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A Thread of Evidence: Shaker Textiles at South Union, Kentucky

Jonathan Jeffrey
Western Kentucky University, jonathan.jeffrey@wku.edu

Donna C. Parker
Western Kentucky University, donna.parker@wku.edu

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By Jonathan Jeffrey and Donna Parker

Textile production was one of the many routine tasks performed in the early American home, a practice which continued well into the nineteenth century. Women, relying on their own skills as well as those of their servants and neighbors, furnished their families with necessary fabric for clothing and household use. Those who joined communal groups, like the Shaker converts at South Union, Kentucky, brought their special expertise – such as textile production – to each colony, leading one Shaker historian to remark that "the early Shaker community was but an enlarged colonial household."[1] Thus, Shakers manufactured fabric – linen, silk, and woolens – in about the same manner as most of their contemporaries, only on a larger scale. Though few of their contemporaries left documentation regarding the tedious tasks involved in textile production, the South Union Shaker community, located in Logan County, kept intimate accounts of daily activities through journals, diaries, day books, and correspondence. Surviving Shaker records provide an interesting background for a study of nineteenth-century textile production, specifically, how the South Union sect met its own fabric needs and used the excess for economic gain.

The South Union society was the fifteenth community founded by the United Society of Believers in Christ's Second Appearing. Founded by missionaries in 1807, South Union was the sect's westernmost colony. Committed to communal living, the early converts quickly adopted the doctrines, dogma, and theocratical hierarchy of the sect's eastern communities, although subtle differences existed from site to site. During the Civil War, the Logan County Shakers suffered from constant demand on their resources by both Confederate and Union armies. The community never regained its antebellum stature and, after waning for years, disbanded in 1922.

While endeavoring to be self-sufficient, the Shakers relied on the "world's people" as a market for their products and purchased goods from the world when it proved to their advantage. Most researchers concur that the Shakers "principally manufactured items that they needed and could not otherwise acquire" at reasonable prices. "When someone else began to manufacture an item of equal quality and less expense than the Shakers manufactured, the Shakers would usually stop producing the item."[2] This precedent certainly held true in their textile industries.

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[1] Edwards D. Andrews, *The Community Industries of the Shakers* (Albany, N.Y., 1932), 184.

[2] John M. Keith Jr., "The Economic Development of the South Union Shaker Colony, 1806-1861" (Master's thesis, Western Kentucky State College, 1965), 50.

The belief that the Shakers were totally self-sufficient is one of several common myths about the sect. Like the early American family, the Shakers were self-sufficient out of necessity. But, as technology increased and membership declined, the South Union community became more dependent on the world. Another myth revolves around their supposed rigid division of labor by gender. Men farmed, constructed buildings, and ran numerous industries, while women performed the more domestic chores of cooking, sewing, and washing. Although women dominated the linen and silk industries at South Union, men worked in tandem with the Sisters when needed and were responsible almost entirely for the wool industry.

Some historians also believe routine activity dulled the creativity of communal sect members, but the Shakers used alternating task schedules to relieve tedium. They allowed skilled craftsmen to remain in their preferred work, realizing that "productivity was enhanced by job satisfaction, skill, and experience rather than by an artificial principle of rotation for the sake of fairness." As the number of men declined at South Union and as the community's textile industries, particularly the woolen factory, became more sophisticated, they relied on hired labor, "a practice in fundamental tension with the sectarian principles of the society."[3] When the documentation of three South Union textile industries is examined, these myths are subject to question.

Linen was the first textile produced at South Union. All Shaker communities grew flax, but in the western and southern settlements "flax was an especially important crop, for these communities were heavily oriented to agriculture and agricultural products rather than to manufacturing."[4] Linen was an essential fabric for early settlers; by the late eighteenth century most farmers sowed a patch of flax to supply household needs. In 1810, charter members at South Union collectively gathered twenty-one loads of flax for the community's use.[5] Raising flax and making linen at South Union continued well into the 1840s, when commercial linen became abundant and was cheaper and easier to purchase than home-manufactured cloth.

Both sexes cooperated in the labor-intensive production of linen; many stages required a general turnout of members. The South Union Shakers grew flax at the main community and on two outlying farms. They generally sowed thirty acres of flax; however, one year they planted one hundred acres. At harvest time, Sisters "pulled," or uprooted, the mature plant to maximize the length of its fibers. Records indicate in 1818 that, "All the Sisters who are able turn out to pull the Flax – Cheerful hearts &

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[3] Stephen J. Stein, *The Shaker Experience in America: A History of the United Society of Believers* (New Haven, Conn., 1992), 154.

[4] Beverly Gordon, *Shaker Textile Arts* (Hanover, N.H., 1980), 36.

[5] [South Union Shaker] Record A, 1807-1836, 12 October 1810, Manuscripts Collection, Library Special Collections, Western Kentucky University (hereafter WKU).

willing hands does up the job." Women's role in the harvest prompted South Union's journal keeper to comment, "How could we get along without Sisters?" Harvesting the flax in the humid Kentucky summer was a hot and tiring job. Eldresses Molly and Mercy provided the Sisters some relief from their toil in 1818, when they "went out to the flax field (30 acres) & gave all the sisters a drink of wine – lit our pipes & took a union smoke!"[6]

After threshing, the Sisters spread the flax in the fields to rot (ret) the plant's tough outer shell. Like hay, flax had to be gathered at the right time to prevent excessive deterioration. "Taking up" the flax sometimes justified working on the Sabbath, a practice frowned upon by the community leadership. The Shaker journalist records a July 1818 event: "Flax lifting Sabbath infringement – The Brethren turned out this Sabbath day & lifted, bound & hauled in 3 acres of flax – The excuse for this breach is that the flax is sufficiently rotted & should rain fall on Monday the crop would be ruined." While copying the original South Union journals for posterity in 1871, Elder Harvey Eades added the commentary, "some excuse better than none."[7]

After the plant rotted and dried, a manually operated flax brake broke and crushed the plant's tough stem. To remove the remaining stem from the fiber, workers scutched or swingled the flax by placing the broken stems over the end of a board and striking the shock with a wooden knife. Shakers considered scutching sixty-five pounds of cleaned flax a good day's work. Some Shakers seemed to excel at the job: "Big days work – David Barnett (colored Br. [Brother]) scutched 130 lbs of cleaned flax from the Break to day – more than doubled the best days work of others – The *flag for Dave*."[8]

The initial processing completed, the long glossy hanks of flax were hand combed, or hackled, to separate the tow (short fibers) from the more prized line (long fibers). Kentucky Shakers experimented briefly with mechanized hackling, but their efforts proved as unsuccessful as the "world's" because machines broke the prized line fiber. In 1826, Shakers John D. Shaw and Robert Johns built a "flax dressing machine" which produced "only tolerable" results.[9]

After hackling, the flax fiber was ready for spinning, weaving, and finishing. Shakers reserved finer linen thread for clothing, household sheets and pillowcases, towels and washcloths, mattresses, quilts, coverlets, curtains, table linens, bread cloths, strainers, cheesecloth, ironing cloths, and bandages. The "tow" produced a rough thread used for feed bags, twine, mopheads, work clothes, rope, rugs,

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[6] Record A, 30 June 1818, 29 October 1832, 1 July 1818.

[7] Ibid., 12 July 1835.

[8] Ibid., 29 April 1829.

[9] Ibid., 16 May 1826; in 1848, the South Union society paid hired laborer Thomas G. Gouch [Gooch] $22.00 to make three "flax hatchels," indicating they used the traditional method of hackling at that time. [South Union Shaker] Society's Account Book, 1844-1860, 19 August 1848, II:B-83 (microfilm), Shaker Collection, Manuscripts, Western Reserve Historical Society (hereafter WR).

laundry bags, and horse blankets. Shakers reserved fine linen for the Society's own use and bartered the tow for bed ticking, domestic, flannel, muslin, cambric and some silk as well as foodstuffs and household goods such as tea, sugar, wine, soap, buttons, and dishes.[10] In a barter marketplace, "tow" linen allowed the South Union Shakers to trade a basic commodity with the world's merchants.

In the early years, the Sisters were responsible for many stages of flax and linen production; the Brethren and hired hands performed the more strenuous tasks.[11] By the 1830s, men and women shared equally in harvesting and occasionally made the chore a festive occasion: "Brn [Brethren] & Sister[s] made a Bee & unitedly pulled the flax to day – 8 acres." At one such event, a Brother quipped, "There is a sweet union thats strong like a chain/'Tis felt in the flax field & saving the grain."[12] Men shouldered more responsibility for the flax crop after the 1830s.

By the 1850s, the Shakers ceased their flax and linen operations. Linen and cotton fabrics were available commercially by 1840 at reasonable prices and by 1855 "it was not sensible to produce even rough tow cloth by hand."[13] Raising flax, once an essential activity for the Kentucky settler, quickly became foreign to the South Union Shakers. Just twenty-two years after South Union stopped cultivating flax, Elder Harvey Eades commented on how alien the process had become. To the community journal's July 1, 1828 entry, "Brn [Brethren] and Sisters having pulled the flax last month – To day unitedly they gathered, bound & hauled it in," he added, "To us now, in 1871 this seems like backwoods life."[14]

Unlike linen manufacture, the South Union Shakers had much to learn when the community undertook the art of sericulture and silk production. Of the Shaker-produced textiles, none compared to their spectacular iridescent silk. The South Union community actively practiced sericulture by the late 1820s. Typical of the knowledge exchange that existed within Shaker circles, two Sisters from the Enfield, Connecticut, community inquired in 1828 about silk production at South Union: "We want to ask one little question, how has Sister Prudence [Houston] prospered with her silk worms as we feel quite interested in this branch, and think it is profitable employment, and should be glad to do more in this way if it was in our power."[15]

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[10] A large number of receipts indicating such transactions is located in the "Shaker-South Union" Collection, WKU.

[11] The Shakers often hired a strong man to break the flax. In 1845, the Society at South Union paid J. Hardin $13.50 to break 2,163 pounds. He was hired the following year and broke 1,875 pounds for $9.37 ½. In 1848, Hardin received a daily wage of 40 cents in addition to $15.64 for breaking 3,728 pounds of flax. 1844-1860 Account Book, 8 February 1845, 1 April 1846, 22 March 1849.

[12] Record A, 23 June 1832.

[13] Gordon, *Shaker Textile Arts*, 37.

[14] Record A, 1 July 1828.

[15] Ruth Farrington and [Meitty] Munsell, Enfield, to Eldress Molly Goodrich, South Union, 20 October 1828, IV:B-19, WR.

Between 1812 and 1815, sericulture began in the western states of Ohio, Kentucky, and Tennessee. Nineteenth-century writers gave Shakers credit for introducing silk production in Kentucky. One writer noted that in Kentucky sericulture "is chiefly confined to those industrious people, the United Brethren, whose steady, persevering labors and intelligence are the surest guarantees of success." By the 1820s, non-Shakers were producing silk in Kentucky; one man even claimed to have experimented with silk worms as early as 1803. By midcentury, Newport and Louisville boasted prosperous silk factories.[16]

Other Shaker communities experimented with silk, but the Kentucky Shakers were particularly adept at the process. Kentucky's temperate climate was conducive to mulberry tree cultivation. While several of the sect's northern communities experimented with the process, an elder admitted: "We incline to think that the northern Sisters would be rather cautious at the handling of silk worms. Not that it is any more objectionable than many other duties in life, but a form of life with which they are not acquainted." When visiting Kentucky, that same elder noted the affection the southern Sisters expressed for the silkworms. He claimed that the Sister "who had charge of them would pick them up & call them 'pretty little creatures.'"[17]

Women dominated the manufacture of silk in Shaker communities, and the popular press extolled sericulture as "especially women's work. It is not degrading. It is neat and extremely interesting."[18] Advocates promoted silk production as women's chance to supplement the family's income. Children provided the labor for menial tasks, such as gathering leaves and feeding the worms.

Cultivating a mulberry orchard was the first step towards producing silk. Because it "produced fine quality silk," the white mulberry (Morus Alba) was the premium mulberry for silkworms. The South Union Shakers planted several varieties of mulberry trees, but occasionally relied on the leaves of indigenous Osage Orange trees. One Sister thought these latter leaves "as good for them as the white mulberry."[19] Though the location of South Union's mulberry orchards cannot be determined, journals indicate that the East and the Center families maintained mulberry orchards near their hen lots.

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[16] L.P. Brockett, *The Silk Industry in America* (Washington, D.C., 1876), 37; *The Silk Grower and Farmer's Manual*, November 1838, 99. Several early American colonies offered bounties to encourage sericulture, which experienced modest success until the American Revolution. The introduction of *morus multicaulis*, a new type of large-leafed mulberry tree, prompted Americans to invest in sericulture. Silk was discussed extensively in agricultural journals and publications written specifically for "silk farmers," which flooded the market in the first half of the nineteenth century. John James Dufour, *The American Vine-Dresser's Guide, Being a Treatise on the Cultivation of the Vine, and the Process of Wine making; Adapted to the Soil and Climate of the United States* (Cincinnati, 1825), 95.

[17] During a visit to the Kentucky Shaker community of Pleasant Hill, Mercer County, Blinn observed several stages of sericulture. Elder Henry C. Blinn, "A Journey to Kentucky in the Year 1873," *Shaker Quarterly* 5 (1965): 115.

[18] *Home and Farm Journal* (15 April 1882).

[19] [South Union Shaker] Journal, 1881-1883, 27 May 1882, V:B-229, WR

Sericulture also required a special house, or cocoonery, to hatch and grow the silkworms. A sanitary building, well ventilated and constructed off the ground, was extremely important to the worm's health. Changes in temperature, uncleanness, smoke, loud noises, and even unpleasant odors killed these delicate creatures. Except for one extant South Union silk house, no evidence was preserved to indicate the location, size, or number of silk houses at South Union.

In 1882, Sisters acquired their silkworm eggs or "seed" from Corinth, Mississippi, and Pleasant Hill in Mercer County. One ounce of silk seed contained about 42,000 eggs. To hatch the eggs, most growers placed them in small, flat boxes kept near a stove. The Shakers avoided premature hatching of the eggs by keeping them in a cooler environment like an ice house.[20]

When eggs hatched, workers placed the worms on shelves known as hurdles. As they grew and matured, the worms were moved to vacant shelves to accommodate their increased size. Worms were fed two or three times a day with tender cut leaves and were particular about their diet.[21] Rain or shine worms had to be fed. Caught without a reserve of leaves, one South Union Sister mentioned a rainy-day harvest: "Raining severely, nevertheless we had obliged to gather leaves for the silkworms."[22]

With proper diet and environment, the silkworm grew and shed its skin four times. The Sisters often noted the molting periods, intrigued by the regularity of the process. Bunches of straw or twigs were situated on the hurdles when the worms were ready to spin. The worms wound themselves into a hollow ball which, when finished, was "about the size and shape of a robbin's egg."[23]

Workers reserved a portion of every cocoon crop for seed, letting those moths emerge from their silky abodes and lay eggs, which were then stored in a dry place away from mice and insects. Using heat, suffocation, and chemicals, attendants killed the chrysalis inside the cocoons reserved for silk, preventing the chrysalis from emerging as a moth and breaking the prized long fibers.[24]

Sisters reeled, or unwound, the silk from the cocoon by tossing a number of cocoons into a vat of hot water and quickly stirring them with a small whisk, until fibers from each cocoon adhered to the broom. A tedious business, reeling required "much skill, tact, experience, patience and watchfulness."

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[20] Ibid., 6 March 1882, 15 March 1882, 20 March 1882. Any source of heat, including the human body, could produce a "warm situation." One writer recalled hatching eggs by putting "a few eggs . . . in a flat snuff box, under the pit of my arm." Other hatched eggs in small bags carried "under their clothes in the daytime, and under their pillows while sleeping.' Dufour, *American Vine-Dresser's Guide*, 99; John Nicholson, *The Farmer's Assistant; Being a Digest of All That Relates to Agriculture, and the Conducting of Rural Affairs; Alphabetically Arranged, and Adapted for the United States*, 2d ed. (Philadelphia, 1820), 340.

[21] One sericulturist observed: "If brown or seared leaves are given silk worms, they will only eat that portion most agreeable. I . . . find their instinctive aversion for improper food surpasses man, with all his wisdom." *Home and Farm Journal* (January 1883).

[22] 1881-1883 Journal, 20 May 1882.

[23] J. Orville Taylor, *The Farmer's School Book* (Albany, N.Y., 1837), 122.

[24] Pleasant Hill silk workers killed the chrysalis by placing cocoons in the sun. Blinn, "A Journey to Kentucky," 125.

Melissa Minter is the only South Union Sister clearly delineated as in "charge of the silk from the cocoons," undoubtedly denoting superior reeling ability. Experts agreed that "the quality of the silk depends much upon the art and skillful management of the reeler." After reeling, workers twisted raw silk filaments together to form larger threads. Workers carded and spun floss and waste silk saved from the broken and deformed cocoons. In 1835, the industrious South Union Sisters "made 10 changeable ones [kerchiefs] out of the floss silk, thus saving all the cocoons.[25]

Weaving silk necessitated special equipment and skills which Sisters taught each other. In 1864, the "rest of the Lot [Sisters] went to the North family to . . . shew Lavina Jones how to warp a tow silk web."[26] South Union records first mentioned specialized equipment for weaving silk in 1836, when Samuel McClelland "got his new Silk Loom into operation" which worked "handsomely." Records do not indicate the loom's design or whether its use continued. In 1853, Sisters wore silk handkerchiefs on a "common shuttle loom." The Sisters felt that the "tedious process," which also involved spinning the silk "entirely by hand," justified the "middling high" cost of the product.[27]

The Kentucky Shakers were known for the fine quality of their silk goods. Sister Sarah Bates from Mount Lebanon, New York, effusively praised the Kentucky Sisters' mastery of the silk:

> I never can dress myself with these Beauties without thinking of the Dear souls who have almost spilt their hearts blood and worked the flesh off their bones: And strained their nerves and Eyes to the utmost to prepare those choice articles. Why! . . . I am struck with astonishment, that your fingers can work such miracles: and keep soul and body together: And if I am ever able to pay the price that Justice would require, it must be hereafter. It may be that I have laid up treasures in Heaven, that I can draw interest from - and measurably reward you yet.[28]

The Shakers had a long tradition of exchanging small gifts, and a Kentucky kerchief was a prized gift indeed. A Sister from the North wrote, "Be assured dear Friends that I have not forgotten your special notice of love [a kerchief] to me . . . [I] express my grateful feelings to you also to all, who have ever worked on the silk." Another Sister added, "We have felt a real burden about your giving away so many of your silk Neck Kerchiefs and here we are receiving another."[29]

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[25] Brockett, *Silk Industry in America*, 87; [South Union Shaker] Diary, 1866, 13 June 1866. V:B-227, WR; Record A, 29 July 1835.

[26] [South Union Shaker] Eldress Nancy E. Moore Journal, 1861-1864, 12 May 1864, WKU.

[27] Record A, 21 July 1836; Ministry, South Union to Ministry, Mount Lebanon, 16 October 1853, IV:A-62, WR. Much American silk fabric prior to the Revolution was inferior to its European counterpart. "Native grown" silks, due to "bad reeling, imperfect twisting . . . insufficient cleaning, & ignorance in regards to weaving & finishing the Goods . . . were fuzzy as well as stiff; the colors did not stand well, and they were defective in luster." After the 1820s, native silk production was perfected. Brockett, *Silk Industry in America*, 28.

[28] Sarah Bates, Mount Lebanon, to Eldress Nancy E. Moore, South Union, 15 August 1869, IV:B-20, WR.

[29] Julia Neal and Elmer R. Pearson, *The Shaker Image* (New York, 1974), 48-49; Mary Whitcher, New Hampshire, to Eldress Betsy and Eldress Nancy, South Union, 31 October 1873, IV:B-21, WR; Mary Whitcher and Sarah Woods to Sisters, South Union, 23 January 1874, IV:B-21, WR.

Although the South Union Sisters fashioned neckwear, kerchiefs, hat bands, bonnets, sewing silk, and garments from their hard-earned silk, it was their kerchiefs that garnered the greatest adulation. Of plain or twilled weaves, Shaker kerchiefs exhibited exceptional craftsmanship. Sisters wove the striped borders by utilizing different weave structures or by inserting colored thread. They also wove handkerchiefs with a "changeable," or iridescent, quality, achieving the illusion by using one color for the warp and another for the filling.[30] Recognizing the quality of an 1873 gift kerchief, New Hampshire Sister Mary Whitcher praised the South Union Sisters:

> A Kentucky silk kerchief – White as whiteness – rich as richness – How can I keep it? Have the dear Ministry given away the last one of theirs? We have worn it – We have shown it. – Brother James thought it looked like Ky. manufacture, not knowing what he had brought us. . . . Oh! dear Sisters, you are once more hand in hand, as well as heart in heart.[31]

Kerchiefs were hemmed with neat, even, and almost invisible stitches. Sometimes the maker stitched her initials in the kerchief's corner, further endearing the maker. While examining her gift from South Union, Mary Whitcher exclaimed, "Ah! We see [the kerchief] marked with a little N this means Eldress Nancy."[32]

Besides presenting silk kerchiefs as gifts, the South Union Sisters sold silk goods locally and to other Shaker communities. In 1853, the Mount Lebanon Ministry "requested to know . . . if we [South Union Sisters] could furnish some handkerchiefs for the Groveland Sisters, & at what price." While visiting the South Union community in the 1850s, David Parker bought a number of kerchiefs for the Canterbury Sisters. An 1859 journal entry noted, "Silk business – has been carried on by the Sisterhood for some time, with tolerable success – they have just taken from the loom a web of 100 yards making 164 fine white pocket kerchiefs for sale - @$12 pr. dozen." In1875, the Sisters were still peddling their silk. An 1881 diary entry revealed that Amber Bass of Auburn, a community three miles west of South Union, "came up to the Office to buy a silk handkerchief. He took 2 on trial." Although an important textile industry at South Union, silk production was far too labor-intensive to prove cost efficient.

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[30] 1861-1864 Journal, 23 February 1864. Extant Shaker kerchiefs of rose, lavender, purple, and white make up the bulk of the museum collections at Shakertown at South Union and the Kentucky Museum at Western Kentucky University. In 1869, Sarah Bates of Mount Lebanon, New York, wrote to Eldress Nancy that she was "fitted out for nice silk Handkerchiefs, of many qualities and many colors. One White, three mixed colors Red blue &c and mostly by your hard labors, at Pleasant Hill and South Union." One striking example is a dark purple kerchief made of blue and red thread with striped borders of red and green. Sarah Bates to Eldress Nancy E. Moore, 15 August 1869.

[31] Mary Whitcher to Eldress Betsy and Eldress Nancy, 31 October 1873.

[32] Ibid.

Though the Sisters marketed silk as late as the 1880s, production generally declined after the devastation of the Civil War.[33]

Although important industries at South Union, both the linen and silk industries were eclipsed by the production of woolens. To assure quality woolens, the Shakers purchased the finest sheep available for their herds. Merino sheep, which had been introduced in the United States in 1807 and which were prized for their long fleece, were purchased as early as 1811, and by 1850 the society had improved their herd by crossing it with the Saxon, Cotswold, and Southdown breeds. The largest herd ever reported was seven hundred head in 1864.[34]

The preparation and finishing processes associated with the production of woolen cloth at South Union mirrored that of the world. South Union's woolen industry began modestly with carding and fulling mills. Prior to mechanization, the relatively unskilled chore of carding wool to straighten and blend fibers was often delegated to children, who performed their task with hand cards. South Union's first carding machine arrived from Harmony, Indiana, in 1819 and within a year James T. Sharp, who ran the mill, reported the operation had netted $522.75 for services rendered to the world's people. In August 1821, the Society purchased for "three horses valued at $400.00" a better carding machine.[35] Though a profitable business, the mill required maintenance and costly improvements. In 1822, the Society spent $140 on a new set of machine cards, which led them to consider raising their fee to their customers. A notice in a Logan County paper informed customers that the Shakers,

> having been at Considerable expense and trouble, in purchasing cards for our Machienes at double cost in currency – and haveing only received currency in payment for carding, we had for a while thought to raise on Carding – but now give notice to customers, & to those who have paid over that price, we will refund the same on application.[36]

Further improving their equipment, the Shakers purchased a condenser two year later, which allowed the carding machine to dispense wool in a long, continuous strand known as roving.

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[33] Ministry, South Union, to Ministry, Mount Lebanon, 16 October 1853; Gordon, *Shaker Textile Arts*, 170; [South Union Shaker] Record B, 1836-1864, 1 January 1859, Manuscripts Collection, Julia Neal Library, Shakertown at South Union; [South Union Shaker] Journal, 1872-1878, 18 November 1875, WKU; 1881-1883 Journal, 22 November 1881.

[34] Record A, 8 October 1811; *Report of the Commissioner of Patents for the Year 1850* (Washington, D.C., 1851), 277-78; Record B, 26 April 1864; Merrimack Valley Textile Museum, *Homespun to Factory Made: Woolen Textiles in America, 1776-1876* (North Andover, Mass., 1977), 2.

[35] Record A, 5 June 1819 and 4 August 1821; "The United Society Dr. [for] Carding Machine," 1820, Box 1, Day Collection, WKU; Merrimack Valley Textile Museum, *Homespun to Factory Made*, 66, 70; Harold B. Burnham and Dorothy K. Burnham, '*Keep Me Warm One Night': Early Handweaving in Eastern Canada* (Toronto, 1972), 16. British mechanics introduced the carding machines to America in 1790. Both hand-cranked and water-powered carding machines consisted of several sets of drums covered with wire-studded leather. These circular drums revolved against a stationary drum spreading the wool smoothly over its surface. Wool came off the machine in a uniform sheet of fibers.

[36] [South Union Shaker] Account Book, 1821-1833, 15 April 1822, II:B-64, WR, *Russellville Weekly Messenger*, 7 June 1823.

To facilitate their textile industry, the Shakers built a fulling mill in 1814 and opened it to the world's people the following year. Shakers accepted cloth at the mill site but also employed merchants at general stores from as far away as fifty miles to accept cloth for the mill. To their customers, Shakers instructed that when "sending your cloth . . . roll it up tight; put a safe bag or wrapper round it . . . directions, in writing must attend every piece of cloth, stating the owner's name, the county he lives in, the number of yards in each piece of cloth and what is wished to be done to it." The Shakers assured their customers that they could "rely on the utmost punctuality, neatness and dispatch in our power," but the community noted in print that it did no business "on the first day of the week [Sunday]."[37]

After fulling, the cloth's uneven fibers had to be napped and sheared to improve the materials softness and appearance. Prior to midcentury a fuller's teasel, the prickly flower head of a plant commonly known as the fuller's thistle, was rolled over the cloth, causing the fibers to stand up. In 1849, South Union purchased a napping machine or teasel gig.[38] From the beginning, Shakers employed a shearing machine at the fulling mill: one obtained in 1814 from Union Village, Ohio, another in 1816 from Pleasant Hill, and yet another on a trip to Watervliet, Ohio, in 1849.[39]

The Shaker Sisters also colored the cloth at the fulling mill. Like other professional dyesters, the Shakers purchased dyestuffs from area merchants. Although the most requested color was a light or dark drab, the Shakers produced fabrics in black, blue, bottle green, dove, lead, drab, red, and various shades of brown. Customers paid according to service, dye color (dyes varied greatly in price), and how closely the cloth was shorn.

As technology advanced and as capital became available, the Shakers purchased improved equipment and machinery. In 1819, South Union acquired a "Spinning Machine – with 6 Spindles!" and paid $12 for the rights to duplicate it. Commonly known as a spinning jenny, this apparatus helped increase the community's yarn production and led to the purchase of a fly shuttle loom in 1820. This loom employed a series of cords and boxes which the hand weaver operated to send shuttles racing from one side of the loom to the other. Using this machine could triple a weaver's output.

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[37] Record A, 29 December 1814; [South Union Shaker] Account Book, 1815-1816, 18 January 1815, II:B-55, WR; *Fulling Mill Broadside*, Broadside no. 300, WKU: Marion L. Channing, *The Textile Tools of Colonial Homes: From Raw Materials to Finished Garments*, 2d ed. (Marion, Mass., 1971), 50-51. Fullers used moisture, heat, and friction to clean, shrink and felt cloth. Heat and agitation caused the scales of wool fibers to interlock with each other, resulting in a stronger, firmer material than that cut from the loom. Fuller's earth, a claylike mineral, absorbed the remaining grease in the wool. Fullers generally employed water power to operate their mills. Cloth was placed in a tub and alternately pounded with beaters causing the fabric to turn over and over.

[38] Dean Straffin, "The Fuller's Teasel." *Early American Industries* 45 (1992): 38-39; John Nicholson, *The Farmer's Assistant: Being a Digest of All That Relates to Agriculture, and the Conducting of Rural Affairs; Alphabetically Arranged and Adapted for the United States,* 2nd ed. ([Philadelphia], 1820), 120; 1844-1860 Account Book, May 1849.

[39] Merrimack Valley Textile Museum, *Homespun to Factory Made*, 44, 96; Record A, 23 August 1814; 1844-1860 Account Book, May 1849. Traditionally, skilled shearsmen wielded forty-pound shears to cut the fabric's raised nap. An automated shearing machine, which required little skill to operate, was patented in 1793; American mills rapidly adopted it.

Always eager to reduce the labor necessary to produce yarn, the Shakers in 1840 custom ordered three more advanced spinning machines in Lexington for $100 each. By 1849, textile technology had increased significantly, and South Union upgraded their facility with a spinning machine with 120 spindles from the Shakers at Watervliet, Ohio. In 1866, they purchased a spinning jack featuring 240 spindles.[40]

With escalating mechanization, the Shakers required skilled craftsmen to install and operated their textile machinery. Adam Shriver, an experienced textile worker from Harmony, Indiana, traveled to South Union in 1819 to "set up & put in motion" the first carding machine. Likewise, in 1847, the Shakers employed local mechanic Thomas Gooch, at a wage of two dollars per day to set up a newly purchased machine. As machinery became more complex, they engaged professional wool carders to operate the mill. In 1863, the Shakers hired George Copley, a wool carder from Louisville, to superintend the carding factory at nine dollars per week, a good wage for the time. The Shakers resented having to hire the world's people, because it decreased their self-sufficiency, but successful operation of the factory required skills they did not possess.

In the 1860s, the community's woolen industry had incorporated steam power. First introduced in the United States in 1773 and in Kentucky in 1811, steam power presented an improvement over waterpower, due in great part to its reliability.[41] However, under Eades' conservative leadership, the woolen industry remained water powered until the late 1860s. From the beginning Eades opposed expanding the woolen mill. Perhaps he foresaw the Society's gradually declining membership and the dearth of expertise available to operate and maintain an enlarged and more mechanized factory. Several persuasive Shaker Brethren, however, envisioned a larger factory as a means to bolster the community's coffers.

The proponents of a modern factory took advantage of an unfavorable stroke of fate in May 1865, when an "Appalling storm and freshet – extraordinary" covered the "spinning Jenny and loom in the factory" causing considerable destruction."[42] After assessing the damage, the South Union leadership decided to enlarge the factory that autumn. Rather than erect a new structure, the Shakers chose to expand the two-story stone building opposite the community's grist and saw mill on Clear Fork Creek,

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[40] Record A, 30 January 1819, 25 January 1820, 21 March 1820; Record B, 25 July 1840; Record C, 3 September 1866, WKU; Mary Schenck Woolman and Ellen Beers McGown, *Textiles: A Handbook for the Student and Consumer* (New York, 1929), 75, 200; Merrimack Valley Textile Museum, *Homespun to Factory Made*, 50, 74. The walking wheel or great wheel produced only one strand of yarn. Introduced in the 1790s, the hand-operated spinning jenny increased spinning production several thousand percent by using multiple spindles. The stream- or water-driven spinning jack, introduced to American mills in the 1820s, had widespread use by 1840. The first jacks had one to two hundred spindles, but those of four hundred were common by the 1870s. Yarn spun on jacks was of higher quality than that spun on the jenny.

[41] Issac Lippincott, *A History of Manufactures in the Ohio Valley to the Year 1860* (Philadelphia, 1974), 68-69.

[42] Record C, 20 May 1865.

which had housed the community's carding mill since the early 1830s.[43] Eades expected the new factory to house "a spinning jack of 250 spindles and four power looms," with "the main business to be making stocking yarn for sale."[44] Construction began with two Brothers stripping the roof off the factory "prepatory to putting on another story of brick," and within a week masons from nearby Bowling Green began adding the third-story walls. Less than two months later, Brethren put a new tin roof on the building. While the men were still roofing the building, Brother Urban Johns journeyed to Louisville, Cincinnati, and "other places in Ohio to look for [an] Engine – carding machines & spinning Jack and looms for our factory."[45]

The following April, a "new turbine cast iron water wheel gotten from Cincinnati with new pulleys, shafting, and gearing" was installed. After several frustrating delays, the turbine began operation just as the new textile machinery ordered from Furbush and Gage of Philadelphia reached South Union. The first shipment included a set of carding machines and a wide loom. One month later, the prized 240-spindle and a spinning jack, "a fine specimen of workmanship," arrived from the same company. Eades continued his reticent disapproval, writing smugly, "The freight on the present lot amount to the snug little sum of $75." On the equipment's arrival "Several Sisters went to the factory to assist in cleaning the Machinery as it had been wet & was somewhat rusted.[46]

The Shakers soon discovered that even with an additional story, the stone factory contained "but little over half the room required."[47] At this point the community's leadership made the critical decision "to raise a frame building at the East end of the present building & to get a steam engine to propel the Machinery when the water is low." This seems to indicate that the Shakers planned to use the steam engine only when waterpower failed. Although the Shakers maintained a substantial spring-fed millpond, it did not provide a consistently reliable power source. Eades's acerbic pen could not resist a jab at the project: "It seems to grown in spite of every draw back, one thing demands another and another. May we not repent it is my prayer."[48]

Despite Eades's opposition, the project lumbered forward. In July 1866, Johns journeyed to Cincinnati to procure one large and one small steam engine. Stopping at Louisville en route, he decided to purchase the engines from that city's Ainsley Cochran and Company. While waiting on the engines' delivery, the Shakers continued construction of the building's addition with hired help. A Mr. Kennedy from the Ainsley Cochran concern visited the site "for the purpose of showing where the foundation

[43] Record A, 17 September 1835.
[44] Harvey L. Eades to Freegift Wells, 12 October 1865, IV:A-63, WR.
[45] Record C, 13 November 1865.
[46] Ibid., 28 June 1866.
[47] Urban E. Johns to Giles B. Avery, 26 August 1867, IV:A-63, WR.
[48] Record C, 28 June 1866.

must be laid for the Engine."[49] During the new wing's construction, machinery was assembled and installed in the building's older section. The new fourteen-roller condenser which compressed the bulk of the wool commenced operation on September 1, 1866. Eades noted that it worked "beautifully – like an automaton." Within two weeks the 240-spindle jack started and two of the power looms were readied. After examining the "first web of Jeans" from one of the looms, Eades quipped, "Does not yet work well."[50]

On October 11, 1866, the two new steam engines reached South Union via the Louisville & Nashville Railroad. One behemoth with forty-five horsepower was to run the "factory machinery and grist mill, when the water is low"; the smaller one with three horsepower was employed to pump water. Upon chimney flue's completion, the boiler was fired, and on November 10, 1866, Eades exclaimed: "Steam! At last. Steam is introduced at South Union."[51]

Although the steam engines were in place, almost a month lapsed before the shafts and belts moved. By late November, the carding machines and jack operated, but the looms remained idle. By this time the Shakers worried about locating competent craftsmen and mechanics to operate the factory as well as the concern's mounting costs. Eades lamented:

> The four new looms are now set up in their place and we must have a competent weaver – to learn some of our young men to weave – as we do not now expect to employ females there – his wages will doubtless be $10 a week – then a Dyster & finisher at $10 pr. week will be $2500 per year for hands at factory – all this besides 2 cords of wood pr. day for at least 6 or 7 months of the year say 160 days or say 300 cords of wood @ $2.50 pr. cord is $750 – say $800 – all this added to dye stuffs etc. – I presume, I would be on the safe side to say the cost of money to be expended this year besides buying wool to work will not fall much short and may considerably exceed the sum of $5000. I fear the concern will not much more than clear its teeth.

As Eades predicted, the community soon employed a spinner/carder and a machinist/engineer, each at $10 per week. Once more the elder mourned, "I trust the factory and mill will clear enough to pay them with the help we expect to give."[52]

Competent help from the world was essential for the factory's smooth operation, but finding an overseer from the Shaker ranks proved trying. The Shakers placed the factory's superintendence under one brother after another with little positive results. "The woolen factory seems to drag heavily because our deacon does not understand the business" Eades reported. In May 1863, Elder Lorenzo Pearcifield

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[49] Ibid., 17 July, 7, 20 September 1866.

[50] Ibid., 14 September 1866.

[51] Ibid., 10 November 1866.

[52] Ibid., 10 January 1867; Lippincott, *Manufactures in the Ohio Valley,* 166-67. The lack of competent labor to run woolen factories was a problem throughout the developing Ohio River Valley. "The production of woolens on a large scale," wrote Lippincott, "required skilled laborers in many departments of the business from the sorting of wool to the finishing of the goods; this kind of labor was not yet to be had." Undoubtedly, this explains the small number of woolen factories reported in Kentucky. As late as 1860, the commonwealth reported only eighteen counties with woolen factories.

was appointed "Superintendent of the Woolen factory – especially to keep the boys to their loom." Six months later Shaker Logan Johns, who had gone from herdsman to weaver in the previous year, was put in charge of the operation, replacing a less competent Brother. The substitution netted no appreciable results. In part, the Elder blamed the Trustees, who did not "hesitate about launching further into this hitherto unexplored Ocean, & now are feeling their way by inches."[53]

Besides the dearth of skilled craftsmen and inadequate Shaker supervision, the factory also suffered from an inadequate inflow of wool and from mechanical problems. The Shakers assumed that wool produced inside the community and from nearby counties would supply the factory; however, during the factory's first year Urban Johns was sent out-of-state to purchase wool. The factory also experienced several mechanical difficulties, including a burst boiler and several broken mill spindles. Despite its shortcomings, the mill was "still clanking away by steam in the late fall of 1867."[54]

Although the factory did produce various types of top quality woolens, Eades referred to the operation as an elephant that ate constantly and never produced anything of substantive value. "We have raffeled for the Elephant & won,!" Eades wrote the Mother Ministry. "The question now is, what shall we do with him? Will he eat his own head off, or will he pay?"[55] The enterprise became a major embarrassment for the Society. When several members from the Mother Ministry visited South Union in 1868, they reported: "Truly, they have got the 'Elephant,' but do not know what to do with him. The factory is a sore burden that they do not know how to dispose of, at present."[56] Less than three months later, a fire relieved the Shakers of the failing enterprise. On September 2, 1868 at "about rising time, a brilliant light was seen over our dwellings. It was soon announced the Factory was burning." Eades blamed the conflagration on "incendiaries" who torched the factory and the society's grist mill. The Shakers saved some cloth, but "all else of both buildings was given over to the jaws of the devouring element." Eades estimated the damage at $60,000.[57]

The fire was undoubtedly a "hate crime." The Shakers' agricultural and industrial success as well as their benevolent attitude toward blacks generated animosity among their neighbors. Eades admitted that the community had not paid sufficient attention to this neighborhood dynamic. "The Negroes had warned us," he recalled, "that our white neighbors intended to burn us out, but we had not become sufficiently alarmed, either to insure our property or to place over it a suitable guard." A few

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[53] Record C, 15 August 1867, 9 May 1868; Ministry, South Union, to Ministry, Watervliet, 15 January 1867, IV:A-63, WR.

[54] Ibid., 12 August, 27 September, 12 November 1867.

[55] Ministry, South Union, to Ministry, Watervliet, 15 January 1867, IV:A-62, WR.

[56] Ministry at Watervliet, New York, now at South Union, to Gospel Friends at Watervliet, 19 June 1868, VI:A-63, WR. This letter was written while the ministry was on a traveling tour.

[57] Record C, 2 September 1868. Eades calculated the damages as follows: factory building and equipment, $35,000; grist mill and equipment, $18,000; grain consumed, $1,000; wool and cloth consumed, $6,000.

months prior to this fire, another Shaker structure as well as the homes of several blacks had been burned by "armed men & midnight prowlers." After these offenses the Shakers offered a $500 reward "for the parties who applied the torch." The Society's Trustees felt that this incident encouraged the incendiaries "to greater crimes, even the burning of the mills."[58] Eades also suspected the hired mill workers who "knew they were soon to be dismissed."[59]

Fearing further retaliation, Eades and the Trustees wrote Governor John W. Stevenson, asking him to "save us and our homes from the Spoiler." The Shakers requested that the state offer "a reward for the apprehension of the incendiaries & their backers," who should be placed "where it would not be in their power to so sin against God, themselves & their country." They "got no reply." [60]

Eades also wrote a confession letter to the Mother Ministry at Mt. Lebanon, explaining that South Union had built the factory despite a directive from the Mother Ministry declaring factories "fruitful sources of disorder, not only between families, but between Believers and the world, in some cases the media of great spiritual losses, in other financial losses, in almost all place loss of union between families with few exceptions." Eades admitted that if they had heeded the warning it "would have saved us . . . from the poignant regrets & great sufferings . . . in consequence for this disobedience."[61] Without capital for new construction and realizing the futility of resurrecting the "elephant," the Shakers decided against rebuilding the woolen factory. The grist mill, however, was rebuilt.

The fire destroyed the woolen industry at South Union. The Shakers had followed the industrialization pattern familiar to woolen plants throughout the country, beginning small and adding new equipment as it became available. The sudden surge in technology and capacity, created by the erection of the factory in 1867, outdid the ingenious Society. The Shakers did not have the steady supply of raw wool required for such a large facility, and they lacked competent help to operate and supervise the factory properly. The facility never paid for itself, although the carding machines and the fulling mill had posted handsome profits over the years.

The loss of the behemoth woolen factory was a mixed blessing. Despite the tremendous loss in capital, compounded by the fact that the buildings were uninsured, the Shakers no longer had to invest in what appeared to be a doomed enterprise. Still, the Shakers had "never before been without the means to make our own Blankets, Bedspreads, and winter clothing until now." Despite this handicap, the Sister who penned the above sorrow hoped that "with the wisdom given us by a kind Providence we may

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[58] Ibid., 10 September 1868.
[59] Ministry, South Union, to Ministry, Mt. Lebanon, 7 September 1868, IV:A-63, WR.
[60] Ibid.
[61] Ministry, South Union, to Ministry, Mt. Lebanon, 7 September 1868, IV:A-63, WR.

manage to get along somehow without rebuilding the Factory."[62] Despite the lack of a wool processing plant, the Shakers continued to raise sheep for wool in the 1870s and sent it elsewhere for processing.[63]

South Union's textile industries helped the Shakers meet their own textile needs as well as those of the surrounding countryside. Although their textile processing and finishing processes were similar to those of the world's people, their textiles were prized for the fine craftsmanship. The industries' importance was demonstrated by the number of Shakers involved in their production and the amount of capital dedicated to the work. When the Shakers were able to purchase textile from the world at prices cheaper than they could manufacture them, they discontinued production. Also, shortages of skilled labor and raw materials, as well as the volatile jealousies of their neighbors, abetted the Shakers' decision to terminate South Union's textile processing. Their wool industry outlasted silk and linen production, because it was the most easily adaptable of the three to mechanization From 1870 to the society's demise in 1922, South Union's Shakers purchased their clothing from the world, For the sect's older members who remembered the community's earlier self-sufficiency and excellent textiles, these purchases were undoubtedly made with some reservation.

[62] Nancy E. Moore to Eldress Nancy [Orsment], 18 December 1869, IV:B-20, WR.
[63] Shaker Journal, 1872, 4 June 1874, WKU.