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# “One man might bring it to perfection”: Rev. Ezra Stiles and the Quest for New England Silk

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**Ben Marsh (University of Kent)**

On 17 October 1772, Henry Marchant called at the house of Rev. Ezra Stiles in Newport, Rhode Island, bearing a package. He was a member of Stiles’s congregation, the Second Congregational Church at Newport, where the reverend had ministered since 1755. A lawyer by profession, Marchant had lately returned from London, where he had been sent as a co-agent of the Rhode Island colony in July 1771. In an era of worsening relations between the American colonies and the mother country, he had been tasked with trying to secure a Parliamentary grant that had been withheld because of Rhode Islanders’ misbehaviour during the Stamp Act crisis of 1765. Stiles had been among the well-wishing crowd who waved Henry Marchant off from Bristol Ferry that summer, but few can have been as excited to see him back or relieved to learn that while traversing the Atlantic the ship and its cargo had survived a galley fire unharmed. Inside Marchant’s package was a patterned all-silk fabric, some ten and a quarter yards in length and half an ell (around twenty three inches) wide. It had been manufactured by a Spitalfields drawloom weaver named Samuel Laurance in Widegate Street, London, who described it as “Green Ducape or Mantua striped & sprigged.”<sup>1</sup>



*House of Ezra Stiles, Newport*

Only in recent decades had such all-silk fabrics become more widely visible in the North American colonies. For a long time, the diffuse spread of the colonial population and its limited wealth (with no recognisable court or aristocracy) and minimal manufacturing capacity had meant that the most expensive and fashionable fabrics were difficult to access. Even where capital and inclination existed, the opportunity to display fine garments and furnishings was inhibited by the colonial cultural landscape. David Lazaro found that in the Connecticut River valley, “no two extant eighteenth-century garments, or fragments thereof,” were found to be owned by the same person, and that any figured silks tended to be extensively altered and reused “until only small scraps remained,” another

reflection of their high value and rarity.<sup>2</sup> But whereas early consumption was concentrated among a handful of elites, and brokered by colonial merchants as a by-product of their transatlantic commercial activity, by the late eighteenth century, this picture had changed. American consumers, so long enthralled to woollens and linens, could find a growing array of silk goods available to order and to purchase in the port cities.<sup>3</sup>

The Stiles had originally requested a fabric of “the best Damask” and had sent Marchant instructions in December 1771 with “an inclosed Pattern of Green English Damask, double.”<sup>4</sup> A damask was a perfectly sensible choice for a colonial minister’s wife, offering a longer fashion half-life than other fabrics because its patterns remained pretty consistent, the weave was durable, and it could be both reversed and adapted to other uses. That they pursued the order through Marchant was also typical of how colonial elites ordering patterned silks in this era, often placing such orders through trusted friends or familiar merchants. As Stiles’s correspondence with Marchant shows, the element of trust was important in Atlantic orders, and was integrated with rather than replaced by the ability to specify designs and patterns by number or sample. Marchant wrote to Ezra Stiles on 14 May 1772 to forewarn him and more particularly his wife Elizabeth, that the finished product would not entirely match their specifications, but that “it is I think of a good Green, and is thought by every Body to be very pretty, much more fashionable than Damasks which are not worn at all indeed in London.” The weaver had charged two pounds and twelve shillings for the cloth, though Marchant had expedited the work by offering an extra two shillings and sixpence “to the manufacturer to encourage him to do his best.”<sup>5</sup>



*Sample of Stiles fabric*

A measure of the Stiles's excitement at the arrival of this long-awaited "Ducape or Mantua" fabric is that within just three days it had been "Made up into a Gown for my Wife," leaving just under a yard surplus.<sup>6</sup> It was a single-coloured cloth, in dark green, in a simple weave structure of a sturdy, corded appearance. Though mostly plain woven, it contained subtle patterning and achieved extra lustre by the intermixture of a satin weave structure, akin to a damask. But unlike the dense, flamboyant damasks characteristic of recent decades, requiring fourteen to sixteen yards of length for a dress, the fabric woven by Laurance was more modest and restrained – using less than ten yards and fewer warp and weft threads.<sup>7</sup> Its thistle-like botanical motifs, gentle zigzags and stripes, and reflective variation offered enough to catch the eye without ostentation. Its subtlety in patterning partly owed to wider shifts in international fashion in the final decades of the eighteenth century, as European consumers generally embraced simpler and lighter styles. But the subdued colour and plainness of design were also distinctively American features. As a number of scholars have shown, including Natalie Rothstein, David Lazaro, and Nicola Shilliam, colonial consumers in North America consistently expressed something of a preference for more muted styles in silk, in what Rothstein described as "a graphic illustration of the Puritan tradition."<sup>8</sup> In fact, *this* gown was even more particularly American because of the origin of the raw material: it was woven out of silk from cocoons raised in the Stiles's own household.

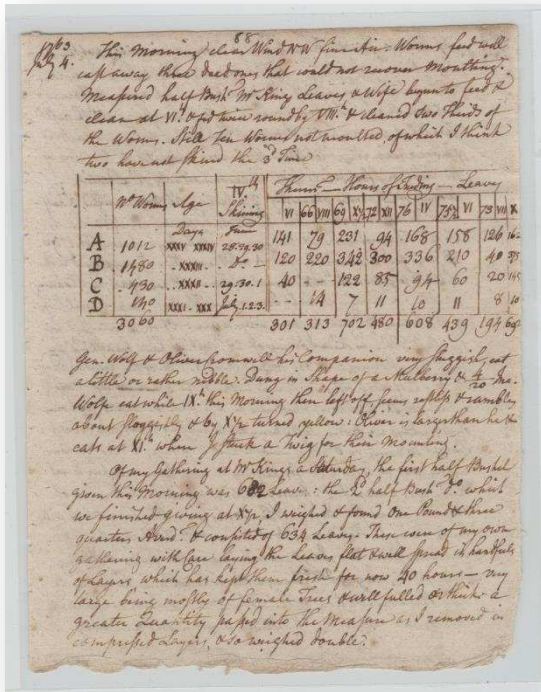
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Details of the history of this dress and its silk can be found in a remarkable handwritten notebook amidst the voluminous papers of Ezra Stiles in the Beinecke Rare Book and Manuscript Library at Yale University. The open-minded reverend, who became a reformist President of Yale between 1778 and 1795, was labelled the "gentle puritan" in a classic biography by Edmund Morgan. In his own life trajectory, in his "Observations on Silk Worms," and his presidency, he was motivated by sweeping Atlantic forces that we might comfortably cluster within the "Age of Enlightenment." Stiles fashioned himself into a node for networks of theologians, astronomers, natural philosophers, linguists, scientists, physicians, and many others. He was constantly hunting for opportunities to accrue information, test theories experimentally, share knowledge, and to refine his immediate, institutional, regional, or national communities.<sup>9</sup> Among Stiles's many preoccupations, few demonstrated his breadth of interests and his energetic spirit of improvement as much as his pursuit of New England sericulture, which lasted for over thirty years. He was convinced "one man might bring it to perfection," and met in different ways with failures and successes, both of which he deemed equally progressive (according to the scientific method). When he inadvertently trod on two of his silkworms, he concluded: "Thus some Allowance must be made for unavoidable Accidents."<sup>10</sup> The notebook itself is a curious entity, really a mishmash of several distinct components: at times a diary, an encyclopaedia, a work of science, a business proposal, a maths exercise, and a cultural commentary. Stiles could not help himself when it came to measuring things, and little escaped his purview: caterpillars, cocoons, leaves, silkworm litter, tree trunks, temperatures, times, attendants, and pieces of fabric were all subjected to intensive observational scrutiny. Individual silkworms were named, and anthropomorphised – such as Oliver Cromwell, who "spent all day in mounting about and fluing in different places, so that I despaired of his doing any Thing." And woe betide anyone who arrived at the Stiles house wearing silk clothing, for they were liable to be quizzed about dimensions, and their fabrics weighed.<sup>11</sup>



*Portrait of Rev. Ezra Stiles*

Stiles was convinced when he began with 3,000 silkworm eggs in 1763 that he could demonstrate the viability of New England raw silk production as a profitable household activity. At a stroke, he thereby hoped to help satiate the ravenous appetite of British silk manufacturers and consumers for the raw material. His experiments were tabulated over ten years, in the most extraordinary detail, as he put to the test theories from China and Italy, collected local samples and insights, and corresponded with experts from all corners of the British Atlantic. Each finding led Stiles to render new estimates about the potential worth of the pursuit and its materials, to compare information about raw silk in Persia, Spain, Naples, and further afield. Even after his move to New Haven in 1778 and the end of his own experimentation, Stiles continued to push sericulture and meticulously add to the notebook. Stiles was evidently proud of his achievements, and intended for his patronage of silk to rank among his most notable legacies. As a new husband and patriarch, he had written a “Family Constitution” whereby his progeny would undertake to (among other things) “Be religious and virtuous,” and “Plant each 100 Mulberry Trees.”<sup>12</sup> He carefully underlined the compliments that were paid to his raw silk by the London weaver, who “says, your Silk was of the best Kind he ever had, much better than the Philadelphia Silk...the whole Warp is of your own, which is always of the best Silk.”<sup>13</sup>



Page with table from Stiles's "Journal of Silkworms"

Close scrutiny of the notebook demonstrates that Ezra Stiles was heavily reliant upon those within his household to sustain his efforts at silk production. The growing input of his wife Elizabeth is reflected in the increasing use over the years of the plural personal pronoun, as well as more explicit descriptors: "My wife says she was four hours yesterday forenoon cleaning & feeding the worms: & an hour & half towards evening. She had breakfasted them the morning of 25th before I got up, & joined the numerations of the leaves to the preceding accounts."<sup>14</sup> Indeed, such references might lead one to suspect that her early death in Newport in 1775 was linked to the Stiles's ending of his domestic trials. Elizabeth gave birth to six children during the years of their silkworm experiments, and the notebook shows that their labour too was frequently mobilised. "Miss Emilia" spent an hour "Cleaning, Feeding & Tending" one July, and on another occasion we are told "Kezia being sick did not attend much to the Worms."<sup>15</sup> Stiles sent his daughters traipsing around New England in search of mulberry leaves and silkworm seed, and another source narrates how two of them had collapsed trying to reach the house of his fellow Congregational clergyman and silk cultivator, Rev. Dr. Foote of Northford, Connecticut, and had to be rescued by two men on horseback.<sup>16</sup> Foote was an important model for Stiles because he succeeded in generating homespun fabric from New England silkworms, and swatches of his produce are among those carefully appended to Stiles's journal.

Besides his wife and children, the notebook reveals that Ezra Stiles also employed his slave (named Newport) in silkworm-related activities from the outset. Newport was dispatched to gather mulberry leaves from nearby estates, as when "Newport says all he has bro[ugh]t from Col. Malbone's he pick[e]d from but one tree." He was also employed in drying wet leaves in linen to make them more palatable to the worms.<sup>17</sup> Race and colour remained subjects of interest to Stiles, and he formed hypotheses about species intermixture in the process of trying to explain why some cocoons were yellow and others white, positing the principles "perhaps may be applied to the various coloration of the different nations of Mankind."<sup>18</sup> Overall, the notebook tells us much about Stiles's household



and the labour and timing and difficulties involved in attempting silk cultivation on the colonial frontier: one cohort of worms was destroyed by cats, bundles of mulberry leaves began to compost, cocoons could not be transported by boat, spring frosts and summer heats could spell disaster. The notebook also reveals that the pursuit was much wider than many commentators have heretofore assumed.



*Swatches of American-produced fabric in Stiles journal*

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According to some sources, silk cultivation in New England dated back to the seventeenth century, and at least one publication claims that an early pioneer “had a suit made for himself” from silk he had raised in Connecticut.<sup>19</sup> Firmer evidence of serious trials is apparent in the 1730s, and it is probably no coincidence that an appreciation of the sericulture’s potential grew proportionately with the proliferation of silk goods: in September 1730, Governor Talcott of Connecticut informed the Board of Trade that “our inhabitants take (annually) all sorts of woolen cloath, [and] silks...of the

British manufacture, but we can't ascertain your Lordships the quantity."<sup>20</sup> By 1734, the Connecticut Assembly were sufficiently "well assured that good silk may be here made" that they passed an act for the "Encouragement of the raising of Silk in this Colony." Under its terms, which lasted for a ten year period, the colony's public treasury offered bounties to compensate experimenters for the "difficulty and charge" associated with establishing new products. Unlike other colonies which tended to subsidise only early stages (such as the planting of mulberry trees or the yield of cocoons), the act surprisingly attached a range of incentives to later production points: Connecticut silk raisers would be rewarded specified bounties for each ounce of "good sewing silk," each "pair of silk stockings weighing four ounces," for yards of woven mixed silk (worth more "whereof the warp is all silk") and up to nine shillings per yard of "well wrought" silks. County courts had to verify that the silks were "(*bona fide*) the growth and product of the silkworm bred and nourished in this Colony."<sup>21</sup>

Some of these measures seemed to contravene the spirit, if not the letter, of the system of mercantilist rules set up by Britain, which usually sought to restrict colonial cloth production where it might compete with domestic exports.<sup>22</sup> But one of the beneficiaries of this act was the Connecticut governor from 1741-1750, Jonathan Law, who went on actively to pursue British support for the industry. Since the early 1730s, Law and his family had undertaken silk cultivation, culminating in his wearing of "the first coat and stockings made of New England silk in 1747."<sup>23</sup> In subsequent years, like Stiles, Law used a Connecticut agent – in his case Eliakim Palmer – to arrange "a small P[ar]cell of raw Silk to be wrought up in England for my wife, hoping it may be serviceable to incline the L[or]ds of the board of Trade" to encourage colonial sericulture."<sup>24</sup> Whereas Stiles and his wife would try to learn how to reel the silk from printed sources in various languages, Law had managed to secure the more practical guidance of "an old french man...whose business it was in france." Law explained that this "advantageous way of taking silk off from the Balls" was something that others struggled with, including "many of my neighbours," and "divers Gentlemen from the Southward." His correspondence also hints at the vital labour of females in these trials, as when he "sent an Engine [a silk reel] so farr as Cambridge [Massachusetts] and one of my family in an hour or two's time has taught Dr Wigglesworth Lady to do that."<sup>25</sup> By the year of his death in 1750, at the ripe old age of 76, Law had achieved his ambition of securing Parliamentary legislation, and he was privately sent the "Act for encouraging the Growth & Culture of Raw Silk in His Majesty's Colonies or Plantations in America" as soon as it passed.<sup>26</sup> His pleasure at achieving "that which I have labour'd Much" was however combined with circumspection about whether Britain would uphold American interests, and he "fear[ed] the Insufficiency of ye Encouragement to putt our people on an industrious Improvement."<sup>27</sup>

Law's fears would have been somewhat allayed by the contribution made by Jared Eliot, a minister, physician, and farmer in Guilford, Connecticut, who chose to devote one of his important "Essays on Field Husbandry" to planting mulberries and growing silk in 1759 – around the time that Ezra Stiles married Elizabeth Hubbard. Eliot's work was significant because it did more than repeat many of the arguments previously rehearsed about the merits of silk, as framed for other colonies such as seventeenth-century Virginia and eighteenth-century Georgia. These arguments typically emphasised imperial political economy, the opportunities of the American environment and climate, and the potential value of silk production for colonial households. Beyond these, Eliot offered insights based on local information and observation, and once again we find that many of the pioneers were female rather than male: "the family" of Captain Return Meigs in Middletown, Connecticut who had "made silk many years," or "a woman of experience in this business...[who



could] earn enough to hire a good spinner the whole year.” Eliot stressed that raising silk would not call off “able bodied men” but rather mobilise “women, children, cripples, and aged persons,” and emphasised women’s roles in supervising smaller fingers “prone to inadvertency & idleness.” He proposed that fathers should aim to give their daughters “half an acre of land, covered with Mulberry trees.” More broadly, Eliot’s essay sought to enlighten Americans – so deeply sensible of their peripheral geographic place – about their global significance as consumers and potential silk producers. He reminded them of the pioneering silk industrialist Thomas Lombe’s testimony, “that the *Turkey* silk could not be wrought in his engine, but that the silk from *America* answered very well.” He closed the essay with a long passage explaining how to propagate mulberry trees and identifying a number of sources in the wild, such as the “vast numbers of young shoots” on Falkner Island in Long Island Sound.<sup>28</sup>

One nurseryman in particular, Nathaniel Aspinwall, seems to have played a seminal role in distributing white mulberries – whose leaves produced the finest silk – to New England districts willing to try sericulture. Aspinwall’s family were of longstanding Puritan stock and his ancestors had arrived with John Winthrop in the so-called “Great Migration” of the 1630s.<sup>29</sup> Born in 1740, we know little about Nathaniel’s youth, but he acquired interests in a nursery on Long Island, and sometime between 1760 and 1780 he set about literally transplanting white mulberries to areas where he found sufficient enthusiasm or investment. These would include significant orchards at his hometown Mansfield and at his subsequent place of residence in New Haven, and later major plantations in New Jersey and Pennsylvania.<sup>30</sup>

It is likely that the source of Aspinwall’s mulberry stock was at Flushing, Long Island, where another branch of the family led by Capt. John Aspinwall had settled to enjoy the fruits of his successful mercantile and privateering career out of New York.<sup>31</sup> Long Island was fast developing into a major centre for American horticulture: in the 1730s, Robert Prince and his son William set up a flourishing nursery business at Flushing Landing. There, they benefited from a fertile portside location, nearby Huguenot expertise, and connections to growers in Europe to create a considerable stock of fruit trees in grounds that would grow to 113 acres.<sup>32</sup> In 1771, when William Prince began publishing the country’s first nursery catalogues, among his initial listings were “Large black English” and “Black American” mulberries; by 1774, he had added to these varieties, offering “1500 white mulberry trees.”<sup>33</sup> The pursuit of new varieties, which continued in the nineteenth century, has left its mark on the land: different species of mulberries can still be found at Kissena Park and Flushing Meadows. Whether Aspinwall was personally involved in (or sought to benefit from) this expansion is hard to say, but he eventually owned his own extensive nursery on Long Island, which stood at Sands Point, near the Brooklyn Ferry.<sup>34</sup>

In 1783, Aspinwall advertised a “nursery of many thousands” of mulberry trees in New Haven “in good order,” by which time he claimed that “experience abundantly shows” that silk was a profitable pursuit in Connecticut. He timed his advert in the spring, as he would in subsequent years in the *Connecticut Journal*, with “the season for transplanting” and was evidently receiving advance orders in 1784 and beyond.<sup>35</sup> More details of Aspinwall’s activities were imparted in an article on silk in the *New-Haven Gazette* in 1785, which described “a very large nursery of fifty thousand trees in New-Haven,” priced at three-pence apiece, and another in Kensington, some thirty miles up the Quinipiac River. In years to come, Aspinwall sought to use his success in Connecticut as a launch pad for sales elsewhere. When Aspinwall and partner Peter DeWitt (a Philadelphia merchant) sought to

expand the provision of mulberry trees to Pennsylvania, New York and New Jersey in the 1790s, this time concentrating explicitly on “White Italian Mulberry Trees,” they claimed that Aspinwall’s New Haven nursery had supplied “the most remote, as well as the nearest townships” in Connecticut:

“many families there have raised large quantities of RAW SILK the year past; their *daughters* are mostly *supplied* and *clothed* with SILK GOWNS of their own *manufacturing*, at least *one hundred per cent. cheaper* than if they had purchased *imported silk*.”<sup>36</sup>

By the 1790s, silk production was firmly established as a seasonal pursuit which made a significant contribution to the domestic economy across parts of New England, with some regions such as Connecticut’s Windham and Tolland counties becoming the leading producers throughout the entire Americas. Manuscript receipt slips for fifty-odd claimants of bounties for silk production in Connecticut in 1789-91 indicate there was production across the state.<sup>37</sup> Aspinwall died “of a tedious and lingering disorder” in New Haven in 1800, and one short obituary prophesied correctly that Aspinwall “will be remembered as a benefactor to his country” should silk manufactures ever be established. As it happened, just ten years after Aspinwall expired, the first water-powered silk spinning mill in America was built by Rodney and Horatio Hanks.<sup>38</sup>



*Hanks Silk Mill in Connecticut*

While it is important to recognise the key contributions made by the likes of Nathaniel Aspinwall and Ezra Stiles in New England, it is also worth bracing somewhat against the gravitational pull of great men’s history (a gravity which tends to be peculiarly strong in the case of industrial pioneering). As already intimated, primary sources tell a slightly different story to the nineteenth-century histories of silk culture which often sought out heroes and operated by force of repetition.<sup>39</sup> In Massachusetts, for instance, considerable headway was made as a result of a newspaper competition sponsored by a Boston merchant in 1768, during which the town Selectmen counted over 19,000 mulberry trees.<sup>40</sup> Nurserymen and promulgators like Aspinwall and Stiles were probably necessary but they were not sufficient conditions for establishing silk cultivation. To fully account for the localised relative success of sericulture and later silk manufacturing in places such as Connecticut, beyond what Janice Stockard has described as “the efforts of four exceptional men,” it

is also important to acknowledge the dynamics of state support, and especially private uptake and family involvement.<sup>41</sup>

A good illustration of this can be found if we apply the methodological process of unravelling – so familiar to many female silk-raisers in eighteenth- and nineteenth-century New England – to the origins of the Hanks mill. The site purchased by the Hanks in 1810 was once the estate of Jedediah Elderkin, a lawyer who went on to make a name for himself by playing an instrument role in the Revolutionary war.<sup>42</sup> Sometime before the revolution, Elderkin had become one of the enthusiastic experimenters in silk production in Connecticut and by the 1770s had established a plantation of mulberry trees on his large farm in South Windham. According to one biographer, albeit a genealogically biased one, Elderkin “achieved a measure of success” in his attempts.<sup>43</sup> One source goes so far as to claim that Elderkin’s “extensive mulberry orchard...produced about ten thousand pounds of silk annually.”<sup>44</sup> While this figure is certainly a gross exaggeration, contemporary records show both the pace of advance and the difficulties encountered by Elderkin in his pursuit of homespun silk. In 1773, three months after Elizabeth Stiles first wore her gown in Newport, Jedediah Elderkin wrote to Clement Biddle, a Philadelphia gentlemen involved in various public initiatives there, mentioning “that some years since I began the cultivation of the mulberry tree, having now a large number fit for improvement.” Elderkin recorded how for two years his family had “made considerable quantities of silk; have spun and improved some, but find in that part of the process in spinning from the ball we fail, for want of proper reels and experienced workmen.” Elderkin asked Biddle for his help in securing “one of the young women in your works” for a year, and “a reel with all its appurtenances and cauldron made as soon as may be.”<sup>45</sup>

Despite setbacks in reeling and the advent of the American Revolution, Elderkin and his family sustained some progress in sericulture, for in his 1792 will he expressly left to his wife Anne his “mulberry lands near Auwebetuck” and “the appurtenances belonging to my silk manufactory.” He had taken care to ensure the “mulberry lands and trees” – by which he presumably meant his widow’s access and entitlement to the *leaves* – had not been surrendered when he deeded the farm upon which they stood to a David Young.<sup>46</sup> Later records describe the Elderkins’ silk output as taking the form of stockings, handkerchief and vest patterns, along with several pieces of dress silk “with which the daughters of the proprietor adorned themselves.”<sup>47</sup> It is likely that, as increasingly elsewhere across Connecticut, they also produced silk sewing thread. The Elderkins’ major contribution to silk cultivation probably lay in their fostering of significant numbers of white mulberry trees in the region of South Windham that yielded food for many generations of silkworms. But in their pursuit of manufacturing activities beyond a simple silk filature, they beat a path that was both politically and industrially forward looking. Today, visitors to the Henry Ford Museum in Michigan will find the Hanks Silk Mill entirely relocated within in its grounds, but little recognition of Anne Elderkin’s role in its germination.

Although it is impossible to establish definitively what inspired Jedediah Elderkin and his family to pursue sericulture, there are at least circumstantial reasons to suspect the unravelling goes further. One motivation might well have been political, for from the 1760s New Englanders were increasingly conscious of their manufacturing dependency on Britain for consumer goods, and began actively to seek out avenues to lessen their reliance and boost colonial production. The preference for all kinds of “homespun” grew exponentially as the imperial crisis developed into boycotts and anti-consumption movements. Elderkin himself had been appointed chair of a Windham committee in

December 1767 “to promote industry, economy, manufactures, etc.” at which it was agreed that residents would not buy British luxuries.<sup>48</sup> And although imported silks were expressly targeted as a symptom of Old World decadence, and the very virtues of the fibre called into question by shifts in fashion and trade during the Age of Revolutions, American-grown silk could and did fudge such issues. One author in 1785 claimed that Americans “could cloath themselves more easily in silk, than in woolens,” but they emphasised that silk “is proposed rather as a staple for exportation...for making remittances in commerce.” They thus sidestepped the thorny issue of silk being an ostentatious and elitist product to aim for in a new republic.<sup>49</sup>

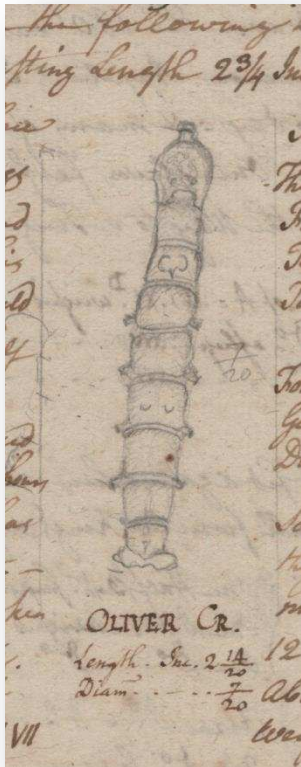
Finally, to wind Elderkin back further is to place him at Yale in the 1740s during the governorship of Jonathan Law. There, he was not only a contemporary of young Ezra Stiles, but like him numbered among the “small Circle of Neighbours” whom Jared Eliot intended as the readership for his essay on silk, and like him studied under the college’s intimidating President Thomas Clap.<sup>50</sup> Clap was clearly a supporter of sericulture in Connecticut, for he became a corresponding member of the London Society for the Encouragement of Arts, Manufactures and Commerce (now the Royal Society of Arts), and informed them in 1760 that “a great Number of Gentlemen...seem to be well enclined to undertake in the Business; And are procuring Mulbury Trees &c. for that Purpose.” His message prefigured Elizabeth Stiles’s gown insofar as he stressed that “much of the [New England-produced] silk is wanted here” rather than being shipped across the Atlantic. Attached to Clap’s letter was a rag of silk made in the colony:

“it has been dyed or coloured twice, and worn in a gown twenty years as an holy day garment, is yet so strong that not one of many stout men who have tried with their utmost force have been able to tear it cross ways.”<sup>51</sup>

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Exploring the eclectic history attempts at silk production in early New England, like reeling silk yarn, is to observe the increasing intermingling of different threads over the course of the eighteenth century. There is evidence of rags and gowns, literature and patronage, mulberry orchards and crude manufacturing, improvements in quality and especially quantity, and all of it enhanced by the imperatives of political economy and aesthetic desire – what Natalie Rothstein described as “the American wish to be fashionable”<sup>52</sup> On the day it was made, Elizabeth Stiles planned to give her gown “(after she is done with it) to Betsy or the oldest daughter surviving her, to be preserved as a Memorial of once having a Silk Gown made of Silk of her own Raising,” though what ultimately became of it is unknown.<sup>53</sup> Regardless, the dress – like several others in the same era – bore material testimony to the prospect of American labourers producing silk in New England. And this prospect in one way or another became a reality over the course of the next century, as first sericulture and silk yarn, and then fully fledged industrial silk manufacturing found a hold in parts of the region, mirroring its decline in Samuel Laurance’s Spitalfields. Business and economic historians have naturally celebrated and documented the nineteenth-century entrepreneurs and companies who grew to prominence in the northeast, sourcing their raw silk from far overseas, and pioneering new industrial technologies. But as Ezra Stiles’s household and his remarkable records show, between the

1760s and the 1790s, distinctive contributions were made by a host of actors, including thousands of wives like Elizabeth, children like Emilia and Kezia, occasional slaves like Newport, and of course millions of silkworms like poor old Oliver Cromwell. Where New England silk was “brought to perfection,” it required much more than the work of one man.



Portrait of an American silkworm!

## ENDNOTES

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<sup>1</sup> David S. Lovejoy, "Henry Marchant and the Mistress of the World," *William and Mary Quarterly* (3<sup>rd</sup> series), 12.3 (Jul., 1955), pp. 375-398. "Journal of Silkworms," Miscellaneous Volumes and Papers #318, Ezra Stiles Papers, Beinecke Library, Yale University, New Haven, 287. Florence Montgomery lists "Ducape" from Beck as "a plain-wove stout silken fabric of softer texture than *Gros de Naples*" and cites examples in New York and Philadelphia adverts in the 1760s, noting that extant swatches from the period are frequently watered; "Mantua" is described as "a silk of plain weave, heavier than taffeta," and Defoe described "plain English Mantua-silk" gowns as fitting for the tradesman's wife – "not dressed over fine." Florence M. Montgomery, *Textiles in America, 1650-1870* (New York, 1984), pp.227, 289.

<sup>2</sup> Lazaro, "Fashion and Frugality," p.59.

<sup>3</sup> Robert S. DuPlessis, "Cloth and the Emergence of the Atlantic Economy," in Peter A. Coclanis, ed., *The Atlantic Economy during the Seventeenth and Eighteenth Centuries: Organization, Operation, Practice, and Personnel* (Columbia, S.C., 2005), pp.72-94.

<sup>4</sup> Stiles, "Journal of Silkworms," 287.

<sup>5</sup> Rothstein emphasises that surviving invoices "indicate that ordering by number was the normal method while small samples attached to orders are very few." *Silk in European and American Trade*, p.6. On the appeal of damasks to middling consumers, see "Lazaro, "Fashion and Frugality," pp.60, 63; Miles Lambert, "The Consumption of Spitalfields Silks in 18<sup>th</sup>-Century England: Examples in Collections Outside London," p.68. Stiles, "Journal of Silkworms," pp.156-7, 299-300. The cost of a dress in the seventeenth and eighteenth centuries lay overwhelmingly in the material and its production, rather than the dressmaking. Peter Thornton, *Baroque and Rococo Silks*, p.80.

<sup>6</sup> In his diary on 19 October 1772, Stiles also recorded that the fabric weighed 18.67 ounces and had a selvedge of a tenth of an inch. Ezra Stiles, *The Literary Diary of Ezra Stiles*, ed. Franklin B. Dexter (New York, 1901), 1:292-3.

<sup>7</sup> These estimate yardages lengths for strong and slight silks are taken from Natalie Rothstein, "The 18<sup>th</sup>-Century English Silk Industry," in *18<sup>th</sup>-Century Silks: The Industries of England and Northern Europe* (Riggisberg: Abegg-Stiftung, 2000), p.29.



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- <sup>8</sup> Natalie Rothstein, "Silk in European and American Trade before 1783: a commodity of commerce or a frivolous luxury?" *Textiles in Trade: Proceedings of the Textile Society of America Symposium, September 14-16, 1990, Washington, DC* (1990), pp.6-9 (quote on p.7). David E. Lazaro, "Fashion and Frugality: English Patterned Silks in Connecticut River Valley Women's Dress, 1660-1800," *DRESS*, 33 (2006), pp.57-77. Lazaro posits that rural areas may have avoided elaborate patterned silks "due to their inability to properly care" for complex brocaded dresses, p.61. See also Nicola J. Shilliam, "Fashionable Bostonians and English Silks in the 18th Century," and Deborah E. Kraak, "Just imported from London: English silks in 18<sup>th</sup>-century Philadelphia," in *18th-Century Silks: The Industries of England and Northern Europe*, ed. Regula Schorta (Riggisberg, 2000).
- <sup>9</sup> Edmund S. Morgan, *The Gentle Puritan: A Life of Ezra Stiles, 1727-1795* (Raleigh: University of North Carolina Press, 1983).
- <sup>10</sup> Stiles, "Journal of Silkworms," p.85.
- <sup>11</sup> For examples of anthropomorphising, Stiles, "Journal of Silkworms," pp.33, 49, 76. For weighing fabrics, 77, 284, 285.
- <sup>12</sup> "A Guide to the Microfilm Edition of the Ezra Stiles Papers at Yale University" ed. Harold E. Selesky (Yale University Library, New Haven, CT: 1978), p.xv.
- <sup>13</sup> Stiles, "Journal of Silkworms," pp.288, 299-300 (quote).
- <sup>14</sup> Stiles, "Journal of Silkworms," p.62.
- <sup>15</sup> Stiles, "Journal of Silkworms," pp.95, 244.
- <sup>16</sup> *Papers of the New Haven Colony Historical Society*, vol. 2 (New Haven: printed for the society, 1877), p.56.
- <sup>17</sup> Stiles, "Journal of Silkworms," pp. 58, 84, 85.
- <sup>18</sup> Stiles, "Journal of Silkworms," pp.196-198.
- <sup>19</sup> Purportedly William Leete (governor in 1676-83), in H.H. Manchester, *The Story of Silk & Cheney Silks* (South Manchester, CT: Cheney Brothers, 1916), p.33.
- <sup>20</sup> . J.H. Trumball and C.J. Hoadly, eds., *The Public Records of the Colony of Connecticut from 1636-1776* (15 vols., Hartford: Lockwood & Brainard, 1850-90), 7:583.
- <sup>21</sup> Upon its expiration there were two efforts to revive the act, but there was apparently too much opposition in the Lower House. J.H. Trumball and C.J. Hoadly, eds., *The Public Records*

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of the Colony of Connecticut from 1636-1776 (15 vols., Hartford: Lockwood & Brainard, 1850-90), 7:494-5.

<sup>22</sup> For a recent overview, see Claire Priest, "Law and Commerce, 1580-1815," in Michael Grossberg and Christopher Tomlins, eds., *The Cambridge History of Law in America: Volume 1, Early America (1580-1815)* (Cambridge: CUP, 2008), pp.400-446.

<sup>23</sup> Bates. Albert C., ed. *The Law Papers: Correspondence and Documents during Jonathan Law's Governorship of the Colony of Connecticut, 1741-1750*, 3 vols., (in Collections of the Connecticut Historical Society, Hartford: Connecticut Historical Society, 1907-1914), 1:xxx.

<sup>24</sup> Jonathan Law to Balston & Palmer, 11 July 1749, Milford, CT. Law Papers, 3:322, 325 (received).

<sup>25</sup> Jonathan Law to Eliakin Palmer, 27 January 1748, *Law Papers*, 3:192. The reeling technique was presumably imparted to Rebecca, wife of Dr. Edward Wigglesworth, a Harvard professor, who had apparently failed beforehand despite "ten years Tryal." See also information on the Law family's production in Jared Eliot, *The Sixth Essay on Field Husbandry* (New Haven, 1759).

<sup>26</sup> Richard Partridge to Jonathan Law, 11 May 1750, London. Law Papers, 3:387, also 397 (formal confirmation from Whitehall).

<sup>27</sup> Jonathan Law to Richard Partridge, 25 June 1750 and 17 September 1750, Milford. Law Papers, 3:410, 414, 427.

<sup>28</sup> Jared Eliot, *The Sixth Essay on Field-Husbandry, As it is, or may be ordered in New-England* (New Haven: J. Parker and Company, 1759). Quotes on pp.8, 12, 13, 19, 29, 30. For a broader context, see Christopher Grasso, "The Experimental Philosophy of Farming: Jared Eliot and the Cultivation of Connecticut." *William and Mary Quarterly*, Third Series, 50.3 (July 1993), pp.502-528.

<sup>29</sup> His branch had relocated, led by his grandfather, who was remembered in 1767 as "a very careful, sober, good Christian, an Israelite indeed." They had moved via Roxbury, MA, to Woodstock, CT, and were involved in the bloody conflicts of the 1690s with French Catholics and Wabanaki Indians. Nathaniel's father Peter moved on to settle in Mansfield, CT, a town incorporated in 1702, where he married Rebecca Storrs. Algernon A. Aspinwall, *The Aspinwall Genealogy* (Rutland, VT: Tuttle Co., 1901), pp.27, 42-43.

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<sup>30</sup> Algernon A. Aspinwall, *The Aspinwall Genealogy* (Rutland, VT: Tuttle Co., 1901), p.57. Aspinwall's younger brother, Abel (1746-1807) seems also to have been involved in moriculture. *Ibid.*, p.60. In an address to the Connecticut Assembly in 1832, Governor John Peters claimed that the white mulberry tree was "transplanted from Long Island, in the year 1760" to Mansfield by Aspinwall, and that "immediately after the establishment of the mulberry orchard in Mansfield, a nursery of trees was raised in New-Haven, which were afterwards scattered through the State." He traced the rise of the industry, culminating in the year 1831, when "the quantity of silk raised in Windham and Tolland Counties, was sufficient to give constant employment to fifty looms, which would weave five yards each, per day; or in all, about seventy-five thousand yards per year." *New-London Gazette, And General Advertiser*, 9 May 1832, p.2. The governor remarked on the recent "assistance and advice of Edward Golden, an English manufacturer" who had helped gentlemen in Mansfield to prepare "a reel on an improved plan, and moved by water power."

<sup>31</sup> Capt. John Aspinwall built a house on 138-28 Northern Boulevard in 1762, which was used by British officers as a headquarters during the American Revolution. A picture can be found in Jason D. Antos, *Flushing* (Charleston, S.C.: Arcadia Pub., 2010), p.20.

<sup>32</sup> Claudia Gryvatz Copquin, *The Neighborhoods of Queens* (New York: Citizens Committee for New York City, 2007), p.58; James R. Cothran, *Gardens and Historic Plants of the Antebellum South* (Columbia, S.C. : University of South Carolina Press, 2003), p.290. For the population of the Trustees' Garden with white mulberry and other fruit trees, see Frances Moore, *A Voyage to Georgia* (1735).

<sup>33</sup> *The New-York Journal; or, The General Advertiser*, 10 March 1774, p.3. The trees were also offered in the *New-York Gazette, and Weekly Mercury*, 18 April 1774, supplement. Prince listed "Large black English," "Black American mulberry," and "White mulberry" in subsequent listings, including, e.g. *New-York Gazette, and Weekly Mercury*, 10 October 1774, p.2. and his broadside advertisement of 1790 which valued them at one and a half shillings each. "To be sold, by William Prince, at Flushing-Landing..." broadsides for the nursery (New York: H. Gaine, 1771 and 1790), Hunt Institute Library (EL5 P9553L 771 and 771(2)). The Prince Nursery not only survived, but benefited from the American Revolution, having been garrisoned and then patronised by British soldiers during and after their occupation of New York. But the allure of mulberry trees and silk cultivation would prove

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fatal to its subsequent profitability, as William Robert Prince lost his fortune in 1837 by over-investing in the *Morus multicaulis* craze. Abigail Jacobsen and J. Dustin Williams, "Prince Family Nurseries (ca.1737-1851)," *Bulletin of the Hunt Institute for Botanical Documentation* 21.1 (Spring 2009), pp.4-7.

<sup>34</sup> *New-York Journal, & Patriotic Register*, 9 April 1791, p.109.

<sup>35</sup> *New Haven Connecticut Journal*, 3 April 1783. Aspinwall did not specify what variety. *Ibid.*, 5 May 1784; 27 April 1785. The 1785 advertisement mentioned trees "of Four Year's growth" suggesting the nursery did not date back much before 1780.

<sup>36</sup> *Philadelphia Independent Gazetteer*, 17 April 1790. By this point, Aspinwall and DeWitt had established a nursery just outside Princeton as well as on Ridge Road outside Philadelphia, and promised an easy transplantation of the saplings which were between two and three feet high. Specimens of "AMERICAN SILK, of various kinds and colours," were available for viewing. These trees were listed as "from four to five feet high" the next year. *Philadelphia Mail; or, ClayPoole's Daily Advertiser*, 15 June 1791, p.4. In 1791, Aspinwall (with DeWitt) targeted citizens of New York, who were well placed to take advantage of his Long Island stocks. He threw in a few extra arguments to enhance the merits of his mulberries, stressing the suitability of their timber for shipbuilding, and the soil-enriching effect of their berries which made the grass taste better for cattle (though quite how he knew this is unclear). *New-York Journal, & Patriotic Register*, 9 April 1791, p.109. In 1792 the trees were selling for twenty shillings per hundred, and Aspinwall based himself in Philadelphia, at an address between Market and Arch Streets, where a growing range of samples "of American made Silk both in Piece and Skain...of a variety of colours and kinds, may be seen." *Philadelphia General Advertiser*, 24 March 1792, p.4.

<sup>37</sup> Such receipts recorded a total of 151 lbs. being rewarded with 307 shillings, and claimants ranged from Dorothy Triscott's paltry seven ounces up to Jabez Barrows Jr.'s fifteen lbs. and two ounces, for which he received thirty shillings and four pence. Most slips listed the claimant's town, from which we can gauge that the heaviest concentration was in Mansfield, followed by Wallingford, Guilford and Ashford, but in general they reflected a wide geographical uptake. "Justices Of the Peace: Orders for the Payment on Bounties for Silk Production," MS 69784, Connecticut Historical Society, Hartford. For a fine discussion of regional concentration and the peculiarities of reeling techniques, see Janice Stockard, "On

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Women's Work in Silk Reeling." The US census in 1810 recorded for the first time that two states, Massachusetts and Connecticut, were producing "sewing silk and raw silk", giving a figure of 103 lbs. (valued at \$608) for Massachusetts and \$28,503 for Connecticut, most of it produced in Windham county.

<sup>38</sup> Field et al, *American Silk 1830-1930: Entrepreneurs and Artifacts*, p.15; Richard Dobson Margrave, *The Emigration of Silk Workers From England to the United States in the Nineteenth Century, With Special Reference to Coventry, Macclesfield, Paterson, New Jersey, and South Manchester, Connecticut* (New York and London, 1986), 30-83.

<sup>39</sup> See, for examples, many of the publications that arose out of the "multicaulis mania" of the 1830s such as Jean d'Homergue, *An Historical Review of the Rise, Progress, Present State, and Prospects, of the Silk Culture, Manufacture, and Trade, in Europe & America* (Philadelphia, 1831); Linus P. Brockett, *The Silk Industry in America, a History: Prepared for the Centennial Exposition* (New York, 1876); William C. Wyckoff, *American Silk Manufacture* (New York, 1887). For more balanced and recent correctives and overviews on different aspects, see Jacqueline Field, Marjorie Senechal, and Madelyn Shaw, *American Silk, 1830-1930: Entrepreneurs and Artifacts* (Lubbock, Tex, 2007); David Rossell, "The Culture of Silk: Markets, Households, and the Meaning of an Antebellum Agricultural Movement," (PhD thesis, State University of New York at Buffalo, 2001); Ben Marsh, "The Republic's New Clothes: Making Silk in the Antebellum United States," *Agricultural History* 86.4 (Fall 2012), pp.206-.

<sup>40</sup> The Selectmen noted that besides the winning orchards, "many thousands have been raised by those who were not entitled to the Bounty, the Trees not being of the Age prescribed." W.H. Whitmore et al., *Records Relating to the Early History of Boston* (39 vols., Boston: Rockwell and Churchill, City Printers, 1876-1909), 20:306 (initial offer); 23:102 (advert placed), 112 (money transferred), 118 (payments made to winners), 121 (copy of notice printed), 127 (full list of applicants). The Selectmen who agreed to the proposal were initially Joshua Henshaw, Joseph Jackson, John Hancock, Samuel Pemberton, and Henderson Inches. The final notice pointed readers to Jared Eliot's *Essays Upon Field Husbandry*. Advertisement, instructions for applying, and prize-winner listings can be found in: *The Boston Gazette and Country Journal*, 16 December 1771, p.2; *The Massachusetts Gazette Extraordinary*, 9 April 1772, p.2.

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<sup>41</sup> Besides Aspinwall and Stiles, she referred to Jared Eliot and Benjamin Franklin. Janice Stockard, "On Women's Work in Silk Reeling: Gender, Labor, and Technology in the Historical Silk Industries of Connecticut and South China," published in *Silk Roads, Other Roads: Textile Society of America 8th Biennial Symposium, Sept. 26–28, 2002*, Smith College, Northampton, Massachusetts.

<sup>42</sup> William J. Heller, ed., *History of Northampton County [Pennsylvania] and the Grand Valley of the Lehigh* (3 vols., Boston: The American Historical Society, 1920), 1:157. "Colonel" Elderkin supervised defensive works in the port of New London in 1775 and then helped to solve one of the most critical problems for the American Continental Army which was their desperate lack of cannons and gunpowder during the war (creating a foundry in Salisbury and a gunpowder manufactory in Willimantic).

<sup>43</sup> D. W. Elderkin, *Genealogy of the Elderkin Family with Intermarriages* (Pittsburgh, PA: Fisher, Stewart & Co. Press, 1868) p.14.

<sup>44</sup> William J. Heller, ed., *History of Northampton County [Pennsylvania] and the Grand Valley of the Lehigh* (3 vols., Boston: The American Historical Society, 1920), 1:157.

<sup>45</sup> He closed his letter by claiming that "Your assistance in the above matters will help in promoting the purpose of making silk in North America, and greatly oblige your unknown Friend and Obed't and hum'l Serv't." Jedediah Elderkin to Clement Biddle, Windham, 22 January 1773, copied in D. W. Elderkin, *Genealogy of the Elderkin Family with Intermarriages* (Pittsburgh, PA: Fisher, Stewart & Co. Press, 1868) p.16.

<sup>46</sup> He died 3 March 1793, and his will was proved on 27 March 1793, as recorded in D. W. Elderkin, *Genealogy of the Elderkin Family with Intermarriages* (Pittsburgh, PA: Fisher, Stewart & Co. Press, 1868) p.19.

<sup>47</sup> William J. Heller, ed., *History of Northampton County [Pennsylvania] and the Grand Valley of the Lehigh* (3 vols., Boston: The American Historical Society, 1920), 1:157.

<sup>48</sup> D. W. Elderkin, *Genealogy of the Elderkin Family with Intermarriages* (Pittsburgh, PA: Fisher, Stewart & Co. Press, 1868) p.10.

<sup>49</sup> They were also able to link together constituencies, "the husbandman *and* merchant," who were often arrayed against one another in contemporary political and economic debates. Notice "To the Public," *New-Haven Gazette*, 14 April 1785. It was anticipated that silk would bring in more than fish, rice, and tobacco put together. The article concluded that



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such a plan “would be a certain basis for an immense trade. It is worthy the attention therefore of the husbandman and merchant, and indeed of the whole public, of every class, order and description.” Repeated e.g. in New Haven *Connecticut Journal*, 12 April 1786, p.1; *The Plymouth Journal, and the Massachusetts Advertiser*, 31 May 1785, p.4; Boston *Independent Ledger and the American Advertiser*, 2 May 1785, p.1; Philadelphia *Pennsylvania Mercury and Universal Advertiser*, 19 May 1786, p.1.

<sup>50</sup> Eliot, *Sixth Essay on Field-Husbandry*, p.3.

<sup>51</sup> Letter from Thomas Clap and Jared Elliot to Mr. George Box, New Haven, 2 June 1760. PR.GE/110/9/13, Royal Society of Arts Archive.

<sup>52</sup> “Silk in European and American Trade,” p.6.

<sup>53</sup> Stiles, *Literary Diary*, 1:293.