. And the systematic records of "day workers"—children employed in the card and throstle rooms as well as skilled workers and management—date from 1838.⁴ Because these workers are identified by name, they can be traced to church records and to the United States manuscript censuses. Thus, company records make it possible to reconstruct the composition and history of the labor force as well as the business and technological history of the mill.

The area around Cedar Grove was first settled in the 1680's by English and German immigrants. Agriculture was the primary occupation except in the village of Frankford, located a few miles downstream from Cedar Grove on the main road from Philadelphia to New York. However, even in the earliest decades of settlement, small-scale industry existed in the forms of brickmaking and iron and glass manufacture. By the Revolutionary War there were a number of grist mills on the Frankford and Tacony Creeks, and in 1803 Stephen Decatur, father of the Commodore, converted one of the grist mills into a powder mill.⁵

Then in 1809 Englishman Samuel Martin began production of woolen blankets in a textile mill on Frankford Creek. Martin's father was Sir Richard Martin, Member of Parliament, one of the largest linen manufacturers in Belfast. Samuel Martin moved in 1792 to Manchester and in 1805 to Bolton-le-moors (both in the textile district of England) before coming to Frankford. Despite the early success of a government contract in the War of 1812, Samuel Martin decided to return to England in 1828, after a fire had destroyed his factory. However, three of his nine sons remained in America; one son, James Martin, opened a dye works in nearby Richmond.⁶

By the 1820's at least seven other textile firms were operating in the Frankford vicinity. Four of the seven, including the Whitaker mill, are known to have been established by other immigrants from the Manchester-Bolton textile district. Often the mill workers were also immigrants, and in fact, one workers' settlement in the area was known as "Little Britain." When Samuel Pilling came from England, he brought his labor force with him; Pilling and Bolton was reported to be the first American block-printing establishment, printing and finishing calico. John Large, another English-born entrepreneur, began his textile operations about 1820. And in 1821, Jeremiah Horrocks, from Manchester, England, founded the Frankford Dyeing, Bleaching and Finishing Works. Horrocks was a member of the Bible Christian Church, a vegetarian, a noted Temperance advocate, and a business associate of the Whitakers.⁷

Three other cotton and linen mills, employing from nineteen to ninety-one hands each, were listed in the 1820 census for the village of Frankford and for Oxford and Bristol townships: the Crescent mill just upstream from the Whitaker property, plus the mills of Stephen Sicard and of Gillingham and Chapman.⁸ Additional spinning, weaving and dyeing establishments were added in the 1830's and 1840's.⁹

During the early nineteenth century other industries also appeared in the borough of Frankford and along the Tacony-Frankford creeks. The Frankford Arsenal was founded in 1816, the same year Isaac English arrived from New Jersey to open his pottery business. There were also two tanneries and a brewery listed in the 1820 census. Notable later additions included the machine shop where James Brooks built a locomotive in 1835 and an iron works established by William and Harvey Rowland in 1840.¹⁰

Despite this industrial growth, Oxford and Bristol townships retained much of their rural character. By the 1840 census, the total population for the two townships was 5,752, of which 41% lived in the borough of Frankford. For the 3,376 persons living outside the village, agriculture was the most frequently listed occupation, although trade and manufacture were not too far behind.¹¹

The history of the Whitakers in America begins in 1807. According to the family tradition, Henry Whitaker owned a mill in Rockdale, England, and wanted to expand. Discouraged by the high taxes resulting from the Napoleonic Wars and attracted by the new and seemingly limitless possibilities for industrialization in America, in 1807 Henry Whitaker made an exploratory voyage to the United States. He

apparently decided that American conditions were favorable since in 1809 he and his entire family—wife, eleven children, three sons-in-law, and one granddaughter—sailed from Portsmouth to New York on the ship “Susquehannah.”¹² After a winter in New York, the family spent about a year in Frankford at Chalkley Hall, the site of a grand Georgian mansion owned at that time by Samuel Allen. This was the year Samuel Martin commenced his textile operations, but there is no documented connection between Martin and Whitaker. The Whitakers then spent two years in Hudson, New York, where Henry Whitaker manufactured velveteens.¹³

Finally in October, 1813, Henry Whitaker settled permanently on the Tacony branch of Frankford Creek; here at Cedar Grove he purchased thirty-eight acres of the Trinity Church glebe lands for the sum of two thousand dollars plus an annual rent of one hundred twenty dollars. Work began at once on the first English-style mill houses and on the Whitakers’ “mansion” house. The Whitaker family was able to move into the homestead by Christmas, 1813. Other construction soon followed: the original mill building in 1814, the dam and water wheel in 1815, and the dye house in 1815 or 1816.¹⁴

It appears that Henry Whitaker modeled his establishment on one type of factory situation common in more remote regions of England during the early years of the Industrial Revolution. These rural or village textile mills were located on streams which supplied water power; the mills drew their labor force from scattered, self-employed hand-loom weavers and from the agricultural population in the vicinity. Sometimes these rural English factories were part of a large country estate where mill workers could be occupied in periods of slack trade.¹⁵

The early Whitaker enterprise was a similar combination of textile manufacturing and agriculture. A portion of the mill’s labor force was drawn from local farm households, as will be discussed below. Furthermore, from the mill’s earliest years until well into the twentieth century, company records indicate that a working farm was an integral part of the family business. Account books contain frequent references to purchases of livestock, such as the payment 4 November 1836 of thirty-four dollars to Charles Schoche for a cow and calf.¹⁶ Henry Whitaker increased his land holdings as adjacent parcels became available; and his son-in-law, Richard Hall, owned another farm adjacent to the mill.¹⁷ And throughout the first half of the nineteenth century, the day workers’ paybooks show that men employed as agricultural laborers also performed construction and repair work at the mill and even became skilled workers or supervisors in the mill itself.

However, the core of the business was the mill. Family tradition states that the mill was built both to spin cotton and to weave fabric,¹⁸ but judging from contemporary records, it is more likely that, to begin with, spinning alone was handled inside the factory walls. Even in 1820, the manufacturers' census listed no women employees, but included four men plus seventeen boys and girls; the machinery consisted of a cotton picker, a double-blowing machine, nine carding engines, five throstles, three mules, a winding machine and two warping mills.¹⁹ Thus, both the composition of the labor force, with its emphasis on unskilled child labor, plus the selection of machinery indicate that spinning, but not weaving occurred at the factory. A weavers' paybook from 1820 and 1821 supports this conclusion. The accounts are fragmentary and disorderly, but they show that raw materials were consigned to weavers and then the finished goods returned. Some weavers have "addresses" after their names: notations such as "Frankford," "Kensington," "Philadelphia," or "Green Street."²⁰

Business during the mill's first decade was disappointing. At the time Henry Whitaker built his mill, American textiles were benefiting from the disruption in European trade caused by the Napoleonic Wars. Yet no sooner was the Whitaker mill ready for operation than the war ended and European goods once again flooded the American market. In 1820 Henry Whitaker reported to the census taker: "Business has been very dull these 4 or 5 years or all the time since the factory was built, but at present it is growing better and the demand for the articles is considerably increased."²¹ This optimism was largely, though not completely, justified in the following decades.

The mill began to expand its operations in the early 1820's. The exact timing is not certain, but by 1824, when pay records for weavers became somewhat more systematic, both the spinning and weaving processes were housed inside the mill. Remarkably, both hand and power looms were in use at the Cedar Grove mill in 1824. Ephraim Brown, an experienced hand-loom weaver, was the first to work at the power looms, sometime before 8 January 1824. Brown's initial experiments were not always successful, and such comments as "bad," "coarse," or "twisting" are often found after his account.²² But eventually power-loom technology was mastered, and the proportion of hand-loom weavers declined steadily until the end of 1826, when the hand loom appears to have been completely phased out.²³

This switch to power-loom machinery resulted in important changes in the labor force. First of all the number of weavers employed in the mill increased markedly. In 1825, from three to eight weavers had been

at work at any one time; by 1829, five years after the introduction of power looms, the range was from twelve to seventeen weavers employed at any one time.

The other outstanding change was in the sex composition of the work force. The proportion of female weavers increased sharply once the power loom was introduced. It apparently was considered appropriate for skilled males to set up and perfect the machinery as Ephraim Brown had done, but once operation was fairly routine, power-loom weaving became women's work. In 1820 only one of the sixteen weavers listed in the company accounts was female. But during the early years of power-loom operation, 1824 through 1827, at least 22 (58%) of the 38 weavers on the payroll were female.

It is evident that this increase in the proportion of women was due directly to their employment at the power loom. From 1824 through 1827, only one of the twelve weavers who worked exclusively at hand looms was a woman while *no* known male was employed solely at the power loom. But nineteen females and three weavers of unspecified sex worked exclusively at the power looms. Only four weavers, two males and two females, operated both the hand and the power looms.²⁴

Thus the advent of power-loom technology shifted weaving production from the home into the factory and also led to a dramatic change from primarily male to primarily female weavers. These trends would continue at the Whitaker mill. By 1839, the year of peak employment in the 1813–1843 time period, from 27 to 37 weavers were employed at any given time; 44 workers held these 37 positions that year, and 41 (93%) of them were female.²⁵

In 1831, Henry Whitaker, Sr., aged sixty-eight, sold the business to his son William for eighteen thousand dollars.²⁶ Although the elder Whitaker officially retired at this time, he lived on the premises until his death in 1849, and it seems likely that his presence was felt throughout the 1813–1843 period. Henry Whitaker's recent advances in technology and expansion of the labor force were continued under the leadership of his sons and grandson. William Whitaker soon moved to increase production through the installation of additional power looms. In 1832, the factory was closed for the month of November so that the water wheel could be renewed and weaving capacity expanded from forty to fifty-six looms, allowing a maximum employment of twenty-eight weavers.²⁷ However, at this point, the Whitakers appear to have exhausted the potential water power at the Cedar Grove site.

When the Whitakers first built the dam, there was a fall of only seven or eight feet, significantly less than the ten to fifteen foot fall usually

considered necessary to drive a water wheel. In fact at least one entrepreneur, a Capt. Towers, had turned down the opportunity to purchase the Cedar Grove site because, as he later explained, "I did not think there was sufficient [fall] to justify me in building a mill."²⁸ By 1816 Capt. John Towers had chosen instead to settle at Flat Rock in Manayunk where he built two mills.²⁹ And by 1828, Henry Whitaker became involved in a legal dispute over water rights with the owner of an upstream mill when George McCalmont brought suit against Whitaker in the Supreme Court for the Eastern District of Pennsylvania.³⁰

Thus it seems likely that the Whitakers had reached the limits of their water power capacity with the expansion to fifty-six power looms in 1832. And it is not surprising that during the next three years, William Whitaker became involved in plans to install a steam engine to supplement the available water power. However, the use of steam power was still uncommon in Philadelphia area textile mills.³¹ Therefore, in 1833 William Whitaker made an extended trip to New England, visiting the Slater Steam Mill in Providence, the Tremont Mill, Merrimac Mill, Lawrence Mills, Jackson Mills, Suffolk Mill and also George Whyman's carpet mill.³² The purpose of this journey was made explicit in a letter of introduction written by a Dr. Brown to H. N. Slater:

This will introduce to thy acquaintance the bearer William Whittaker [sic] a respectable cotton manufacturer of this neighborhood and one of our consignours. He visits New England with a view of purchasing machinery, & knowing that you have formerly carried on the business of casting etc. at the steam mill, we thought you could afford him some information. Any facilities afforded him in accomplishing his object will confer a favor upon us. We believe any contract he might enter into would be punctually complied with.³³

Following this trip, William Whitaker made several important purchases. In 1834 he bought four throstles of 108 spindles each plus six power looms from Alfred Jenks.³⁴ Jenks had arrived in Philadelphia in 1810, after having been employed at Slater's mill in Providence; by 1819-1820, Jenks had settled in the Bridesburg area where he soon established himself as a major manufacturer of machinery.³⁵ Then in 1835 William Whitaker purchased a steam engine from James Flint for \$413. Flint's location in 1835 is uncertain, but in 1832 he had been active in the Brandywine area, where he manufactured iron castings for cards and drawing frame heads for the Riddles at Rockdale.³⁶ At the same time the steam engine was purchased, the Whitakers also paid

\$47.59 for various castings, pipes and other parts from Anthony Davis at the People's Works in Kensington.³⁷

So it was that, by October 1835, the combination of water and steam power made possible the operation of seventy-four looms and the employment of thirty-seven weavers. From this date through 1839, and even into 1840, the weaving room operated at or near full capacity—even after the Panic of 1837 when the resulting depression had disastrous effects on many other establishments.³⁸

Throughout these early years, although the Whitaker mill had produced a variety of fabrics, their most outstanding achievement was the first production of bed ticking in the United States.³⁹ Ticking first appears in the power loom production records in September, 1827, and a sample piece still survives at the Eleutherian Mills Library.⁴⁰ In the 1820's, before embarking on the manufacture of tickings, the mill had produced twist, shirting, sheeting and muslin. Later products included satin cord, corduroys, drillings, Canton flannels and other textiles, but for decades the mill's mainstay continued to be ticking of various types: 7/8 and 4/4, Oxford, Susquehannah, Tacony, Neshaminy, Orange and Georgia. In fact, during the five years after the Panic of 1837, the Whitaker mill produced very little except ticking, and this specialized production may have been the key to the mill's survival during these depression years.⁴¹

Before the Panic of 1837, the mill's most serious crises had been limited to periodic fluctuations in water levels, sometimes causing either flooding or insufficient water power, and to the variations in market demand which affected hiring practices and the length of the work week.⁴² But starting in 1837, the Whitakers and their workers had to cope with the strains caused by a series of internal and external crises.

The initial impact of the Panic of 1837 was minimal. The piece rate paid to weavers for 7/8 ticking, the mill's biggest product, fell from 70¢ to 60¢ per 41 or 42 yard cut. But the piece rates for other textiles held steady until 1839 or 1840, even though their production fell. And the number of weavers employed actually increased so that by 1839 from 27 to 37 workers were at work at any given time. Management and operatives also fared reasonably well; their numbers also increased until 1839 and they were spared pay cuts until 1842.⁴³

The situation at the mill began to deteriorate after the sudden death of William Whitaker on 10 September 1839.⁴⁴ At that time title to the factory passed to William's younger brother, Robert, then aged 39. However, the day-to-day management of the mill was increasingly in the hands of William Whitaker, Jr.—grandson of Henry, son of John, and nephew of both Robert and now-deceased William Whitaker, Sr.

Young William was already superintendent of the mill and would eventually take over the entire business.⁴⁵

Robert Whitaker and his nephew William Whitaker, Jr., faced a number of serious problems during the next few years. On 20 February 1840 the mill experienced a boiler explosion, one of the hazards of steam power. None of the workers was seriously injured, but the factory had to be shut down for four days while repairs were made. During the early months of 1840 the mill also suffered from a business slump and a resultant gradual decline in employment, especially among weavers. Then in June 1840, four weavers were laid off and six others reassigned to different looms when ten double looms were "stopped and the drum uncoupled. The business is not good enough to run by steam. These being more than the water wheel will run." By autumn, some weavers were rehired, but even in January 1842, only thirty-one weaving positions were filled. The piece rate for 7/8 ticking fell to 50¢ a cut by the end of 1840, and piece rates for other textiles were lowered as well. None of these rates had improved by the spring of 1842.⁴⁶

Finally, in March 1842, the Whitakers instituted across-the-board pay cuts, leading to a strike by almost the entire labor force. The workers returned to the mill, at reduced pay, in April and May. The business would survive and eventually flourish, but the early 1840's were not flush times.⁴⁷

In 1844, after this series of setbacks, Robert Whitaker decided to sell the factory machinery and stock as well as the farming stock to his nephew for the sum of \$14,543.⁴⁸ William Whitaker, Jr., was only thirty-one years old when he took over; despite his youth and the perilous times, by 1856 he would have amassed enough resources to purchase his Uncle Robert's last share of the business—the land, and thus gain complete control of the Whitaker mill.⁴⁹

Whitaker family involvement in the mill during its first three decades was even greater than this history of ownership and management indicates. Examination of the first three generations of Whitakers and their in-laws reveals extensive and diverse family participation. Henry Whitaker appears to have had enough capital to initiate the business, but not sufficient wealth to permit the family to sit back and enjoy the profits. Success depended on the employment of family skills and labor in the production process as well as in mill management.⁵⁰

Beginning with Henry Whitaker's wife, née Sarah Stott, it seems a highly unlikely coincidence that at least eleven Stotts were employed by the Whitakers between 1820 and 1843. Nathan Stott first appeared in

the company records during the early 1820's when he worked not only as a weaver, but also at quarrying stone, digging a foundation and well, and baling sheeting. In 1839 Nathan Stott appeared sporadically in the paybook with such notations as "at the dam" or "N. Stott work mowing and potatoes and laboring."⁵¹ The 1840 U.S. Census listed him as a lone male, age thirty to forty, working in agriculture, and living in the mill village. From 1840 through 1842, the paybooks record two other Stott households, headed by John, an engineer, and James, a spinner in the throstle room. These two households also supplied three female weavers and five young card and throstle room operatives.

Eleven of Henry and Sarah Whitaker's twelve children are believed to have accompanied them to America. Eight of these offspring have left some indication of involvement with Cedar Grove. Two daughters and their husbands have left evidence of their presence only in the earliest years. This evidence is most tentative for Mary, the eldest daughter, who married a Cartwright; the 1819-1823 day book has an entry for a weaver named Matthew Cartwright. Another daughter, Sally, was accompanied by her husband John Butterworth when the family left England in 1809; a Mr. John Butterworth and a Mrs. Butterworth are listed in the accounts from June 1819 through November 1821.⁵² A third daughter, Betty, married Englishman Richard Hall and they operated a farm adjacent to the Whitaker mill.⁵³ It is also possible that the remaining daughter, Judith, was the same Judith Whitaker who married Benjamin Rowland at Trinity Episcopal Church in 1833.⁵⁴ A Margaret and a Maria Rowland worked as weavers in the Whitaker mill for several months of the following year, making this possibility even more intriguing, but there is no firm proof.

Three, and possibly four, of Henry Whitaker's sons were present at Cedar Grove. A James Whitaker was buried at Frankford Presbyterian Church in 1822, but it is doubtful that this man was indeed the James Whitaker, son of Henry.⁵⁵ The roles of William and Robert as mill owners after their father's retirement have already been described. John Whitaker, the eldest son, never assumed a position of leadership in the family business. His younger brothers and his son all outranked him even though he seems to have been present at the mill from 1813 until his death in 1852. In 1838 and 1839, John Whitaker, then about fifty-four years of age, was earning five or six dollars a week while his son William received seven and a half or eight dollars a week as mill superintendent for his uncles William and Robert. Three other of John and Nancy Taylor Whitaker's five children are known to have worked as weavers at the power looms: Hannah from 1825 to 1831 (age

seventeen to twenty-four), Mary Ann from 1830 to 1843 (age fifteen to twenty-eight), and Henry from 1839 to 1842 (age fourteen to seventeen).

It is also interesting that, in 1836, William Whitaker, Jr., married Ann Lord, a young and capable weaver from the mill. Ann, born in England, had begun weaving at the power looms in 1829 at age fifteen; she continued to work at the looms off and on until 1842, even after the birth of her first two sons.⁵⁶

Thus the first generations of Whitakers not only owned and managed the mill, they also worked there as weavers and skilled workers. English-born in-laws of the family were also involved both in the mill and in agriculture. And the marriage of William Whitaker, Jr., to Ann Lord indicates that the social distance between manufacturer and employee was not insurmountable in this situation.

By the time of the elder William Whitaker's death in 1839, the physical layout of the Whitaker property was established much as it would remain until the early 1850's.⁵⁷ The plan of Cedar Grove drawn in 1838 includes a four-story stone cotton mill, built in 1814, measuring forty by eighty feet and topped by a cupola with a bell and weather vane. Nearby was a one-story stone building, built in 1834 and measuring eighteen by thirty-six feet, which was used as a counting house in 1838. A dye house had been built in 1815 or 1816 and a bleach house was in operation in the mid-1820's, but the fate of these buildings by the late 1830's is unclear.⁵⁸ Carpentry, blacksmith and machine shops may have been located inside the mill itself. Paybooks from the 1838-1842 period indicate that these activities were conducted at the mill on a regular basis, and the inventory done when William Whitaker, Jr., purchased the property in 1844 lists tools in the machine and blacksmith shops valued at \$300.⁵⁹

The 1838 plan also makes it clear that the property was used for other purposes. There were two stone quarries, one on each side of the creek—the sources of the stone used to construct the buildings on the property. A large barn stood directly behind Henry Whitaker's mansion house, and the fields were nearby. The Cedar Grove farm probably supplied some food items to the mill workers; even in the earliest surviving day book from 1819-1823 there are entries charging workers for flour, veal, corn and wheat as well as for such non-grocery items as shoes and stockings.⁶⁰ The location of the Whitakers' general store operation is not known.

The other buildings shown on the 1838 plan were dwelling houses.

There were at least three and probably four clusters of workers' houses as well as two more substantial dwellings, including the homestead or mansion house. The location of the Whitaker homestead is of particular significance. Unlike many mill owners of the era, the Whitakers did not live high upon the hill, distinctly separated from their employees.⁶¹ Instead the Whitakers lived among their workers, only a few yards distant from the creek and the mill itself. Not until the second half of the nineteenth century would the Whitakers build an elaborate Victorian estate on the hill, dramatizing their rising social position and their increasing detachment from the mill; its workers and the drudgery of textile production.⁶²

The Whitaker homestead was a two-story, one-room deep Georgian house constructed of stone, with a frame addition in the rear. The other substantial dwelling was a thirty-by-forty-nine foot stone house with two stories and an attic, built in 1820. This could have been the home of John and Nancy Whitaker and their brood since there was a notation on 18 February 1820 that "John Whitaker removed to the Frame House."⁶³ Unfortunately "Frame House" and stone house are not the same, so identification remains uncertain.

Regardless of the exact location of John Whitaker's new quarters, the removal of his family from the homestead was no doubt welcomed by all. The 1820 U.S. Census lists seven people in John Whitaker's household as well as six persons, including three males age sixteen to twenty five, in Henry Whitaker's house. Richard Hall had another ten residents in his home. By 1840 the U.S. Census for the mill area lists five members of the Whitaker clan as household heads: Henry Whitaker, John Whitaker, Robert Whitaker, Richard Hall, and William Whitaker, Jr.⁶⁴ But the exact distributions of these households is not indicated on the 1838 survey map.

The workers' houses were built in clusters of four. The cluster to the north of the road appears to have been built first, probably in 1813. Construction was of stone throughout, except for the brick chimneys. Each of the four houses had a cellar, two floors above ground and an attic, plus a one-and-a-half story lean-to in the rear. Rent receipts for these houses can be found in the 1820-1824 records; the houses continued to be rented out to workers by the Whitakers as late as 1970.⁶⁵ None of the workers' houses seem to have had more than one or two rooms to a floor; since it was likely that more than one family usually occupied one house, conditions must have been even more crowded than in the Whitaker households.

The original cluster of workers' houses plus the Whitaker homestead

and part of the barn are still standing today. Unfortunately the houses on the other side of the road have been destroyed, along with the factory buildings.

One building, a chapel, was constructed across the stream from the factory shortly after the 1838 plan was drawn.⁶⁶ As early as 1838 and as late as the twentieth century, the Whitaker mills closed down completely for one day each summer so that the Whitakers and their entire labor force could gather for a combination revival meeting and company picnic. The 1838 "camp meeting," as it was called, was held in Amos Jones' woods; but by 1839 the location had moved to the Whitakers' Cedar Grove Chapel, built for use as a Sunday school, a chapel and also a weekday school.⁶⁷ In May 1839, a subscription was taken up among mill workers to buy benches and a desk. Mary McMillan, a member of a long-time mill family, taught at the Cedar Grove School; her salary was paid by the township—\$150 for 1841 and \$160 for 1842.⁶⁸

Inside the mill itself conditions were not easy, but neither were they as harsh and regimented as they might have been. Starting in November 1839, the pay for day workers was computed on the basis of a twelve-hour day, but a normal work day could run anywhere from nine to thirteen hours in length plus two half-hour breaks. In May 1842, the days were long, perhaps to make up for time lost in the strike; work began at 5 A.M. and continued until 7 P.M. with half-hour breaks for breakfast and dinner, at 7 A.M. and 12:30 P.M. In the winter work would generally begin later, often at 7 A.M., to save the expense of excessive "lighting up."

If the machines broke down, or if water was too low to provide adequate power, or if a freshet swept over the dam, workers were given unexpected holidays—without pay of course. Official holidays included a day and a half at Christmas, and a day each for New Years, Easter, the Fourth of July and the camp meeting. Vacations seem to have been unheard of, but as the paybooks show, it was common practice for workers to stop work for a couple of months now and then, and there seems to have been no penalty for doing so. As long as someone in the family was working at the mill, the Whitakers did not seem too particular about which family members were on the payroll.⁶⁹

It cannot be denied that inside the factory the textile machinery caused constant, overwhelming noise and the air was polluted with dust and foul odors. There were also injuries, but perhaps not as many as one might suspect. The only recorded accident for the 1820–1843 period occurred 3 December 1838. James Russum, a young card room operative, had his "arm hurt in the willow, machines stopped in the card room."⁷⁰ The injured boy was taken to the hospital and never appeared

again in the mill records, even though his family continued at the mill until 1841. As compensation, the Whitakers paid James Russum his wages in full for the month of December—no more.

The organization of workers and of the production process found at the Whitaker mill by the 1838–1843 time period followed the patterns usually found in textile mills of the era.⁷¹ The production process began with the preparation of raw materials and was followed by the spinning of the yarn and then by the weaving of the final textile product.

The process began when the bales of cotton were opened and then cleaned of lumps and debris by machines in the picker house. This task was usually performed by two or three young, unskilled male operatives. At the Whitaker mill there was no separate record for these workers, but the factory machinery included a conical willow, which would have been used for this purpose.⁷² The clean cotton batting went next to the carding room. Carding was the critical stage in the preparation for spinning. The carding engine sorted out the tangled but delicate mass so that the fibers would lay parallel to each other; this had to be accomplished without breaking the long fibers. Once the cotton was formed into a long, loosely twisted rope by the carding machine, it was twisted into roving, ready for the spinning machines. The machinery which produced these rovings was almost completely automatic and could be run by a half-dozen semi-skilled boys and girls under the supervision of the carding room overseers.

At the Whitaker mill during the five years from 1 January 1838 to 1 January 1843, all these preparatory steps—the carding, the roving, and possibly the picker operations—were organized together under the heading “carding.” Between eleven and thirteen young operatives worked under three or four male supervisors at any given time. The machines used by these workers included eight carding machines plus nine drawing heads, a speeder, a stretcher, an eclipse and a grinder for the roving process.⁷³

Once the carding and roving processes were complete, the cotton roving was ready to be spun. There were essentially two different spinning machines: the throstle and the mule. The mule performed intermittent spinning which resulted in a fine cotton yarn suitable for the weft, or filling, of power looms. The throstle spun continuously and produced a hard, coarse yarn very cheaply; this yarn was generally used as the warp threads for power looms. However, the Danforth throstle, a more advanced throstle used in some mills, was capable of making a relatively soft yarn comparable to that produced by the mule.

The Whitakers employed three of the more advanced Danforth

throstles of 108 spindles each as well as five mules of 276 spindles each.⁷⁴ The Danforth throstle had certain implications for the composition of the labor force. If the Danforth throstle replaced the mule in production of a yarn fine enough to be used as the weft in power looms, this throstle would also replace higher paid, highly skilled, male mule spinners with low-paid, unskilled children and their moderately paid supervisors. The result would be fewer jobs at less pay for adult males and more jobs for children.

At the Whitaker mill from 1838 through 1842, the throstle room employed from eleven to thirteen operatives plus one supervisor at any one time. Although the Whitaker mill contained five mules, mule spinners are difficult to identify since all workers not employed in the carding, throstle, or weaving rooms were lumped together in one miscellaneous category at the end of the payrolls. Only three men were specifically identified as working at the mules at any time from 1838 through 1842.

In early textile mills, each mule spinner was usually assisted by a scavenger, a piecer, and a creel tender—all low-paid child labor. Often the mule spinner hired and paid his own assistants, thus enjoying a degree of autonomy and prestige not shared by other mill workers. Unfortunately this hiring practice probably accounts for the fact that the Whitaker records make no mention of the mule spinners' assistants; they are the one group missing from this analysis of the work force.

After completion of the spinning process, the next step was the warping, balling, and spooling of yarn in preparation for use on the power looms. For this purpose the Whitaker mill contained two warping mills and a beaming machine.⁷⁵ There is no record in the paybooks of who performed these tasks, but the work may have been handled by a few adult males found in the miscellaneous category. After warping, balling and spooling, the yarn was bleached or dyed; by the 1830's the Whitakers were sending their yarn out to be dyed.⁷⁶

Finally the yarn was ready for weaving. By the 1838-1843 period, the Whitaker mill's seventy-four double looms made possible a maximum employment of thirty-seven weavers. Two looms shared the same pulley system, thereby requiring fewer weavers and less floor space. However, as business declined after 1838, the number of weavers dropped from thirty-six to a low of twenty-three, recovering to thirty-one weavers just before the 1842 strike.

Weaving was the final step in textile production at the Whitaker mill, but the miscellaneous category of male workers requires some explanation. A few of these miscellaneous employees were skilled craftsmen,

such as boiler menders or carpenters, who were in business for themselves and worked at the mill only for a few days at a time to accomplish some specified task. Other temporary laborers, often relatives of those already employed at the mill, were hired to repair the dam to quarry stone or to perform other heavy labor.

Besides these temporary workers, the miscellaneous group also included from four to ten full-time employees at any time. Some of these were mule spinners, but other skilled workers such as blacksmiths may also have been listed here, along with certain supervisory personnel.

Analysis of the mill's labor force from 1838 through 1842 reveals a number of demographic patterns.⁷⁷ Statistics for the three basic components of the labor force—low skilled operatives, weavers, and skilled or managerial personnel—demonstrate the association of age, sex, and family ties with job assignments, pay levels and persistence. These statistics also illustrate how changing technology had altered the composition of the labor force, straining the workers' family and community ties.

At any one time from 1838 through 1842, the mill employed from 22 to 26 young, unskilled or semi-skilled operatives in the card and throstle rooms (an unspecified number would also have been employed by the mule spinners). Equal numbers of girls and boys were employed as operatives, but girls were somewhat more likely than boys to be assigned to the throstle room; only 17 (41%) of the 41 card room operatives were girls, compared to 22 girls (59% of the 37 workers) in the throstle room. Almost half of the youngsters in both rooms left records of their ages. The range was from between 5 and 10 years to 20 years of age in both locations, but with more emphasis on the lower ages in the throstle room.

Average pay was also lower in the throstle room. Even though the pay scale in both the card and throstle rooms ranged from 75¢ to \$2.00 per week, in 1840 the mean weekly wage was only \$1.35 per week in the throstle room compared to \$1.52 in the card room. Interestingly enough, pay seemed to be more a function of age and experience than of sex.

Compared to the card room, the throstle room, with its extremely low skill requirements, was slightly more likely to employ less experienced, younger, lower-paid, and female workers. But since work in the card room required only slightly more skill than in the throstle room, the labor force of the two rooms was quite similar and often interchangeable. From 1838 through 1842, 14 operatives were transferred from the throstle to the card room while seven moves were made in the reverse

direction. This movement suggests that unskilled operatives were reassigned as the work load shifted, but also that accumulation of experience was more likely to result in reassignment to the card room than vice versa.

During the 1838-1843 period, there were never less than 23 nor more than 36 weavers active at any one time. The weavers were predominantly female, with a wide age range. Only 13 of the 74 weavers employed in this five year period were male, and there were never more than three male weavers at a given moment. Thirty one (42%) of the weavers left some record of their ages; the range is wider than for any other group at the mill. Weavers were at least as young as 13 and as old as 57 years of age, with similar age patterns for both sexes. Most weavers were part of family groups employed at the mill. The nine lone weavers all stayed less less than one year, while the other weavers associated with family groups usually worked for a period of years. One weaver, Mrs. Betty Jarvis, appeared consistently in the weaver pay-books from 1828 through 1842 and beyond.

Since weavers' pay was based on piece rates, weekly income varied widely from worker to worker and from week to week. In 1840 the mean weekly earnings were \$2.85, with a range of about \$1.20 a week for a novice weaver to \$4.65 or more a week for the most skilled and experienced weavers. However, it should be noted that there was a significant drop in take-home pay for weavers in the second half of 1840 when the business decline resulted not only in lay offs but also in shortened work weeks and a cut in piece rates. From January through June of 1840, mean earnings were \$3.15 per week, with a range of about \$1.93 to \$4.65 per week (excluding the exceptional pay period at the time of the boiler explosion). By contrast, the average pay during the second half of the year fell to \$2.51 per week, with a range of \$1.20 to \$3.45 a week.

From 1838 through 1842, three girls from the card room and five girls from the throstle room were promoted to weavers. Only two of these girls left no age record; the novice weavers included girls at least as young as 14 and perhaps as old as 20. These young girls tended to be members of families who were well-established at Cedar Grove. Seven of the eight had mothers and/or sisters who were also weavers, and six had fathers who held skilled or supervisory positions. Only one novice weaver cannot be connected with a family group. All the girls proved to be regular and faithful employees. Only Mary Ann Truman had left by 1 January 1842; her departure occurred when her entire family quit and moved on.

Unlike his female counterpart, a male in his teens found very limited opportunities for advancement at the mill. During the 1842–1843 period, males held barely half as many positions above the level of low skilled operative as did females. Teen-age boys were more numerous than teen-age girls in the card and throstle rooms simply because there was little place else for them to go. Not only were there very few male weavers at the mill, but *no* boys were promoted from the card or throstle rooms to positions as weavers during this five year period.⁷⁸ And chances of attaining full-time skilled or supervisory work were almost as poor. The implementation of the power loom and the Danforth throstle created employment dilemmas not only for the men who had been hand-loom weavers, but also for this new generation of males who had outgrown their usefulness as low skilled and low paid workers.

Leaving aside the temporary laborers, only 12 to 18 men were full-time employees at any one time from 1838 through 1842. These men worked as weavers, as supervisors of the card and throstle rooms, as mule spinners, and in other unspecified skilled or supervisory positions.

Eight men held the three or four positions as card room supervisors, and two men the single position as throstle room boss during this five year period. Compared to the weavers, these supervisors were young; the six men who left records of their ages were between about 18 and 30 years old. Their pay range was wide, from \$2.50 to \$7.50 a week, indicating a variety of skills and responsibilities.

Except for three card room supervisors present only fleetingly after the 1842 strike, the card and throstle room supervisors were all part of family groups employed at the mill for extended periods of time. John Stott and John Schofield were related by marriage to the Whitakers; Stott was kin to Henry Whitaker's wife and Schofield married Mary Lord, kin to the wife of William Whitaker, Jr., in 1839, after he was already a card room boss.⁷⁹ Two McVaughs, Lewis and Stephen, were also supervisors.

The previous work experience of these men is not always known, but seems to have been varied. John Meadowcraft had worked for the Whitakers as a weaver as early as 1828; and although John Schofield's training is not known, his family had been doing hand-loom weaving for the Whitakers in the early 1820's. Henry Barber, son of a weaver at the mill, was signed over as an apprentice at the age of nine by his widowed mother.⁸⁰ Only Samuel Clarke is known to have begun as a card room operative, becoming the lowest paid skilled worker in the card room after "running away" in 1839.⁸¹

Approximately two dozen men were employed as full-time miscellaneous skilled or supervisory personnel from 1838 through 1842. These men were older and better paid than the card and throstle room supervisors. Recorded ages range from 18 or 19 to almost 60 years. Pay varied from \$4 to \$10 per week, again suggesting a range of skills and responsibilities, but at a higher level than was found among card and throstle room skilled personnel.

During this five year period, no one from the card or throstle rooms, not even the supervisors, moved into the category of miscellaneous skilled and supervisory personnel. The day workers' paybook indicates that some miscellaneous personnel had begun as temporary day laborers at the farm or mill. At least five men had once worked as weavers in the Cedar Grove mill. Another nine men came from outside the mill and immediately obtained skilled positions for themselves and work for other family members elsewhere in the mill.

Only three miscellaneous employees can be identified as mule spinners, even though the Cedar Grove mill contained five mules. Mulespinner John Shaw was between thirty and forty years of age and had a wife and seven children when he worked at the mules in 1839 and 1840; three of these children continued to work in the mill even after their father disappeared from the paybook, one in the card room and two as weavers. Abraham Hilton also worked as a mule spinner in 1840, at the same time three of his children were employed in the card and throstle rooms. William Wooley, mule spinner and engineer, made brief appearances in the 1840 records; he apparently had no family with him. The Hilton family had appeared in Whitaker mill records as early as 1819 and 1820, but the origins of Shaw and Wooley remain obscure. As to wages, the only record is for Wooley; he earned \$9 a week—an amount surpassed only by the \$10 a week then paid to William Whitaker, Jr.

But even these men who secured full-time, relatively well paying miscellaneous jobs at the Whitaker mill could not count on steady employment. A few men maintained their positions for many years, but others—even those with other family members regularly employed—worked only sporadically. It is not clear what they did in the off periods; they could have shifted to the Whitaker farm, found employment elsewhere, or simply remained idle.

The turnover of employees in the different categories underscores the position of the male worker.⁸² The mean annual turnover, from 1838 through 1842, for young operatives in both the card and throstle rooms was 1.6 workers per position; but this figure is somewhat inflated by the

inclusion of transfers and promotions. The weavers and the card/throstle room supervisors had the least turnover, 1.3 and 1.2 workers per position per year respectively. However, the economic stress of 1841 and 1842 did have its effects; in 1841 there were 3.5 male weavers hired for every weaving position held by males and in 1842, because of the turnover following the strike, there were two men for every supervisory position in the card room. Overall, the miscellaneous group of adult males had the highest turnover in the mill, 1.8 men per position per year from 1838 through 1842.

Although children and adult females constituted the bulk of the Whitaker labor force, the smaller group of adult males monopolized all skilled and supervisory positions. They also earned more money. However, the adult male's position was precarious as well as superior. Some older, former hand-loom weavers had made a successful transition to skilled and supervisory positions in a modern, mechanized factory. But men in general had to face the painful fact that, as more machines were introduced, the number of skilled and supervisory positions grew more limited. And in times of crisis, such as cutbacks or strikes, the turnover rate for adult males was often very high. If a family wanted to work at Cedar Grove, the male head of the house often had to settle for sporadic employment at lower pay and with less prestige than he would have had as a hand-loom weaver, while his wife and children took advantage of the increasingly plentiful, but lower paying jobs now available. Young men also felt the job squeeze; there were far more limited opportunities for boys than for girls to continue working in the mill when they reached their teens and early twenties.

The nuclear family and its ties by blood and marriage to other Cedar Grove families were crucial organizing factors at the factory and in the mill community. And of course, changing technology and employment opportunities had serious implications for this family orientation.

The prevalence of this family orientation can be illustrated with the cohort of workers employed during the 1840 census year. On 1 January 1840, the paybooks showed a total of 68 workers (26 males and 42 females) at the mill. They were organized in four groups:

Throstle room:

5 male and 8 female operatives
1 male supervisor

Card room:

8 male and 5 female operatives
3 male supervisors

Weavers:

3 males and 29 females

Miscellaneous:

6 males

By 31 December 1840, this labor force had declined to 59 workers (22 males and 37 females); six of the nine lost positions occurred in the weaving room. Of the initial 68 employees, 49 were still present at the end of the year, though eight did have temporary, prolonged absences sometimes as long as several months. The other 19 workers present on the first of January had disappeared from the labor force by the end of December. Another 20 individuals entered the full-time labor force during the year, but eight of these new arrivals had left again before December 31. In general, females, compared to males, were more likely to have temporary absences; males, both oldtimers and newcomers, were relatively more inclined to leave permanently.

During 1840, a total of 88 individuals, including three Whitakers, were listed at one time or another as full-time employees in the pay records. Excluding the Whitakers, 77 of the workers were part of 31 family groups employed at the mill, while only eight people cannot be associated with any mill family. Among the 31 workers' households, maximum mill employment was six persons per household, with a mean of 2.5 mill workers per household. Sixteen family households, about half of the total, had adult males (usually the husband or father) employed in a skilled or supervisory position. In 20 households, 13 of which had no males in skilled or supervisory positions, three men and 30 females were employed as weavers. Thus, out of the 31 households, only two families relied solely on the employment of low skilled, juvenile labor at the mill.

Furthermore, of the 22 families who can be traced to the 1840 U.S. Census, all had a male head of household (although at least one of the missing families was headed by a female). At the Whitaker mill, 13 of these 22 male heads of household were employed in skilled or supervisory positions, although their employment was sometimes irregular. Two other household heads worked as weavers, one in 1839 and the other in 1840; five others were listed by the census as employed in agriculture, although one of these five had once been a weaver. Only one male household head, aged 49, appears to have been unemployed with no clue as to previous employment.⁸³ Thus unlike other textile mill communities with similar emphasis on the employment of females and children, the Cedar Grove community had very few female-headed households.⁸⁴

Judging from the ages given in the census, all but one of the 22

households were built around a husband and wife team. Nine of the 21 wives were weavers during 1840, including four women with children under age five at home. Only five of the 22 households had no children listed; and these appear to have been either newly-weds or else older couples whose children were probably grown.

The average census household consisted of a nuclear family: husband, wife, and a mean of 3.2 children at home (1.9 girls and 1.3 boys). The highest number of children at home was seven; no house had more than five girls nor more than three boys. These figures suggest an unusually low sex ratio of boys to girls. The age and sex distributions among the 22 families found in the 1840 U.S. Census suggest the probable explanation (See Table 1). The sex ratio was normal up to the age of ten. Between ages 10 and 15 the proportion of males dropped significantly; and by ages 15 to 20, the girls outnumbered the boys four to one. It was not until the 20-30 age bracket, when girls would be leaving home at marriage, that the sex ratio returned to some sort of balance.

Employment opportunities at the mill would account for both the low male-female sex ratio and the age distributions found in Table 1. Equal numbers of young girls and boys were hired as unskilled operatives. But in the teen years, boys found little chance to advance their skills and pay at the mill, while girls could gain promotions to the weaving room. In a family with teen-age sons, there was a good chance that the sons would have to leave home at an early age to seek work elsewhere.

The 1840 work force also included eight individuals, employed in a

Table 1
Age and Sex Distribution Found in the Cedar Grove Mill Families
Present in the 1840 Census

Males (Other than Husband)		Females (Other than Wife)	
Age	Number of persons	Age	Number of persons
0-5	7	0-5	7
5-10	8	5-10	6
10-15	8	10-15	13
15-20	3	15-20	12
20-30	3	20-30	4
Total	29		42
		(50-60)	1)

Source: 1840 U. S. Census of Free Population, manuscript schedules for Bristol Township, Philadelphia County (National Archives microfilm reel 489), pp. 188-197, and Oxford Township, Philadelphia County (National Archives microfilm reel 491), pp. 150-158.

variety of positions, who apparently had no family ties at Cedar Grove. Only two of the eight were present at the mill longer than a year; the group as a whole is remarkable mainly for their lack of persistence and family connections.

The family orientation of the mill had multiple implications. As noted, families, not individuals, formed the bulk of the work force and generally proved to be the steadier workers. Some families moved on quickly, but most persisted for long periods, providing the basis of a stable community. A few of the surnames of families present in 1840 are found in mill records from the early 1820's; and even with the incompleteness of pay records before 1838, the mean year of recorded first appearance for the 1840 families was 1833.

Not only did some families have long histories at the mill, a significant number had kinship ties with other mill families. The extensive network of Whitaker children, grandchildren, and in-laws has already been described. This type of family network also existed among worker families. Often brothers, each with their own nuclear-family households, were employed simultaneously at the mill. For example, in 1840 there were three households each of Stotts and McMillans.

Intermarriage was also common. Besides the marriage of Ann Lord and William Whitaker, Jr., at least five other mill marriages took place at Trinity Episcopal Church in the late 1830's and early 1840's.⁸⁵ The Lords outdid everybody else; between 1836 and 1840 they married into the Kay and Schofield families as well as the Whitakers. Most couples were in their early twenties when they married. The effect of marriage on a female's position as weaver was negligible; often there was a lag of several months before the mill pay records switched over to her married name, but no matter what her name, a bride commonly continued to work after marriage.

The mill community was not based only on employment and family ties. Ethnic, religious, economic and geographic origins also contributed to the sense of community at Cedar Grove. Although backgrounds varied, the variations fell into a limited range of patterns.

Throughout the early years of the mill's operation, many workers' surnames—such as Foulkrod, McVaugh, Quicksell, and Walmsley—were names common in the Frankford area even in the mid-eighteenth century. A number of workers present 1838–1843 were identified in the 1850 U.S. Census as natives of Pennsylvania. Often these native-born workers shared the German and English surnames of farmers living near the mill—Walmsleys, Buzbys, Kenworthys, Brouses, and Wilsons.

Not all mill workers were natives, but the immigrants, like many of the ancestors of the natives, came from England and Scotland in all documented cases. For example, Trinity Church tombstones identify Thomas Kay as a native of Royton, England, and Betty Meadowcraft as a native of Lancashire. And the 1850 U.S. Census states that the three McMillan heads of household present in 1840 had been born in Scotland.⁸⁶ Thus the mill workers originated in different places, but had similar ethnic backgrounds.

Religion was another important aspect of life for both the Whitakers and their employees. The Scottish origins of the McMillans and the marriage of a McVaugh in the Episcopal church hint quite strongly that the image of the Irish Catholic weaver is inappropriate here, despite the presence of some Irish-sounding surnames. And during the first half of the nineteenth century, there were no Roman Catholic churches in the mill area; only Quakers, Episcopalians, Presbyterians, Baptists and Methodists have left any record of organized worship services.

Although the Quakers were the oldest denomination in the region, only a few surnames associated with the Cedar Grove mill can be found in the Quaker records, and there is no firm linkage for any individual.⁸⁷ The Frankford Baptist Church can also be discounted. Although it was founded in 1807, its existence was shaky until the 1850's and there seem to be no Whitaker connections in the surviving records.⁸⁸

The names of some mill families may be found in the records of Frankford Presbyterian Church. This church grew out of a German Reformed church dating back to about 1760. The theologies of the German Reformed and the Scotch-Irish Presbyterians were similar, and by 1810 leadership of this Frankford church had passed to the Scotch-Irish. The church flourished until shortly after 1830. From then until a revival about 1850, the church experienced a shortage of new members and frequent changes in pastors.⁸⁹ From 1810 through the early 1830's there are a number of probable linkages between Frankford Presbyterian Church and the Whitaker mill.

Even the name of Whitaker can be found in the records of Frankford Presbyterian Church, but these Whitakers do not fit into the Cedar Grove group. A Robert Whitaker was listed in the pew rents for 1818-1817; James Whitaker was buried at Frankford Presbyterian in August 1822; and a Mrs. Hannah Whitaker was listed as a member from 12 October 1826 to 27 September 1832.⁹⁰ Henry Whitaker of Cedar Grove did indeed have children and grandchildren by these names, but their ages and marital status make linkage with the Presbyterian Whitakers an unlikely possibility. The Frankford Presby-

terian Whitakers were probably members of the only Whitaker household in the area which was not a part of the Cedar Grove community. The 1820 U.S. Census lists Robert Whitaker, over 45 years of age and employed in manufacturing, as head of a household in the borough of Frankford. His household included a female, also over 45 years of age, and six children under age 15.⁹¹ There is no record anywhere of any connection between this Robert Whitaker and the family at Cedar Grove.

St. James Methodist Church, located nearer Cedar Grove, seems a more likely choice for residents of the mill community. This church dates back to about 1815 when Rev. Samuel Harvey, a Germantown preacher, began services. In 1818 the first, quite modest church was built on Tabor Road, not far from the Whitaker mill across Tacony Creek. St. James was a station first on the Germantown circuit and later, after 1840, on the Milestown circuit.

The names of some of St. James Church's founders and early trustees are known; although some were farmers in the vicinity of the Whitaker mill, none are recorded as mill employees. There are no records of church members before 1848; thus it is difficult to assess the involvement of the mill community before that time.⁹²

Church affiliation for the Whitakers and their workers, especially from the 1830's into the 1840's, is best documented in the records of Trinity Episcopal Church in Oxford. This was an old and respected church, formed by dissenters from the Quaker establishment in the 1690's. The church edifice, built in 1711, remains even today a remarkable example of early colonial architecture.⁹³

Henry Whitaker had purchased the land for his mill from Trinity Church, and his family continued to be active members of the church throughout the nineteenth century. About 1890 the Whitakers donated the stained glass window for the chancel. The Cedar Grove workers apparently shared their employers' religion to a remarkable extent—although their reasons for doing so may have been varied. A considerable number of specific individuals from the mill can be found in the records of baptisms, marriages and burials at Trinity Church.⁹⁴

The recorded church-going habits of the 31 households supplying workers to the Whitaker mill in 1840 give a fair indication of the general trend. Over half the households, 16 in all, cannot be traced to any particular church. This may reflect a lack of interest in religion or simply the fragmentary nature of church records at that time; the surnames of many of these 16 household heads are found in the different Protestant churches even though individual linkage is not possible.

Besides the Whitakers, seven of the 1840 mill households were attending Trinity Episcopal Church. Five 1840 households were listed as members of St. James Methodist Church in the earliest records, dating from 1848 and 1849. The household of Andrew McMillan was clearly active at Frankford Presbyterian Church in 1840; two other families had earlier been active in this church, but their 1840 affiliation remains uncertain.

It is unfortunate that there are incomplete membership records and no data at all describing the substance of ritual and beliefs. The presence of the Cedar Grove chapel and the annual, Whitaker-sponsored camp meeting hints at the possibility of "Christian Industrialism" described by Anthony F. C. Wallace, but the data prevents no more than speculation.⁹⁵

Cedar Grove, in marked contrast to urban Philadelphia during the same era, exhibited no evidence of organized labor activity. During the late 1820's and through the mid-1830's, Cedar Grove remained calm even though nearby Philadelphia was experiencing general strikes; movements for such reforms as public schools, improved housing conditions and the ten-hour day; and the agitation of the Working Man's Party, the Mechanics' Union, and *The Mechanics' Free Press*.⁹⁶

When a strike did occur at Cedar Grove in the spring of 1842, two years before the infamous weaver riots in nearby Kensington, the only issue at the Whitaker mill was wages. In Kensington tensions among workers themselves led to the violent riots of 1844; the targets were the Irish, the Catholics and the hand-loom weavers. Similar rioting broke out in the Southwark section of Philadelphia at about the same time.⁹⁷ But in the Whitaker mill strike of 1842, violence, social issues, friction within the work force, and religious and ethnic conflict were all notably absent. The strike appears to have been spontaneous rather than organized, and the entire event was not even mentioned in the Philadelphia press.⁹⁸

The 1842 strike gained the immediate support of almost all the Cedar Grove work force.⁹⁹ On 14 March 1842 the following notation was entered in the day workers' paybook: "Notice given last week of a Reduction of wages of Ten to Twenty perct to Commence 14 Inst but none of the hands being willing to work at any reduction stop the mill for the present." Except for William Whitaker, Jr., only two other workers continued to work, and the pressure on them had its effects. John Clapp, a miscellaneous skilled worker, came in throughout the strike, although one day he arrived drunk and after the strike ended he found it expedient

to stay off the job for several months. The other worker was John Farr, an unskilled card room operative who had been hired "on trial" immediately before the strike; after three weeks as a strike-breaker, Farr disappeared. Three other men, all skilled workers, were hired during the strike; they all left at the end of the strike or soon thereafter.

The outcome of the strike was not a major victory for the workers. The unskilled card and throstle room operatives did return at their former, but already low wages. However, piece rates for weavers were cut 17% and wages for supervisors and skilled workers were reduced an average of 9 or 10%, sometimes as much as 25%. The high degree of worker solidarity demonstrated by the walk-out certainly did not bring the workers great financial rewards.

Not everyone returned at the end of the six or seven week strike. Only the throstle room had a 100% return rate, and the workers here were an unusually tightly-knit group of the youngest and least skilled workers, including many girls. Six of these thirteen operatives were members of their supervisor's family, and the other seven workers had only three different surnames. The rest of the mill was less united by family ties and had more to lose in terms of wages or the chance for advancement. Thus it is not surprising that the other areas of the mill had return rates of only 75 to 85%. And the highest turnover after the strike occurred among the young card room supervisors.

The Whitaker mill community described here is representative of one type of situation not uncommon in the early stages of industrialization. At the Cedar Grove mill, a commitment to the growing use of machinery, encouraged by the limited water power, contributed to the Whitakers' economic survival; but this technology also had less fortuitous implications for the labor force.

The need for water power to run their machines contributed to the Whitakers' choice of an isolated rural location. This location also made it possible for the Whitakers to diversify their production and employment opportunities by adding a farm to the basic textile enterprise. The isolated rural location also encouraged a sense of community at Cedar Grove, both among the workers themselves and between workers and employers. There were also bonds of shared ethnic and geographic origins, common religious affiliations, and ties of blood and marriage. The real sense of community found at Cedar Grove provided a security often sought in different ways by the urban worker.

The Whitakers both controlled and enhanced this community through their key roles in providing housing, a general store, the camp

meeting and the chapel-school. These practices were common in other rural textile mills as well. But the personal involvement of the Whitakers in their mill is especially worth noting. During the mill's first three decades, the Whitakers lived among their employees, sent their own family into the mill as weavers as well as managers, and even intermarried with their workers.

The relatively homogeneous and isolated rural community at Cedar Grove had not yet suffered from the ethnic divisions, the increasingly impersonal nature of factory work and the general urban problems which beset workers inside the city. This absence of the worst aspects of urban industrialization seems to have worked with the sense of community to ease the stresses of industrialization in this instance.

However, technological development contained within itself the seeds of labor discontent, simply because new machines such as the power loom emphasized cheaper, unskilled labor at the expense of the ambitious, skilled adult male worker. And when young men and male household heads could no longer find satisfactory employment at the mill, the family unit of production was endangered. This spelled trouble in a community made strong largely because of its family orientation. The strike of 1842 provides but a hint of the tensions and changes to come.

In the coming decades, as Cedar Grove lost its rural nature, as the factory grew in scale, and as technology further eliminated the need for skilled labor, the Whitaker mill would no longer be a community characterized by a family-centered workforce and a significant degree of shared worker-employer culture. Instead the mill would come to rely on unskilled Irish labor and the Whitakers would move from the mill village to their elaborate new mansion on the crest of the hill. The economic and social gap between the Whitakers and their workers would become an undeniable reality.

NOTES

1. During the first half of the nineteenth century, the Whitaker property, because it straddled the Tacony branch of the Frankford Creek, was located in both Oxford and Bristol townships of Philadelphia County. This area became a part of the City of Philadelphia in 1854. The Cedar Grove site is located where present-day Tabor Road crosses Tacony Creek.

2. Anthony F. C. Wallace, *Rockdale* (New York, 1978), 11-13; Sam Bass Warner, Jr., "Innovation and the Industrialization of Philadelphia: 1800-1850" in *The Historian and the City*, ed. Oscar Handlin and John Burchard (Cambridge, 1963), 63-69.

3. More detailed treatment of textile manufacturing in Philadelphia and of Philadelphia's industrial position within the nation can be found in the following sources: Thomas C.

Cochran, "Philadelphia: The American Industrial Center, 1750–1850," *Pennsylvania Magazine of History and Biography* 106 (July 1982), 323–340; Bruce Laurie and Mark Schmitz, "Manufacture and Productivity: The Making of an Industrial Base, Philadelphia, 1850–1880" in *Philadelphia: Work, Space, Family, and Group Experience in the Nineteenth Century*, ed. Theodore Hershberg (New York, 1981), 43–92; Diane (Jacobson) Lindstrom, "Demand, Markets and Eastern Economic Development: Philadelphia, 1815–1840" (Ph. D. diss., Univ. of Delaware, 1974); J. Thomas Scharf and Thompson Westcott, *History of Philadelphia, 1609–1884* (Philadelphia, 1884), vols. 2 and 3; Philip Scranton, "An Immigrant Family and Industrial Enterprise: Seville Schofield and the Philadelphia Textile Manufacture, 1845–1900," *Pennsylvania Magazine of History and Biography* 106 (July 1982), 366; Sam Bass Warner, Jr., *The Private City: Philadelphia in Three Periods of its Growth* (Philadelphia, 1968), 47–157.

4. William Whitaker and Sons, Inc. Papers for the Cedar Grove Textile Mills, Philadelphia, 1809–1970, Acc. 1471, Eleutherian Mills Historical Library, Greenville, DE (hereafter EMHL).

5. *Directory, Constitution and By-laws of the Business Men's and Taxpayers' Association of Frankford* (1922), 59, 87.

6. George Castor Martin, "Samuel Martin, Proprietor of the first Textile Mill in Frankford," *Papers Read Before the Historical Society of Frankford* 2, no. 5 (1916), 243–244; Scarf and Westcott, *History of Philadelphia*, 3:2318.

7. For a description of these early textile firms see *Directory, Constitution . . . Frankford*, 59; Thomas Creighton, *Frankford: a Good Place to Live In* (Philadelphia, 1909), 4; Dr. William B. Dixon, "Frankford's Early Industrial Development," *Papers Read Before the Historical Society of Frankford* 2, no. 3 (1911), 52–56. The Whitaker Papers contain a number of references to textiles sent to Horrocks for bleaching or dyeing; for example, Day book 1819–1823, Acc. 1471, Box 48, EMHL, notes a 12 March 1823 delivery of drilling to Jeremiah Horrocks to be dyed.

8. 1820 U.S. Census of Manufacturers, manuscript schedule for Philadelphia City and County (National Archives microfilm reel 14), pp. 601–609.

9. Dixon, "Frankford's Early Industrial Development," 56.

10. *Directory, Constitution . . . Frankford*, 59; Dixon, "Frankford's Early Industrial Development," 51, 56; Historical Society of Frankford, ed., *Frankford—a Historical Background* (Philadelphia, 1952), 8–9; *Old Northeast Philadelphia County, 1609–1854* (Philadelphia, 1969), 62; 1820 U.S. Census of Manufacturers, manuscript schedules for Philadelphia City and County (National Archives microfilm reel 14), pp. 601–609; 1850 U.S. Census of Manufacturers, manuscript schedules for Philadelphia County (National Archives microfilm reel 4), p. 397.

11. 1840 U.S. Census of Free Population, manuscript schedules for Bristol Township, Philadelphia County (National Archives microfilm reel 489), pp. 188–198, and for Oxford Township, Philadelphia County (National Archives microfilm reel 491), pp. 150–175.

12. Personal interview with Howard Whitaker, 26 December 1968, quoted in *Old Northeast County Philadelphia, 1609–1854*, 102; R. Chase Whitaker, *Grampa's Stories* (Philadelphia, 1976), 2, 28.

13. Horace W. Castor, "Colonial Frankford," *The Numismatic and Antiquarian Society of Philadelphia* 33 (1946), 72; Dixon, "Frankford's Early Industrial Development," 51.

14. The 1813 deed was entered as evidence and Isaac Livezey, carpenter, testified regarding the details of early construction at the Whitaker mill site during a suit heard in the Supreme Court for the Eastern District of Pennsylvania. See *George McCalmont vs. Henry Whitaker*, Dec. 1828–Oct. 1829, pp. 15–20, Acc. 1471, Box 201, EMHL; also R. Chase Whitaker, *Grampa's Stories*, 3.

15. W. Ashworth, "British Industrial Villages in the Nineteenth Century," *Economic History Review*, 2nd ser., no. 3 (1950), 378–387; Arthur Redford, *Labour Migration in England, 1800–1850*, 2nd ed. (Manchester, 1964), 20–23.
16. Receipt Book, William Whitaker, 1829–1849, Acc. 1471, Box 162, EMHL; R. Chase Whitaker, *Grampa's Stories*, 82.
17. An example of Henry Whitaker's land purchases, from neighbor Jesse Edwards in May 1823, is described in *McCalmont vs. Whitaker*, p. 34, Acc. 1471, Box 201, EMHL. The holdings of Henry Whitaker and Richard Hall are indicated on the 1838 Plan of Cedar Grove, ink and color drawing on linen backed paper, surveyed 1838 by John Deprefontaine, Acc. 1471, Box 201, EMHL.
18. Personal interview with Howard Whitaker, 26 December 1968, quoted in *Old Northeast County, Philadelphia, 1609–1854*, 102.
19. 1820 U.S. Census of Manufacturers, manuscript schedules for Philadelphia City and County (National Archives microfilm reel 14), p. 604.
20. Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL.
21. 1820 U.S. Census of Manufacturers, manuscript schedules for Philadelphia City and County (National Archives microfilm reel 14), p. 604.
22. See the entries for 18 February 1824 and later under Ephraim Brown's name in Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL.
23. Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL.
24. These statistics are based on the Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL.
25. Paybook, weavers' production, 1835–1844, Acc. 1471, Box 132, EMHL.
26. Agreement, Henry Whitaker and William Whitaker, 13 August 1831, Acc. 1471, Box 201, EMHL.
27. Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL.
28. Wallace, *Rockdale*, 127; testimony of Capt. Towers in *McCalmont vs. Whitaker*, p. 15, Acc. 1471, Box 201, EMHL.
29. Scharf and Westcott, *History of Philadelphia*, 3:2317.
30. *McCalmont vs. Whitaker*, Acc. 1471, Box 201, EMHL. It is also interesting that even as late as 1908, the Whitakers continued to use some water power and were concerned about their water rights if the City of Philadelphia built a proposed dam upstream. At that time James L. Whitaker claimed that the Cedar Grove dam and water wheel still provided from thirteen to thirty-four horsepower. See Acc. 1471, Box 201, EMHL, for the undated claim of James L. Whitaker filed in the Court of Common Pleas, Philadelphia County, and entitled "Paper Book on Behalf of James L. Whitaker."
31. Wallace, *Rockdale*, 4, 293, 403.
32. Letters of introduction for William Whitaker, by A. A. Laurence and Co. (undated) and by J. Brown, 5 June 1833, Acc. 1471, Box 201, EMHL.
33. J. Brown to H. N. Slater, 5 June 1833, Acc. 1471, Box 201, EMHL.
34. Bill for \$2,662.80 owed by William Whitaker to Alfred Jenks, 11 April 1834, Acc. 1471, Box 201, EMHL.
35. Scharf and Westcott, *History of Philadelphia*, 3:2317.
36. See Acc. 1471, Box 201, EMHL, for receipts of three payments by William Whitaker to James Flint in 1835: \$200 on September 25, \$150 on November 2, and \$63.69 on December 2; Wallace, *Rockdale*, 155–156.
37. Receipt, William Whitaker and the People's Works of Kensington, 31 December 1835, Acc. 1471, Box 201, EMHL.

38. Paybook, weavers' production, 1835–1844, Acc. 1471, Box 132, EMHL.
39. Personal interview with Howard Whitaker, 26 December 1968, quoted in *Old Northeast County, Philadelphia, 1609–1854*, 102.
40. Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL.
41. Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL; Paybook, weavers' production, 1835–1844, Acc. 1471, Box 132, EMHL; Production books, 1835–1844, Acc. 1471, Box 90, EMHL.
42. Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL; Paybook, weavers' production, 1835–1844, Acc. 1471, Box 132, EMHL; Paybook, day workers, 1838–1844, Acc. 1471, Box 133, EMHL.
43. Paybook, weavers' production, 1820–1835, and Paybook, day workers, 1838–1844, Acc. 1471, Boxes 131 and 133, EMHL.
44. Paybook, day workers, 1838–1844, Acc. 1471, Box 133, EMHL.
45. R. Chase Whitaker, *Grampa's Stories*, 15; Paybook, day workers, 1838–1844, Acc. 1471, Box 133, EMHL.
46. See the entries for 1840 through 1842 in Paybook, weavers' production, 1835–1844, and Paybook, day workers, 1838–1844, Acc. 1471, Boxes 132 and 133, EMHL.
47. See entries for March through May, 1842, in Paybook, weavers' production, 1835–1844, and Paybook, day workers, 1838–1844, Acc. 1471, Boxes 132 and 133, EMHL.
48. Journals, 1844–1859, pp. 1–2, Acc. 1471, Box 26, EMHL.
49. Dixon, "Frankford's Early Industrial Development," 51.
50. Unless otherwise noted, information on the Whitakers has been compiled from these sources. In Acc. 1471, EMHL, the following were consulted: Day book, 1819–1823, Box 48; Paybook, weavers' production, 1820–1835, Box 131; Paybook, weavers' production, 1835–1844, Box 132; Paybook, day workers, 1838–1844, Box 133. The federal censuses include the 1840 U.S. Census of Free Population, manuscript schedules for Oxford Township, Philadelphia County (National Archives microfilm reel 491), pp. 156–157 and the 1850 U.S. Census of Free Population, manuscript schedules for Oxford Township, Philadelphia County (National Archives microfilm reel 820), pp. 49–54. The genealogy in R. Chase Whitaker, *Grampa's Stories*, was also helpful. Additional data on the ages of family members came from the burial records and tombstone inscriptions in *Records of Trinity P. E. Church, Oxford, Philadelphia, 1710–1855*, vol. 12 of *Collections of the Genealogical Society of Pennsylvania* (Philadelphia, 1894).
51. Day book, 1819–1823, and Paybook, weavers' production, 1820–1835, Acc. 1471, Boxes 48 and 131, EMHL.
52. R. Chase Whitaker, *Grampa's Stories*, 2; Daybook, 1819–1823, Acc. 1471, Box 48, EMHL.
53. Plan of Cedar Grove . . . surveyed 1838 by John Deprefontaine, Acc. 1471, Box 202, EMHL; R. Chase Whitaker, *Grampa's Stories*, 2.
54. *Records of Trinity P. E. Church*, 74.
55. Documentation of James Whitaker at Frankford Presbyterian Church and the dubious linkage to the Whitakers of Cedar Grove is discussed in detail later in this article and in footnotes 90 and 91.
56. R. Chase Whitaker, *Grampa's Stories*, 15.
57. Plan of Cedar Grove . . . surveyed 1838 by John Deprefontaine and Cedar Grove Mills survey, 20 November 1873, by E. Hexamer, Acc. 1471, Boxes 202 and 203, EMHL.

58. Testimony of William Whitaker in *McCalmont vs. Whitaker*, p. 31, Acc. 1471, Box 201, EMHL.
59. Journals, 1844–1859, p. 1, Acc. 1471, Box 26, EMHL.
60. Day book, 1819–1823, Acc. 1471, Box 48, EMHL.
61. Wallace, *Rockdale*, 46–47.
62. See photographs in R. Chase Whitaker, *Grampa's Stories*.
63. Day book, 1819–1823, Acc. 1471, Box 48, EMHL.
64. 1820 U. S. Census of Free Population, manuscript schedules for Oxford Township, Philadelphia County (National Archives microfilm reel 109), pp. 69–76; 1840 U.S. Census of Free Population, manuscript schedules for Oxford Township, Philadelphia County (National Archives microfilm reel 491), pp. 156–157.
65. Daybook, 1819–1823, and Paybook, weavers' production, 1820–1835, Acc. 1471, Boxes 48 and 131, EMHL; William DiBenedetto (current resident of one of the original workers' houses), interview by the author, 1 June 1981.
66. Alpheus McCloskey (historian of St. James United Methodist Church), interview by the author, 2 June 1981.
67. R. Chase Whitaker, *Grampa's Stories*, 19–20; entry for 16 August 1838, Paybook, day workers, 1838–1844, Acc. 1471, Box 133, EMHL; clipping from *Olney Times*, 15 April 1965, located in the Scrapbook of Olney History at the Olney branch of the Philadelphia Free Library.
68. Subscribers' List—Cedar Grove, May 1839, Acc. 1471, Box 201, EMHL; Eleanor E. Wright, "Frankford's First Schools and Schoolmasters," *Papers Read Before the Historical Society of Frankford* 1, no. 6 (1908), 123.
69. These details of mill routine are documented in Paybook, day workers, 1838–1844, Acc. 1471, Box 133, EMHL; Paybook, weavers' production, 1820–1835, Acc. 1471, Box 131, EMHL; Paybook, weavers' production, 1835–1844, Acc. 1471, Box 132, EMHL.
70. Paybook, day workers, 1838–1844, Acc. 1471, Box 133, EMHL.
71. The discussion of machines and mill operations which follows is based on Wallace's description in *Rockdale*, 136–147. Data on the work force at the Whitaker mill 1838–1843 was gathered from the following sources in the Whitaker Papers: Paybook, weavers' production, 1835–1844, and Paybook, day workers, Acc. 1471, Boxes 132 and 133, EMHL.
72. This information is found in the inventory done when William Whitaker, Jr., purchased the mill from Robert Whitaker in 1844. See Journal, 1844–1859, p. 1, Acc. 1471, Box 26, EMHL.
73. Journal, 1844–1859, p. 1, Acc. 1471, Box 26, EMHL.
74. Journal, 1844–1859, p. 1, Acc. 1471, Box 26, EMHL.
75. Journal, 1844–1859, p. 1, Acc. 1471, Box 26, EMHL.
76. Day book, 1824–1825, Acc. 1471, Box 49, contains entries for the bleach house operated by William and Robert Whitaker. But in the 1830's, the weavers' production books contain references to goods being sent to other establishments for bleaching and dyeing.
77. Analysis of the 1838–1843 work force is based on these sources in the Whitaker Papers, Acc. 1471, EMHL: Day book, 1819–1823, Box 48; Paybook, weavers' production, 1820–1835, Box 131; Paybook, weavers' production, 1835–1844, Box 132; Paybook, day workers, 1838–1844, Box 133. Also useful were the manuscript schedules for Oxford and Bristol townships, Philadelphia County, in the 1840 and 1850 U.S. Censuses of Free Population. Information regarding ages comes from the censuses and also from the

Records of Trinity P. E. Church. Exact ages could be determined if a mill worker could be positively linked to the 1850 census or to the Trinity Church records. The 1840 census provides only ranges of ages (0–5, 5–10, 10–15, 15–20, 20–30, 30–40, etc.); use of the 1840 census is further hampered by the fact that first names were recorded only for the heads of household. In smaller families, it was possible to correlate individual workers with sex and age range in the 1840 census; uncertain matches were left out of the calculations.

78. Henry Whitaker, son of John, was a weaver off and on from 1839 to 1842. According to his burial record in the *Records of Trinity P. E. Church*, he would have been approximately 14 to 17 years old when he worked as a weaver. However, Henry Whitaker, like all the other Whitakers who worked as weavers, never appeared in the card or throstle room records prior to becoming a weaver.

79. *Records of Trinity P. E. Church.*

80. Apprentice indenture, Henry Barber to William Whitaker, 3 October 1829, Acc. 1471, Box 198, EMHL.

81. Entries for 21 May and 10 December 1839, Paybook, day workers, 1838–1844, Acc. 1471, Box 133, EMHL.

82. Because of the unpredictable frequency and length of absences among the mill labor force, duration of employment is not a viable statistic here. Turnover is defined as the maximum number of workers employed in any one year divided by the maximum number of positions at one time during that year.

83. Twenty-two of the 31 families present in 1840 can be traced to the manuscript schedules of the 1840 U.S. Census of Free Population. Four other families present in 1840 were not employed at the Whitaker mill in June when the census was taken. That leaves five families who seem to be missing from the census count.

84. Wallace, *Rockdale*, especially pp. 36–37.

85. *Records of Trinity P. E. Church.*

86. For names common in the Frankford area see: Horace W. Castor, "Colonial Frankford;" Thomas Creighton, *Frankford: a Good Place to Live In; Directory, Constitution . . . Frankford*; Historical Society of Frankford, ed., *Frankford—a Historical Background; Old Northeast Philadelphia County, 1609–1854*; and various articles in *Papers Read Before the Historical Society of Frankford*, vols. 1 and 2 (1906–1916). Names of the Whitakers' neighbors are found in McCalmont vs. Whitaker and the Plan of Cedar Grove . . . surveyed 1838 by John Deprefontaine, Acc. 1471, Boxes 201 and 202, EMHL, and in the manuscript schedules for Oxford and Bristol Townships, Philadelphia County, 1840 U.S. Census of Free Population. Information on nativity is available in the tombstone records, *Records of Trinity P. E. Church*, and in the manuscript schedules for Oxford and Bristol Townships, Philadelphia County, 1850 U.S. Census of Free Population.

87. *Germantown, Frankford and Stroudsburg Monthly Meetings, 1816–1871* (births, marriages and deaths), Historical Society of Pennsylvania.

88. Rev. G. J. Burchett, *The History of the Frankford Baptist Church, 1807–1898* (Frankford, 1898).

89. John M. Somerndike, *The Presbyterian Church of Frankford, 1770–1920* (1920), 10–32, 57, 67–80.

90. Register, 1801–1911; Pew Books, 1807–1842 (5 vols.); and Interments, 1814–1851 (3 vols.) in *Frankford, Philadelphia, Presbyterian Church Records*, Presbyterian Historical Society.

91. 1820 U.S. Census of Free Population, manuscript schedules for Frankford borough and Oxford Township, Philadelphia County (National Archives microfilm reel 109), pp. 69–76.

92. *Brief History of St. James Methodist Episcopal Church (Now St. James United Methodist Church)* (1926, revised 1979); Alpheus McCloskey, compiler, *Membership File of St. James United Methodist Church*. This membership file is based on circuit and church records dating from 1848 to the present.
93. William Overington, Jr., "Some Data on the History of Trinity Church Oxford" in *Collections of the Geneological Society of Pennsylvania Miscellaneous Records*, 3:161-165.
94. Overington, 3:170; *Records of Trinity P. E. Church*.
95. Wallace, *Rockdale*, 296-397.
96. Leonard Bernstein, "The Working People of Philadelphia from Colonial Times to The General Strike of 1835," *Pennsylvania Magazine of History and Biography* 74 (1950), 322-339; Bruce Laurie, *Working People of Philadelphia, 1800-1850* (Philadelphia, 1980); Richard A. McLeod, "The Philadelphia Artisan, 1828-1850" (Ph.D. diss., Univ. of Missouri, 1971); William A. Sullivan, "Philadelphia Labor During the Jackson Era," *Pennsylvania History* 15 (1948), 305-320.
97. David Montgomery, "The Shuttle and the Cross; Weavers and Artisans in the Kensington Riots of 1844," *Journal of Social History* 5 (1972), 411-446.
98. *Public Ledger*, 1 March to 4 May 1842.
99. The only sources of information on this strike are the entries in the paybooks at the time of the strike. See Paybook, weavers' production, 1835-1844, and Paybook, day workers, 1838-1844, Acc. 1471, Boxes 132 and 133, EMHL.