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*Samuel Hopkins,
The Holder of the First U.S. Patent:
A Study of Failure*

AMONG THE POWERS OF CONGRESS specifically enumerated in the United States Constitution is the power “to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”¹ If, as appears to have been the case, the convention sitting in Philadelphia in the summer of 1787 adopted this provision without significant hesitancy or debate,² that did not prevent Thomas Jefferson, absent abroad as this country’s minister to France, from engaging in some second-guessing. Given the role he would presently assume in the new government, it is an ironic twist that in his correspondence with James Madison one of the reasons Jefferson advanced as requiring the addition of

¹ U. S. Constitution, art. 1, sec. 8, par. 8.

² For the relatively limited consideration given in the constitutional convention to this specific power conferred on Congress, see Bruce W. Bugbee, *Genesis of American Patent and Copyright Law* (Washington, D.C., 1967), 125–31.

a bill of rights was the need to eliminate monopolies, even those of limited duration. While conceding that prohibiting monopolies would lessen "the incitements to ingenuity, which is spurred by the hope of monopoly for a limited time, as of 14 years," he concluded that "the benefit even of limited monopolies is too doubtful to be opposed to that of their general suppression."³ Had his argument prevailed, the result would have been to cancel by amendment the intellectual property clause in the Constitution.⁴

But Jefferson's argument was not accepted. In *The Federalist Papers*, Madison quickly brushed aside these objections: "The utility of this power will scarcely be questioned . . . The public good fully coincides in both cases [copyright and patent protection] with the claims of individuals."⁵ His reply to Jefferson was, however, more nuanced and deferential. He made clear that he shared Jefferson's aversion to monopolies "as justly classed among the greatest nu[i]sances in Government." Yet he suggested that monopolies "as encouragements to literary works and ingenious discoveries" might be "too valuable to be wholly renounced." He proposed for Jefferson to mull over a clever, if impractical, adjustment: "Would it not suffice to reserve in all cases a right to the public to abolish the privilege at a price to be specified in the grant of it?"⁶

After the first Congress under the Constitution assembled in New York in 1789, its members confronted a steady flow of petitions from interested parties requesting exclusive rights to their inventions.⁷ Responding to the stimulus of these petitions, as well as to the urging of George Washington

³ Jefferson to Madison, July 31, 1788, *Papers of Thomas Jefferson*, ed Julian P. Boyd et al. (26 vols. to date, Princeton, N.J., 1950–), 13:443.

⁴ The purist will object that "intellectual property," being a term of modern origin, is an anachronistic prefix to attach to this clause in the Constitution. In 1792 a Philadelphia lawyer defined two species of property "local and mental." The former comprehended, he wrote, both personal and real property, whereas "by the latter is understood the *products of genius*, which consists in discoveries in science, and in the useful arts." Joseph Barnes, *Treatise on the Justice, Policy, and Utility of Establishing an Effectual System for Promoting the Progress of Useful Arts, By Assuring Property in the Products of Genius* (Philadelphia, 1792), 4.

⁵ *The Federalist Papers*, no. 43.

⁶ Madison to Jefferson, Oct. 17, 1788, *Papers of Thomas Jefferson*, 14:21. Jefferson's evolving and not always consistent attitude toward patent protection is traced in Edward C. Walterscheid, "Patents and the Jeffersonian Mythology," *John Marshall Law Review* 29 (1995), 269–314.

⁷ P. J. Federico, "The First Patent Act," *Journal of the Patent Office Society* 14 (1932), 237–52; Bugbee, *Genesis*, 131–38.

in his address at the beginning of its second session,⁸ Congress enacted the first federal patent statute. The "Act to promote the progress of useful Arts," passed April 10, 1790, created a mechanism for patent issuance that soon proved unwieldy. Under its terms, any person seeking to obtain a patent for the invention or discovery of "any useful art, manufacture, engine, machine, or device, or any improvement therein not before known or used," was directed to petition the secretary of state, the secretary for the Department of War, and the attorney general of the United States. If, upon examination, any two of these cabinet officers deemed the invention or discovery "sufficiently useful and important," letters patent would then be issued in the name of the United States granting an exclusive right and liberty for a term "not exceeding fourteen years."⁹

This legislation remained on the books for less than three years. It was replaced in early 1793 by a registration statute that did away with the requirement of prior review and, until the next comprehensive patent legislation in 1836, allowed patents to be obtained simply upon the filing of an affidavit and the payment of the prescribed fee.¹⁰ During the period when the act of 1790 was in effect, the examining board approved fifty-seven patents and, by one count, rejected at least an equal number of applications.¹¹ Jefferson and his colleagues soon found themselves roundly criticized for being both too exacting in their scrutiny and too preoccupied by their other duties to devote sufficient attention to the petitions that were filed.¹²

Because of a disastrous fire that swept through the Patent Office (now known as the Patent and Trademark Office) on a winter night in 1836, virtually all the records dating back to the beginning years were destroyed.¹³

⁸ First annual address to Congress, Jan. 8, 1790, *The Writings of George Washington*, ed. John C. Fitzpatrick (39 vols., Washington, D.C., 1931-44), 30:493.

⁹ Act of Apr. 10, 1790, *U.S. Statutes at Large*, 1:109-12.

¹⁰ Act of Feb. 21, 1793, *U.S. Statutes at Large*, 1:308-23.

¹¹ P.J. Federico, "Operation of the Patent Act of 1790," *Journal of the Patent and Trademark Office Society* 72 (1990), 379-81 (reprinted from 1936 publication).

¹² *Ibid.*, 384-85; Walterscheid, "Patents," 285-89, 292-93. "[N]otwithstanding the acknowledged abilities of the Secretary of State," a contemporary saw "the nature and importance of the business of his office, at this time, requiring his whole attention" and hence disabling "the virtuous T. Jefferson" from carrying out this secondary responsibility. Barnes, *Treatise*, 33.

¹³ Kenneth W. Dobyns, *The Patent Office Pony* (Frederickburg, Va., 1994), 105-9; Nathan Reingold, "U.S. Patent Office Records as Sources for the History of Invention and Technological Property," *Technology and Culture* 1 (1960): 157-58; Carolyn C. Cooper, "Making Inventions Patent," *Technology and Culture* 32 (1991): 843-44.

It is next to impossible, therefore, to determine, among other matters, whether any jockeying for position occurred at the outset, who acted for the petitioners, how elaborate a submission was required to comply with the statutory provisions, how particular the cabinet members were in requiring a demonstration of usefulness and importance, and how long, from start to finish, it took on the average to obtain a patent.¹⁴

Only three patents were granted in 1790. In spite of the damage caused by the 1836 fire, there has never been any question about the name of the first patentee or the descriptive label that attached to his invention or discovery. On July 30, 1790, letters patent were issued to "Samuel Hopkins of the City of Philadelphia and State of Pennsylvania" for "an Improvement, not known or used before such Discovery, in the making of Pot-ash and Pearl-ash by a new Apparatus and Process." The original document, which disappeared for many years but eventually resurfaced in the possession of the Chicago Historical Society, was signed by George Washington; it also bore the attesting signatures of Edmund Randolph as attorney general and Thomas Jefferson as secretary of state.¹⁵

Beyond this sparse record, however, the true identity of the holder of the first patent has been entirely lost. Worse still, the position of precedence to which he is entitled has been surrendered, if not exactly to an impostor, to a candidate whose enthusiastic advocates have succeeded in persuading the Patent and Trademark Office, the Chicago Historical Society, and a number of writers on the development of the United States patent system that an altogether different Samuel Hopkins is the right man.¹⁶ That rival claimant, now recognized almost without exception as the holder of the first patent, lived in 1790 in Pittsford, Vermont, and subsequently moved with his family to another small village near Rochester, New York, that would in due course

¹⁴ Some fragmentary evidence on these subjects is cited in Federico, "Operation of the Patent Act," 379–85, Walterscheid, "Patents," 279–89, and Dobyns, *Patent Office Pony*, 23–29.

¹⁵ Edmund Burke, comp., *List of Patents for Inventions and Designs Issued by the United States from 1790 to 1847* (Washington, D C, 1847), 114, P J Federico, "The First United States Patent," *Journal of Patent Office Society* 36 (1954) 615–17, and Dobyns, *Patent Office Pony*, 24, 180, 194.

¹⁶ For the stumble of the Patent and Trademark Office, see *The Story of the U S Patent and Trademark Office* (Washington, D C, 1988), 2, and for the Chicago Historical Society's misstep, see Alfred F Young, Terry J Fife, and Mary E Janzen, *We the People Voices and Images of the New Nation* (Philadelphia, 1993), 140. Others who have misidentified the first patentee include Joseph Nathan Kane, comp., *Famous First Facts* (New York, 1981), 452, Henry M Paynter, "The First U S Patent," *American Heritage of Invention and Technology* 6 (1990), 21, John Seabrook, "The Flash of Genius," *The New Yorker*, Jan 11, 1993, 39, and Dobyns, *Patent Office Pony*, 24.

also acquire the name of Pittsford. In recent times, after suitable drumbeat and fanfare, historic roadside markers have been unveiled in both Pittsford's hailing their former resident as the first patentee, and those congratulatory plaques remain conspicuously in place today.¹⁷ This article will attempt to revive the memory of the legitimate holder of the first patent and, as a necessary consequence, to lay to rest the claim of his competitor having the same name; to locate Samuel Hopkins in his community and among family and friends; and to measure the tension created between his religious beliefs as a Quaker and his commitment to exploit his patented discovery at all costs. In large part, this will be a study of individual failure, but also of failure viewed in the broader context of speculative excess at the end of the eighteenth century and as an outcome that the entrepreneur in any era necessarily risks.

By fair appraisal, it must be conceded that Samuel Hopkins, the Philadelphia Quaker, was a marginal figure. He was certainly not an inventive genius. Yet he serves as a representative of a generation of Americans who were caught up in a speculative fever as their new country took shape and the prospects of making a fortune out of the land and its produce seemed limitless. Here was someone who for many years led a conventional existence, who was dedicated to family, steadfast in his religious observance, and at least moderately successful in his occupation, but who, in 1790 or thereabouts, appears to have experienced a crucial turning point in his life. He abandoned all that was established and secure and, for several years to follow, accepted an arduous and solitary existence traipsing through the backwoods of New York and Pennsylvania, in a futile search for wealth.

Writing a half-century later, Tocqueville generalized this phenomenon beyond any one person's pursuit of gain to include Americans as a tribe seeking to exploit the natural resources that an abundant nature had bestowed upon them: "It would be difficult to describe the avidity with

¹⁷ The dedicatory ceremony in Pittsford, Vt., occurred on July 27, 1956, when the governor of Vermont and the U S commissioner of patents led a delegation paying tribute to the long-gone local hero *Rutland (Vt.) Daily Herald*, July 28, 1956. In 1989, looking forward to the bicentennial celebration of the enactment of the first patent statute, the Rochester Patent Law Association conferred on Samuel Hopkins its inventor-of-the-year award and sponsored the plaque erected at a curbside location adjoining the Pittsford cemetery in which the Samuel Hopkins of the two Pittsford's is buried *Brighton Pittsford (N Y.) Post*, June 14, 1989. This case of mistaken identity is explored in greater detail in the author's recently published "Inventing History: The Holder of the First U S Patent," *Journal of the Patent and Trademark Office Society* 80 (Mar. 1998).

which the American rushes forward to secure this immense booty that fortune offers." The geographical scope of this ambition was enlarged at the time Tocqueville made this observation, but the driving force behind these Americans on the move and make had remained the same as in 1790: "The desire of prosperity had become an ardent and restless passion in their minds, which grows by what it feeds on."¹⁸

Born on December 9, 1743, Samuel Hopkins was the second child of Samuel and Margaret Giles Hopkins. The records of the Gunpowder Monthly Meeting, located about fourteen miles north of Baltimore, Maryland, show his birth date, giving him a start in life that is more plausible for the holder of the first patent issued in 1790 than the Pittsford claimant who was twenty years his junior.¹⁹ This Samuel Hopkins's ancestry in Maryland can be traced back to the middle of the seventeenth century, and from probated wills and other indicia of respectability, it does not seem excessive to place his family among the landed gentry. Sober and serious, these Quakers were also prolific: Samuel's paternal grandparents produced eleven children, and his parents thirteen. The maiden name of his grandmother was Margaret Johns, and that surname survived as a given name for sons in successive generations of the Hopkins family. Johns Hopkins, who endowed the university named in his honor, was a first cousin once removed of the first patentee—Samuel Hopkins's grandparents being Johns Hopkins's great-grandparents.²⁰

In 1758, at his father's request, the Gunpowder Monthly Meeting granted Samuel a certificate to go to Philadelphia and take up service there as an apprentice.²¹ In accordance with prescribed Quaker procedure, that certificate was accepted eight months later by the Philadelphia Monthly Meeting when Samuel Hopkins was placed in the care of Robert Parrish.²² As confirmation that the name was not uncommon, still another Samuel Hopkins, "a youth," having been granted a certificate by the Deer Creek

¹⁸ Alexis de Tocqueville, *Democracy in America*, ed. Phillips Bradley (2 vols., New York, 1945), 1:294–95.

¹⁹ Mintues, Gunpowder Monthly Meeting, Apr. 22, 1747, 14. All references to the records of Quaker meetings are on microfilm at the Friends Historical Library at Swarthmore College, Swarthmore, Pa.; in all cases the minutes of the monthly meetings cited are to those of the men's meetings.

²⁰ The genealogy of the Maryland Hopkinses is, on the whole, accurately presented in Lawrence Beckley Thomas, comp., *The Thomas Book* (New York, 1896), 346–58.

²¹ Minutes, Gunpowder Monthly Meeting, Oct. 25, 1758, 100; *ibid.*, Nov. 22, 1758, 102.

²² Minutes, Philadelphia Monthly Meeting (hereafter, PMM), June 29, 1759, 169.

Monthly Meeting, located in Harford County, Maryland, was received in Philadelphia in 1762 as an apprentice to John Parrish.²³ Robert and John Parrish were brothers who themselves had come from Baltimore and soon acquired status in the Philadelphia Quaker community. These two brothers married sisters, the daughters of George and Mary Wilson. On April 26, 1765, the Samuel Hopkins who is the object of this search was united in marriage with a third Wilson daughter.²⁴ By 1772 Samuel and Hannah Hopkins had become charter members of the newly constituted Northern District of the Philadelphia Monthly Meeting and were Friends of recognized standing. They performed the variety of duties which Quakers of commitment were expected to carry out: for example, befitting his junior status, Samuel was commissioned in 1766 to sit in the boys' gallery of the meetinghouse "to prevent misbehavior there," a task which he was again called upon to assume two years later.²⁵

How Samuel Hopkins supported his wife and their six children is not totally clear. The training he got as an apprentice with Robert Parrish would probably have qualified him as a tradesman or shopkeeper. In the earliest of Philadelphia directories, for 1785, he is listed as a "merchant," a category of considerable generic inexactitude if it is seen as uniting the wealthy importer of goods by the shipload and the much scaled-down shopkeeper.²⁶ As a matter of fact, in the tax assessment records for 1787 and 1788, the assessor

²³ Minutes, PMM, Dec 25, 1761, as adjourned to Jan 16, 19, 1762, 382

²⁴ Scott Lee Boyd, comp., *The Parrish Family* (1935, reprint, Newark, Ohio, 1988), 72-73, Minutes, PMM, Feb 22, 1765, 8, Mar 29, 1765, 13, and Apr 26, 1765, 19

²⁵ Minutes, PMM, July 25, 1766, 107, and Dec 30, 1768, 290 The indexes in the successive volumes of the minutes of his monthly meeting reveal Samuel Hopkins's steadily increasing involvement in the business of this meeting until the summer of 1789 and his virtual disappearance from the records thereafter During the period from 1765 to 1771, he is separately mentioned nine times, from 1772 to 1781, sixty-six times, from 1782 to 1789, forty-five times, but only twice in each of the two periods from 1789 to 1795 and 1795 to 1804

²⁶ MacPherson's *Directory for the City and Suburbs of Philadelphia* (Philadelphia, 1785), 65 In 1772 Robert Parrish advertised wares for sale opposite the Golden Swan Tavern on Third Street, "a few doors above Arch Street" Interestingly enough, he passed for an inventor, offering for sale a device he "made" "ROLLING SCREENS, for cleaning wheat and flaxseed, consisting of four different sorts of wire, each calculated to the greatest exactness and found by experience to answer the purpose" *Pennsylvania Gazette*, Aug 5, 1772 Whether merchant, inventor, or mere tradesman, Robert Parrish was disowned in 1779 after protracted proceedings for "omitting or delaying to pay his just Debts agreeable to his Contract" and for "vindictive warmth of temper" Minutes, PMM (Northern District), Mar 23, 1779, 356-57 He reformed with age and was reinstated in 1802 Ibid, July 27, 1802, 497-98

settled on the latter, less grandiose designation for Samuel Hopkins.²⁷ In the first United States census of 1790, as a head of household in the middle district of Philadelphia stretching from the north side of Chestnut Street to the south side of Race Street, he is identified as "Pott Ash Maker."²⁸ In the city directories for the period 1791 through 1796, Samuel Hopkins appears at 43 Mulberry (or Arch) Street, on the north side between Front and Second Streets, having the trade of a "pot-ash maker" or "pot-ash manufacturer"; in 1797 he is recorded in residence at that same address, but without any occupation; he is listed there again in 1798, sheltered this time by the description of "gentleman"; however, in the directories for succeeding years, as well as in the tax assessment records, he and his family drop entirely out of sight.²⁹ This passage from merchant or shopkeeper to potash maker to gentleman to anonymity corresponds with the particular trajectory that Samuel Hopkins's career actually took.

Potash, at least the eighteenth-century variety, was a crude form of potassium carbonate. Pearlash, so called because of its pearlish or gray-to-white sheen, was a superior grade of potash that commanded a higher price when brought to market. If the word "potash" is broken into its two separate parts (as was often the practice in eighteenth-century writings), a strong hint is provided concerning the means of production. During land clearing the felled timber that was not used for lumber or fuel was burned in huge bonfires; the ashes were segregated and saturated with water in a trough, and the resulting mixture was subjected to intense heat in containers that Hopkins and his contemporaries more often than not referred to as pots or kettles, but which actually amounted to cauldrons because of their size. The

²⁷ Ledger, Philadelphia County Tax Assessment, South Mulberry Ward, 1787, 4, Philadelphia City Archives (hereafter, PCA), *ibid*, 1788, 5.

²⁸ U.S. Census, 1790, Philadelphia County, manuscript lists on microfilm.

²⁹ Clement Biddle, comp., *The Philadelphia Directory* (Philadelphia, 1791), 60; James Hardie, comp., *Philadelphia Directory and Register* (Philadelphia, 1793), 67; Stephen's *Philadelphia Directory for 1796* (Philadelphia, 1796), 89; Cornelius William Stafford, comp., *The Philadelphia Directory for 1797* (Philadelphia, 1797), 92; Cornelius William Stafford, comp., *The Philadelphia Directory for 1798* (Philadelphia, 1798), 73. Beginning in 1789, the tax assessor omitted any occupation for Samuel Hopkins, whose last appearance on the tax rolls was in 1798. Ledger, Philadelphia County Tax Assessment, South Mulberry Ward, 1789, 4, PCA; *ibid*, 1798, 7.

residue in the pot was potash, a black substance that with refluxing and the application of further heat to eliminate impurities evolved into pearlsh.³⁰

One authority would put potash in a class by itself as "America's first industrial chemical."³¹ From the vast forests that covered New England and portions of New York and Pennsylvania came the raw material which, through a primitive process accessible to the enterprising farmer or the frontier storekeeper, yielded an ingredient of value in the manufacture of soap, in glassmaking, in dyeing fabrics, and in the production of saltpeter for gunpowder. Its particular importance in furnishing a detergent that could be used in the cleansing of fibers and textiles induced Great Britain, largely denuded of its forest reserves, to encourage its American colonies to export potash in increasing quantities to the mother country. Tariff concessions were granted, and, in fact, potash continued to be a major American export well into the nineteenth century.³²

It is against the background of increasing and even urgent demand for potash at the end of the eighteenth century that Samuel Hopkins's decision to abandon a life of security for one of risk to his family and himself should be judged. How and when precisely he perfected his new technique for making potash which he was soon to promote as a revolutionary breakthrough is an unresolved mystery. He was not alone, of course, in focusing on the moneymaking potential of potash. In his *View of the United States of America* published in 1794, Tench Coxe confidently assured his readers that "the expence of clearing an acre of land is fully and completely reimbursed, by the net sales of the pot ashes or pearl ashes, which can be made from the wood ashes, collected after thus burning the trees." This was a message targeted at foreign investors for whom Coxe provided the

³⁰ Robert V. V. Nicholls, "The Society of Arts and the Production of Potash in America," *Journal of the Royal Society of Arts* 128 (1979), 58–59, Michael Williams, *Americans and Their Forests: A Historical Geography* (Cambridge, 1989), 74–75, Robert P. Multhauf, "Potash," in *Material Culture of the Wooden Age*, ed. Brooke Hindle (Tarrytown, N.Y., 1981), 227–28.

³¹ Paynter, "First U.S. Patent," 19, see also William L. Roberts III, "American Potash Manufacture Before the American Revolution," *Proceedings of the American Philosophical Society* 116 (1972), 383 ("the principal industrial chemical of the eighteenth century").

³² Nicholls, "Society of Arts," 59–64, Multhauf, "Potash," 238, Harry Miller, "Potash from Wood Ashes: Frontier Technology in Canada and the United States," *Technology and Culture* 21 (1980), 194–200, Brooke Hindle, *The Pursuit of Science in Revolutionary America, 1735–1789* (Chapel Hill, N.C., 1956), 207–9. In modern commercial usage, "potash" is a generic term applied broadly to all potassium-based raw materials. Potash—chiefly potassium chloride—is now extracted from mines rather than trees, and its preponderant use is as a fertilizer.

glittering summation that, "when considered upon a scale of 100,000 acres," the conversion of trees to potash was a form of alchemy, leading to "a new creation of property."³³

In reviewing the application that Samuel Hopkins submitted for a patent in 1790, Thomas Jefferson would have been in an unusual situation. To begin with, he had harbored misgivings about monopolies of any kind, especially those that might deny or limit a general public benefit. Second, he was required to apply statutory provisions and standards that had not previously been interpreted. Thus, in a balancing calculation, he and his two colleagues in the cabinet were invited by the language of the patent statute to determine whether Hopkins's discovery was "sufficiently useful and important" to justify granting him a form of monopoly protection for fourteen years. Finally, Thomas Jefferson did not come to this inquiry uninstructed, for he had the benefit of an earlier investigation of his own concerning the usefulness of potash.

As minister to France, Jefferson commissioned Dominique Audibert of Marseilles to proceed with an experiment that they had previously discussed in person, the purpose of which was to determine the feasibility of substituting potash for barilla (*la soude* in French) in the manufacture of soap. Jefferson had arranged through an American merchant for the delivery to Audibert of a large enough quantity of potash to facilitate the experiment. The results were not, however, what Jefferson had hoped for. In Audibert's report to Jefferson, which he submitted in January 1789, Audibert put forward several objections concerning the future use of *potasse* by soap manufacturers in that locality. Marseilles was accustomed to making soap according to a method transmitted from Spain using barilla, or carbonate of soda, derived from the ashes of maritime plants, which was much more plentiful in Marseilles than potash. As a constituent of soap, potash tended to attract moisture and cause the soap to dissolve, whereas *la soude* did not

³³Tench Coxe, *A View of the United States of America* (Philadelphia, 1794), 454–55. But for smaller farmers Coxe was perceptive enough to point out that slash-burning to produce potash might rob the soil of necessary nutrients. *Ibid.*, 453–54. The boldness of Coxe's vision and the enlistment of European participants in the backwoods speculative boom are highlighted in Peter Mancall, *Valley of Opportunity: Economic Culture Along the Upper Susquehanna, 1700–1800* (Ithaca, N.Y., 1991), 166–67, 213–16.

have this defect. As the clincher, potash was usually a more expensive ingredient than the rival substance.³⁴

Even so, Jefferson had not become completely discouraged about the potential of potash—either at the time of Hopkins's patent application or for some years afterwards. Failing perhaps to realize that the farther south one went in the United States, the greater the absence of hardwood trees, and therefore the less promising the opportunity for producing quality potash, he toyed with the idea of establishing an ashery at Monticello. "Till [the canal] be done," he ruminates in 1793, "I cannot begin my pot-ash plan which I also have at heart as a resource for money subsidiary to the farm."³⁵ Two years later he was proceeding on a different tack: "I thought for a while of taking up the manufacture of pot-ash, which requires but small advances of money. I concluded at length however to begin a manufacture of nails, which needs little or no capital"³⁶

Samuel Hopkins wrote to Jefferson almost a year after the secretary of state had delivered the first patent to him. Jefferson had moved to Philadelphia with the national government, while Hopkins again found himself temporarily in New York City. From the following lines he sent to Jefferson, we can get some feeling for this Quaker's activity in the interval:

Thomas Jefferson. I take the liberty of offering for thy acceptance an address to the Manufacturers of Pot and Pearl-ash, containing an account of the process and according to the Principles of my Patent. Thou wilt observe my having succeeded in Canada, and by accounts from those who have commenced operating I am flattered to believe that the business is in a fair way of fully answering what I have held out. After making some further arrangements here [I] propose returning to Philadelphia when [I]

³⁴ Jefferson to Dominique Audibert, Nov. 24, 1788, *Papers of Thomas Jefferson*, 14:279; Audibert to Jefferson, *ibid.*, 354–55, 508–9. For the differences between potassium carbonate and sodium carbonate, see Nicholls, "Society of Arts," 59, and Multhauf, "Potash," 230–31.

³⁵ Jefferson to Thomas Mann Randolph Jr., May 19, 1793, *Papers of Thomas Jefferson*, 26:65.

³⁶ Jefferson to M. De Meusnier, Apr. 29, 1795, an excerpt quoted in *Thomas Jefferson's Farm Book*, ed. Edwin Morris Betts (Princeton, N.J., 1953), 495. In Jefferson's entries on farming matters, he acknowledges the superior results realized by producing pearlash "in Hopkins's way." *Ibid.*, 117. Jefferson's hesitancy in committing to the production of potash or pearlash is apparent in his letter to Joseph Leacock, Nov. 24, 1792, *Papers of Thomas Jefferson*, 24:661 ("a business in which I wish to engage moderately and cautiously").

intend personally to wait on thee, and hope I shall have it in my power to give farther satisfaction. In mean time believe me, Thy Assured Friend,

Saml Hopkins³⁷

The New York Public Library has the only copy known to exist of the publication that Hopkins sent Jefferson. Unfortunately, it lacks certain drawings that were to have accompanied the text as attached exhibits and that presumably were an essential part of the specifications submitted in compliance with the act of 1790. In the all-inclusive style of that day, this pamphlet carried a hefty title: *An Address to the Manufacturers of Pot and Pearl Ash, with an Explanation of Samuel Hopkins' Method of Making the Same; Together with Drawings of a Furnace &c. &c.*³⁸ Just a month off the press when Hopkins forwarded it to Jefferson, the *Address* appears to have been the joint promotional effort of Hopkins and his son-in-law, William Shotwell, who also acted as Hopkins's agent and attorney-in-fact. Prominently displayed in the *Address* were the 1790 patent law and Hopkins's patent, each in full text. The obvious intent in publishing this pamphlet was to stimulate the interest of prospective licensees in this new process.

Most of the *Address* was devoted to a detailed exposition of the Hopkins method and the construction of the furnace, all of which seems more like a recipe from a cookbook than a description of the first patented invention in the United States. The *Address* ended oddly with two qualifications that illustrate how precarious the enterprise had turned out to be in the months following the issuance of the patent. First, in recognition of the possibility that "many improvements may be made," a special inducement was offered to the "ingenious": the three best essays submitted on the subject, as determined in the opinion of "two or more judicious persons, to be nominated by the governor of the State of New York," would be rewarded by the grant of a free license to proceed in accordance with the patent principles for a period as long as seven and one-half years. Second, Shotwell, Hopkins's son-in-law, stated that in the patentee's absence on "a northern

³⁷ June 27, 1791, *Papers of Thomas Jefferson*, 20:580.

³⁸ *An Address to the Manufacturers . . .* (New York, 1791). The requirement for a detailed specification is contained in section 2 of the 1790 act; *U.S. Statutes at Large*, 1:110.

journey," he felt himself unable in his capacity as agent to authorize various proposed deviations "from the original plan." He assured licensees that on Hopkins's return the benefit of any and all changes or privileges to which the patentee might then be prepared to accede would be uniformly confirmed to all of them.³⁹

Samuel Hopkins understood that he had won only a partial victory by obtaining in the United States, for a period of fourteen years, exclusive control of his discovery, the core concept of which the patent itself summarized as "burning the raw ashes previous to their being dissolved and boiled in water." The northern journey he embarked on in March 1791 was for the purpose of securing similar protection for his discovery in Canada, since what was about to become Lower Canada had to be looked upon as a prime source of potash and pearlash, competing vigorously in the export trade with the United States. As a matter of fact, shipments of potash and pearlash from the ports of Quebec and Montreal would bulk large until well into the second half of the nineteenth century, long after this frontier industry had ceased to be commercially feasible in the United States. The slower pace of settlement in Canada and the abundance of hardwood forests furnishing the basic raw material continued for many years to make possible the production of potash in the traditional manner and at a competitive price.⁴⁰

Thanks to an extensive file preserved in the National Archives of Canada, in Ottawa, Samuel Hopkins is visible as a lobbyist assiduously at work on his own behalf. For connoisseurs of legislative history, this material also provides an opportunity to observe how the authorities in Canada coped with more than one petitioner and eventually, after innumerable reports, experiments, meetings, draft bills, amendments, and roll calls, crafted legislation that gave Hopkins not precisely what he had applied for, but something close to half a loaf. Nor can the result be hailed as the first Canadian patent; rather, in imitation of the ancient royal prerogative, it amounted to an exclusive privilege or monopoly granted by the legislature, which on this occasion would be paradoxically shared by five persons.⁴¹

³⁹ *Address to the Manufacturers*, 26–27.

⁴⁰ Miller, "Potash from Wood Ashes," 194–98; Nicholls, "Society of Arts," 62.

⁴¹ Lower Canada did not have a patent statute until 1823. P. J. Federico, "Historical Patent Statistics," *Journal of the Patent Office Society* 46 (1964), 98–99. The distinction between monopolies granted by special legislation and patents that issued under general legislation is developed in Victor S. Clark,

Either by a letter of his own or through his agent in Quebec, a Mr. Shephard, Samuel Hopkins communicated with a formidable presence in Canadian history—"the Right Honorable Guy Lord Dorchester, Captain General and Governor-in-Chief of the Colonies of Quebec, Nova Scotia, New Brunswick and their dependencies, Vice Admiral of the Same, General and Commander-in-Chief of all His Majesty's Forces in the said Colonies and the Island of Newfoundland."⁴² While it would have been wholly inappropriate for a Quaker like Hopkins, disdaining rank and title, especially of the martial kind, to lay it on in this fashion, such was the elaborate salutation chosen by Angus Macdonell, a Canadian who sought protection for his potash process at the same time Hopkins was doing so for his.⁴³ In the late autumn of 1790, Dorchester referred papers he had received from Hopkins to the Agricultural Society for evaluation. The secretary of that society advised his lordship that a committee had inquired into the matter and concluded that "the introduction of Mr. Hopkins's improved method of making pot and pearl ashes would be of benefit to this Province by augmenting the exportation of that valuable commodity from this Country to the Parent State, where it is in great demand."⁴⁴

Two days after this report was delivered, Dorchester's secretary sent a letter from Quebec to Samuel Hopkins in which he disclosed that "overtures in the same branch of business are made by two other persons." If Hopkins was willing, it was proposed that their applications and his be submitted "to the Legislature at their next session between the months of January and May." The secretary cautioned that "no hopes can be given to either for a

History of Manufactures in the United States (3 vols., New York, 1929), 1:47-53, 312-14. On the early English patent custom and the significance of the Statute of Monopolies (1623), see Edward C. Walterscheid, "The Early Evolution of the United States Patent Law: Antecedents (Part 2)," *Journal of the Patent and Trademark Office Society* 76 (1994), 849-80.

⁴² Dorchester's career, accomplishments, and frustrations are comprehensively dealt with in the *Dictionary of Canadian Biography* (12 vols., Toronto, 1966-90), vol. 5 (1801-1820), s.v., "Carleton, Guy, 1st Baron Dorchester."

⁴³ "Petition of Angus McDonell [*sic*], supported by an affidavit of Angus Macdonnell," Nov. 22, 1790, in Records of Parliament, Legislative Council, Lower Canada, National Archives of Canada, Ottawa, RG14, A-1, vol. 7 (hereafter, NAC)

⁴⁴ Extract from the Minute of the Board of Directors of the Agricultural Society, Apr. 25, 1791, containing the text of the report to Dorchester dated Nov. 16, 1790, NAC. Hopkins's agent at the time of the first application is identified in this minute as William Shephard.

purchase of the secret, or any other encouragement than the usual monopoly granted to useful inventions for a term of years.”⁴⁵

By no later than March 21, 1791, Hopkins was in Quebec City, accompanied by Joseph Moore, an itinerant Quaker minister who felt very much at home in remote places and who would lend support to his coreligionist and friend in the latter’s venture to exploit his discovery. On that date, Samuel Hopkins presented his formal petition to the governor and the Legislative Council of the province of Quebec in which he asserted that, “without an increase of Labour or more expensive Apparatus than usual,” those utilizing his newly patented process could procure “a much greater Quantity of pure Akalai from a given Quantity of Ashes than can be obtained by the usual Process.” Appealing to “the Conviction of every unprejudiced Person,” he volunteered immediately to furnish proof of his claim that he could increase more efficiently the production of “so valuable an Article of Commerce, and particularly so beneficial to the Manufactories of Great-Britain.” The prayer of the petition was for “an exclusive privilege . . . similar to that which he has obtained from the United States.”⁴⁶

Thereupon, Angus Macdonell, the local contestant from the parish of St. Foix, and Samuel Hopkins, the Quaker from Philadelphia, were locked in a struggle, each trying to persuade the specially appointed committee of the Legislative Council that his process for producing high-grade potash on an economical basis was superior to that of the other. For advice on the technical aspects of these competing submissions, the committee turned to a panel of experts headed by J. Mervin Nooth, superintendent general of the British and Foreign Hospitals and physician to the British forces. After several preparatory sessions of the committee, the Legislative Council assembled as a committee of the whole during the last week of April. On Tuesday, April 26, Samuel Hopkins and Angus Macdonell were permitted to attend while a separate bill was introduced on behalf of each of them and read “in both languages,” but they were invited to withdraw, as the Council planned to interrogate its experts.

⁴⁵ Henry Motz to Samuel Hopkins, Nov 18, 1790, NAC

⁴⁶ “The Petition of Samuel Hopkins of the City of Philadelphia to the Governor and Legislative Council of the Province of Quebec,” Mar 21, 1791, NAC Hopkins had brought with him an exemplified copy of his patent, as certified in Philadelphia Jan 28, 1791, by Henry Remsen Jr in his capacity as clerk for the Commissioner for Promoting Useful Arts Moore’s presence is noted more than once in the proceedings in Quebec, for some sense of Moore’s missionary activities, see Francis R Taylor, *Life of William Savery of Philadelphia, 1750–1804* (New York, 1925), 60–116 passim

The first question was put by William Smith, a member of the Council as well as chief justice of the province—and a man of intellect, resourcefulness, and duplicity. Smith had previously served as chief justice of New York, an appointment he had garnered following his declared allegiance to the Crown. At that time, as a Tory convert, he had formed a close friendship with the commander in chief of the British forces occupying New York City, Sir Guy Carleton, the future Lord Dorchester.⁴⁷ At the committee hearing Smith asked Dr. Nooth whether the inventions and processes of Hopkins and Macdonell were “different,” to which question he received the response that “the principle is the same but the application of the principle is different.” Do they deserve, Smith persisted, “the reward of an exclusive manufacture for the term of 14 years?” Nooth dismissed that thought out of hand, thereupon notifying the Council that it was his settled intention “to publish a Treatise on the manufacturing of Pearl Ash and carry the principle to the utmost extent he thinks it capable of.” Confronted with this unexpected disclosure by their leading expert, the members of the Council asked Nooth if he believed it “beneficial to the Province to grant an exclusive privilege to either Mr. Hopkins or Mr. Macdonell for any term.” Since he planned to waste no time in proceeding with his own project, Nooth expressed the opinion that it was “useless” to give either of them a privilege “for any term of years whatever exceeding one or two years.” Having heard enough from its supposedly disinterested expert, the Council excused Nooth and his colleagues.⁴⁸

The Council concluded that the petitioners had shouldered their burden of demonstrating that their discoveries had sufficient utility to merit legislative protection. It remained only to agree on how long that protection should last, and the Council, never apparently ready to match the period of fourteen years under the American statute, considered and rejected at the

⁴⁷ *Dictionary of Canadian Biography*, vol. 4 (1771–1800), s.v., “Smith, William”; *The Diary and Selected Papers of Chief Justice William Smith, 1784–1793*, ed. L.F.S. Upton (2 vols., Toronto, 1965), 1:xiii–lv, and 2:xiii–xli.

⁴⁸ *Journal of the Legislative Council*, Apr. 26, 1791, NAC. Nooth is not so quickly dismissed, however, from our attention. A graduate of the University of Edinburgh, he was a much-sought-after physician who, during a long life, doubled as a scientist and inventor. In 1775 he published a paper describing an apparatus which for decades to follow would be used to produce carbonated water. Stationed in New York as superintendent general of the hospitals for the British forces during the American Revolution, he inevitably kept company with the future Lord Dorchester and the turncoat William Smith. *Dictionary of Canadian Biography*, vol. 6 (1821–1835), s.v. “Nooth, John Mervin.”

other end of the spectrum two years and three years, only to settle finally on the period of six years in the ordinance that was sent to Dorchester and that received his assent on April 30, 1791.⁴⁹

His American patent in full force, his Canadian expedition largely a success, the *Address* published and distributed to interested parties, and the demand for potash and pearlash stronger than ever, Samuel Hopkins should have had ample cause for optimism upon his return to New York City in late June 1791. If anything, his appraisal of his prospects in the note he sent to Jefferson in Philadelphia—"the business is in a fair way of fully answering what I have held out"—might be regarded as an example of Quaker caution and understatement. Looking backward over the space of two hundred years, a proponent of the Pittsford Samuel Hopkins concedes that it is impossible to know "how many of the thousands of asheries took out licenses under Hopkins's U.S. and Canadian patents," but argues nonetheless that, "even if a scant few dozen met his terms, he realized a handsome profit."⁵⁰ On the other hand, to be realistic about the prospects of the real Samuel Hopkins, the very number of asheries that were in operation when he obtained his patent in the United States and his later exclusive privilege in Canada undercut that profit calculation, as did the simplicity of the long-utilized process for producing potash which in no way infringed on Hopkins's elaborate and more costly method.

At some point Samuel Hopkins must have realized that, if he were to succeed as he had envisioned, he could not expect money to pour in from licensees who were sold on the idea of constructing his furnace and prepared

⁴⁹ Journal of the Legislative Council, Apr 26, 27, 28, 1791, NAC "An Act or Ordinance to reward Samuel Hopkins and Angus Macdonell and others for their Inventions of two new and improved methods of making Pot and Pearl ashes" appears in full manuscript version in NAC, it may also be found in *Ordinances Made and Passed by the Governor and Council of the Province of Quebec, 1763-1791* (Ottawa, 1917), 254-55 Angus Macdonell had earlier successfully petitioned that three cohorts of his be named along with him in the final legislative act Petition of Angus Macdonell, Apr 23, 1791, and Journal of the Special Committee, Apr 25, 1791, NAC

⁵⁰ Paynter, "First U S Patent," 22 The only facsimile evidence that has come to light of a license granted by the first patentee is a photostatic copy of the original printed form, filled in and signed by Hopkins's son-in-law on his behalf in New York on May 23, 1791 The license, numbered 310, was issued to Eli Cogswell of Castleton, Vermont, only a short distance away from Pittsford By the terms of the printed document every licensee was required to "fix and maintain upon some conspicuous and proper part of the Building [erected to produce potash or pearlash] a Board whereupon shall be printed in large and legible Characters, the Number of this License and the Words following, to wit, Pot and Pearl Ash Works, licensed by Samuel Hopkins " The copy of this particular license is found in the files of the Vermont Historical Society

as a consequence to advance substantial funds of their own. Instead, he himself would have to actively publicize his discovery and demonstrate its usefulness and profitability. To do so, however, required a commitment on his part that became a gamble, and a gamble that placed at risk not only the significant time, labor, and capital he would invest but also his family's resources and welfare. This type of wagering, which nowadays is hailed more often than not as the energizing spirit of entrepreneurship at work, the Society of Friends condemned in Hopkins's day as inconsistent with fundamental Quaker precepts. Take, as an example, this early cautionary instruction of the Philadelphia Yearly Meeting in 1724 to "all Friends, everywhere, [to] be very careful to avoid all inordinate pursuit after the things of this world, by such ways and means as depend too much upon the uncertain probabilities of hazardous enterprises."⁵¹ That admonition would be frequently repeated, and while the word "entrepreneur" did not achieve currency in English in the eighteenth century, the phrase "uncertain probabilities of hazardous enterprises" comes very close to defining the essence of entrepreneurial activity.⁵²

Under this rubric of condemned conduct, all forms of gaming were clearly prohibited, but the proscription extended beyond the card table, the racetrack, and the lottery to reach questionable investment practices, as an English commentator underscored at the beginning of the nineteenth century:

Buying and selling in the public stocks of the kingdom is a practice, which, under particular circumstances, is discouraged also. Where any of the members of the Society buy into the stocks, under the idea that they are likely to obtain better security, as more permanent advantages,—such a transfer of their properties is allowable. But if any were to make a practice of buying or selling, week after week, upon speculation only,—such a practice would come under the denomination of gaming. In this case, . . . it is evident that money would be the object in view; that the issue would be hazardous; and, if the stake or deposit were of great

⁵¹ Minutes, Philadelphia Yearly Meeting, 1681–1748, 296.

⁵² The nearest equivalents in eighteenth-century English usage to entrepreneur were *adventurer*, *projector*, and, maybe most fittingly, *undertaker*. Fritz Redlich, "The Origins of the Concepts of 'Entrepreneur' and 'Creative Entrepreneur,'" *Explorations in Entrepreneurial History* (1st ser.), 1 (1949), 1–7.

importance, the tranquillity of the mind might be equally disturbed, and many temporal sufferings might follow.⁵³

In the light of this Quaker teaching, it must be asked whether there was room in the Society of Friends for the risk taker or, in transposed modern terminology, an entrepreneur or venture capitalist. It is too glib an answer—too close to the stereotype of the Quaker merchant who sought to do good, and ended up doing well—to conclude there was such room, so long as risks were carefully weighed before they were taken and profit accrued to validate the investment. If the realization of profit is the touchstone, we are about to meet a Philadelphia neighbor of Samuel Hopkins, Henry Drinker, a Quaker of impeccable standing, who wagered on what he devoutly reckoned would be a moneymaking venture for himself and his fellow adventurers. Although he may have been a Quaker paragon, Drinker was forced in the end to acknowledge that he had discovered the means of losing a small fortune. Unlike Hopkins, however, it was Drinker's good fortune to have large funds and respectability in reserve and the wisdom to know when to cut his losses.

A somewhat different question to pose is whether these Quaker strictures discouraged innovation and inventiveness. How many Quaker inventors were there, after all, besides the holder of the first patent? That there have been more than a few, in Great Britain and the United States, would hardly seem to carry the day.⁵⁴ No more does the thesis that the Quaker ethic fostered a spirit of inquiry and led to noteworthy scientific accomplishments. Quiet work in the laboratory, especially work that focused on immediate practical results, must be distinguished from leveraged risk taking, just as the quiet and discreet accumulation of wealth through banking and other

⁵³ Thomas Clarkson, *A Portraiture of Quakerism* (3 vols, London, 1807), 1 18–19. For a recent examination of the Quaker business ethic as enforced in a British setting, the principled resistance to gambling and speculation in various forms, and the growing tension in the Quaker community between material success and a religious commitment to other-worldliness, see James Walvin, *The Quakers Money and Morals* (London, 1997), 51–52, 55–57, 74–76, 207–10.

⁵⁴ Dobyns, *Patent Office Pony*, 12–13, Eleanor Morton, *Josiah White Prince of Pioneers* (New York, 1946), 250–52, Arthur Raistrick, *Quakers in Science and Industry* (New York, 1968), 130, 189–217.

commercial activities must be distinguished from the rough and tumble of aggressive capitalism.⁵⁵

In his study of the Quaker scientific contribution in colonial Philadelphia, Brooke Hindle writes that "in leadership. . . and in creative scientific work, the well-to-do Quakers did not excel." Those whom he did identify as advancing the cause of science were "peripheral Quakers, former Quakers, and near-Quakers," such as Charles Thomson, Edmund Physick, Thomas Bond, John Bartram, and David Rittenhouse. The cumulative influence in support of scientific undertakings was, as he put it, "more effective at the periphery of the Quaker circle than at its center."⁵⁶ And much the same perspective might be said to exist for the manifestation of the entrepreneurial instinct in the Philadelphia Quaker community at the end of the eighteenth century. While a comprehensive assessment of the discipline of meeting in particular cases is needed, it is possible on the basis of available evidence to apply the Hindle thesis within those defined boundaries of time and circumstance. The high-risk takers would then be recognized as fringe Quakers, some of them frontiersmen in more ways than one, who were actually disowned for their imprudence or heterodoxy—men like George Clymer, Samuel Meredith, Samuel Wallis, Samuel Preston, and William Cooper. Though never disowned and, from all that one can tell, a conscientious Quaker until his death, Samuel Hopkins would have to be enrolled as a member of this latter group.⁵⁷

⁵⁵ The study of failure can illuminate such otherwise abstract concepts as entrepreneurship, innovativeness, and risk taking. By way of illustration, eighteenth-century British merchant firms, more so than their American counterparts, were professional risk takers that not infrequently suffered the consequences of extending credit at long distance. Julian Hoppit, *Risk and Failure in English Business, 1700–1800* (Cambridge, 1987), 9–17, 96–103. The competitive and entrepreneurial spirit among Philadelphia merchants as a class is documented in Thomas M. Doerflinger, *A Vigorous Spirit of Enterprise: Merchants and Economic Development in Revolutionary Philadelphia* (Chapel Hill, N.C., 1986), 56–59, 245–48. For an analysis of some of the contradictions inherent in Quaker "entrepreneurism," see Barry Levy, *Quakers and the American Family* (New York, 1988), 96–100.

⁵⁶ Brooke Hindle, "The Quaker Background and Science in Colonial Philadelphia," *Isis* 46 (1955), 244–45, 248.

⁵⁷ To appreciate William Cooper as exemplar, one must turn to Alan Taylor's admirable *William Cooper's Town: Power and Persuasion on the Frontier of the Early American Republic* (New York, 1995), 16–21, 94–95, 115–17, 153–54. See also Jerry Grundfest, *George Clymer: Philadelphia Revolutionary, 1739–1813* (New York, 1982), 7–20; Mancall, *Valley of Opportunity*, 98–100; and David W. Maxey, "Of Castles in Stockport and Other Strictures: Samuel Preston's Contentious Agency for Henry Drinker," *Pennsylvania Magazine of History and Biography* (hereafter, *PMHB*) 110 (1986), 417–20, 433–34.

In the last decades of the eighteenth century, Henry Drinker and Samuel Hopkins lived in the same neighborhood. Ten years Hopkins's senior and the husband of a dedicated diarist who would leave a precious legacy to historians, Henry Drinker was a commanding—even intimidating—presence in the Philadelphia Quaker community. He made money at home and abroad as a partner in the merchant firm of James and Drinker, which excited early patriotic attention by trying unsuccessfully to bring taxed tea through the port of Philadelphia. Together with sixteen other prominent Friends whose loyalty to the revolutionary cause was deemed suspect, Drinker spent the winter of 1777–78 in enforced exile in Winchester, Virginia. After the war was over, this resolute Quaker quickly recovered status and position. Of course, among his own kind Drinker always remained a revered figure, serving as elder of the Philadelphia Monthly Meeting and treasurer of the Yearly Meeting. Emblematic of his acceptance in the community at large, he was elected in 1786 a member of the American Philosophical Society and in 1789 a member of the Common Council of Philadelphia. His business interests included not only trading as a merchant in a broad range of goods but also ownership of an iron foundry in Atsion, New Jersey, and of vast land holdings in the remote back country of Pennsylvania and New York.⁵⁸

The imposing Drinker house was located on the northwest corner of Drinker's Alley and Front Street—Drinker's Alley paralleling, at fifty yards to the north, today's picturesquely preserved Elfreth's Alley. Samuel Hopkins and his family occupied quarters a block away on Arch Street; their house was a short distance from the Delaware River and the ferry landing at the foot of Arch Street. These neighbors encountered each other often, on the street and at meeting, at least until Hopkins applied for his patent and suddenly embarked on his new career as inventor and entrepreneur.⁵⁹

Through John Parrish, Drinker learned in June 1790 about the urgent personal business that had taken Hopkins to New York. From the letter Drinker sent to William Shotwell, Hopkins's son-in-law, it appears that his

⁵⁸ Arthur L. Jensen, *The Maritime Commerce of Colonial Philadelphia* (Madison, Wis., 1963), 200–204, John W. Jordan, ed., *Colonial Families of Philadelphia* (3 vols., New York and Chicago, 1911), 1:874–75.

⁵⁹ Unfortunately for our purposes, Hopkins abounds in Elizabeth Drinker's diary because of close connections that the Drinkers had with a numerous family of the same name in Haddonfield, N.J. Particular care must, therefore, be taken to keep her references to the Hopkinses straight. Elizabeth Drinker, *The Diary of Elizabeth Drinker*, ed. Elaine Forman Crane (3 vols., Boston, 1991), 3:2164–65.

neighbor had not confided in Drinker about his great invention and his conviction that it would make him rich. Introduced to this ambitious scheme, Drinker was guarded in wishing Hopkins success. Unconsciously borrowing some of the probative requirements in the recently enacted patent statute, he expressed the hope that "the present important discovery, if it really proves so, of which there seems great probability, may be so managed . . . that he, as of right he ought, may derive therefrom a liberal reward for his ingenious and interesting Discovery."⁶⁰

In almost all that he did and believed, Henry Drinker was a model of restraint. He recoiled from rash behavior in others, as well as from its near cousin, unbridled enthusiasm. There was, however, in Drinker's own record one exception when despite his innate caution he allowed fervor to overcome judgment, and it occurred at the same time that Hopkins was about to begin his own risky venture. By the summer of 1790, Henry Drinker had persuaded himself that maple sugar would replace cane sugar on the domestic table and that this conversion would yield both spiritual and financial benefits to those who bet on maple sugar. His calculation was a deceptively simple one: the stands of maple trees he owned in northeastern Pennsylvania provided an unlimited source of raw material; the kettles manufactured at his Atsion foundry would be purchased for use in the maple-sugaring process; and the institution of slavery, which as a Quaker he abominated, would be fatally weakened in the West Indies when the demand for its main crop, sugar cane, fell off.

A veritable maple sugar craze seized land speculators in Philadelphia and points north during the last decade of the eighteenth century. Inspired by Benjamin Rush, whose interests extended well beyond medical matters, and William Cooper, the founder of Cooperstown, New York, and father of James Fenimore Cooper, Drinker brought together a syndicate of prominent Philadelphians to invest in this noble undertaking called the "Union Farm," which would be carried out on Drinker's land along the upper Delaware River in northeastern Pennsylvania. The likes of Samuel Meredith, John Nicholson, Benjamin Rush, Robert Morris, James Wilson, Tench Coxe, Timothy Pickering, George Clymer, and Richard Peters signed up as shareholders in the Union Farm, and almost totally as a result of Henry

⁶⁰ Drinker to Shotwell, June 9, 1790, Henry Drinker's letterbook (hereafter, Drinker LB), 1790-1793, Drinker Collection, Historical Society of Pennsylvania (hereafter, HSP), 32.

Drinker's money, direction, and perseverance (it might have been thought obstinacy), the experiment continued for five years. If, when the operation was finally closed down, Drinker hadn't exactly lost his shirt, the Union Farm nevertheless confirmed for him the danger of overzealousness.⁶¹

Both forest products, maple sugar and potash, were strangely conjoined. While some may have hesitated over their dual use, potash kettles, heavy and large in volume, could be employed in the making of maple sugar.⁶² Moreover, the disappointed investor in the maple sugar industry frequently turned to the production of potash and pearlash as more marketable commodities. Drinker did not make that shift, but William Cooper, James Wilson, and Samuel Meredith did. As Samuel Hopkins trudged through the wilderness, promoting his patent, he saw firsthand the competing uses to which the maple tree was being put.⁶³

Notwithstanding the leading role he had played at the outset, William Cooper had pretty well given up on the maple sugar business by the middle of 1792.⁶⁴ Drinker had liberally subsidized Cooper, so much so that their relationship had become strained. "Sugar for those gentlemen in London" still figured in Cooper's thinking in a letter he sent Drinker on June 7, 1792, but it was obvious from the contents of this message that producing potash and pearlash now struck him as the more remunerative endeavor. Samuel Hopkins and Joseph Moore, he wrote, had arrived at his house in Cooperstown two weeks previously, and Hopkins had erected a furnace "on the Patent Plan." Several local potash makers had attended a demonstration, "and for the most part are of the opinion that it is an advantageous way of working Ashes." The principal obstacle that Hopkins faced, however, was "the high price of the privilege" he charged. Even if the patent mode increased by 50 percent the refined yield of pearlash from "common field ashes," as Cooper was quite ready to conclude, the immediate cost of the

⁶¹ David W. Maxey, "The Union Farm: Henry Drinker's Experiment in Deriving Profit from Virtue," *PMHB* 107 (1983), 607-29; Taylor, *William Cooper's Town*, 119-33.

⁶² *Letters of Benjamin Rush*, ed. L. H. Butterfield (2 vols., Princeton, N. J., 1951), 1:504, and Roberts, "American Potash Manufacture," 392.

⁶³ See Samuel Hopkins to Benjamin Rush, June 4, 1794, Manuscript Correspondence of Dr. Benjamin Rush, Library Company of Philadelphia (hereafter, LCP) but on deposit at HSP, vol. 21, 117, in which Hopkins, writing from Wilkes-Barre, described the manufacture of maple sugar in country conditions where troughs conveying the sap split and sugar was burnt by fire blown against the sides of the boilers.

⁶⁴ Taylor, *William Cooper's Town*, 132-33.

license outweighed the long-term advantage, for "it is not how shall 2 manage my business the next season, but how shall 2 smooth over my Engagements in the present one that most men calculate." He had urged his guest to be more realistic: "To Samuel Hopkins it is a great Affair, but not so with the Manufacturer, who has divers other Pursuits and frequently makes that as a work done by the bye" Cooper added that Moore was a great help to Hopkins, lending credibility by his presence: "The Inhabitants here are much pleased by Joseph, who wants to return to his home."⁶⁵

Why did Joseph Moore want to return home? It is possible that Moore, more a minister than a salesman, had grown uncomfortable in Hopkins's company. That something was amiss, in strict Quaker analysis, is apparent in a letter Henry Drinker wrote a month later to his absent neighbor, who was presumably still in Cooperstown:

To hear that the minds of the People are more favourably disposed towards thee than heretofore, and that thou hast convinced them of a real utility and benefit to be derived from thy new mode, will be truly satisfactory to me, but my friend let me enjoin thee carefully to avoid what has produced difficulties and painful embarrassments heretofore, that of hurrying over things, leaving them in an imperfect unexplained state; as thy real friend, let me urge this to thy most serious unremitted attention assuring thee that my Spirit has been much and often with thee, not only on thy account, for whose welfare I am truly concerned but also for the cause of Truth; which thou must be sensible may be deeply affected and has been measurably so by thy movements on the present matter.⁶⁶

⁶⁵ Cooper to Drinker, June 7, 1792, Drinker Collection, HSP.

⁶⁶ Drinker to Hopkins, July 27, 1792, Drinker LB, 1790-93, Drinker Collection, HSP, 364. No later than this letter and, in all likelihood, at least a year before, Drinker and two other subscribers agreed to test Hopkins's patent and its cost effectiveness on lands they owned, subject, however, to conditions that were carefully spelled out in Drinker's handwriting, apportioning the risk of failure about equally between Hopkins and the three coventurers. If the experiment was ever carried out, one must assume from the tone of this letter that it was not a success. Undated proposals of Samuel Hopkins signed by Henry Drinker, Samuel Field, and B.W. Ball, Manuscript Correspondence of Dr. Benjamin Rush, LCP, vol. 21, 118.

Though he signed himself "Thy loving friend," imparting a degree of affection not ordinarily evident in Drinker's voluminous business correspondence, these were sobering words for Hopkins to read. As soon as he saw "the cause of Truth" invoked, Hopkins had reason to know that his entrepreneurship was under the watchful eye of meeting. Very likely this is the only letter he ever received from Drinker; when Hopkins was in residence, Drinker had to walk but a few steps down the street in order to make his concerns known to his neighbor. There is every reason to be grateful for this pointed communication because it provides a particular glimpse of Hopkins and his personal history, revealing him to be an improviser who, in his enthusiasm for new ventures, failed to measure the downside.

To counter one part of Drinker's criticism, Hopkins was determined that nothing about his discovery would be left "in an imperfect unexplained state." In a notice to the public that appeared in a Philadelphia newspaper in the summer of 1793, Hopkins composed a detailed explanation about how his "process differs from the usual method," while offering "some directions to such as may incline to adopt it." His claims in the two-column spread were supported by a certificate signed by some of the leading lights in Philadelphia's scientific establishment, including David Rittenhouse, Benjamin Rush, James Hutchinson, and Caspar Wistar. They testified that they had "attended carefully to the result of several comparative experiments, which were made to ascertain the nature and merits of Samuel Hopkins's process for manufacturing pearlshes," and that they were of the opinion that his method was superior to "the ordinary method of leaching and boiling down the black leys." They also stated that the furnace erected according to his instructions "was happily construed to effect the calcination of wood ashes." Hopkins was at pains to call attention to the "names and characters of my fellow citizens that have signed the foregoing certificate," pointing out that "they are allowed to be well acquainted with chemistry."⁶⁷

Within a matter of weeks after the publication of this promotional piece, the first fatalities of the yellow fever epidemic were recorded in the very quarter near the waterfront in which Drinker and Hopkins lived. For those who survived this appalling experience, normal occupations would resume,

⁶⁷ *Gazette of the United States*, July 3, 1793

but only slowly, the following year.⁶⁸ On a Sunday in April of 1794, Elizabeth Drinker wrote in her diary that her husband's nephew, Joseph Drinker, had taken tea at their house and that "he is going with S. Hopkins to build potash works for John Nicholson [*sic*]." ⁶⁹

John Nicholson and Robert Morris were partners, and appropriately so. They both were masters of public finance but ruinous speculators with their private fortunes; both suffered from acute far-sightedness and gambled everything on a vision of their country's future that, to the extent that it ever materialized, was generations away; both were lodged in debtors' prison, with Nicholson dying there; and both left a legacy of protracted litigation over contested land titles and liens that lasted in Pennsylvania well into the middle of the nineteenth century. In many respects a true visionary whom a sympathetic biographer has sought to redeem as an "entrepreneur," Nicholson provided financial backing for start-up enterprises and inventors—John Fitch and Oliver Evans being two recipients of his support.⁷⁰

Nicholson had the very project for the holder of the first patent. He commissioned Hopkins to produce pearlash on a large tract of land that he and Morris owned at the top of the state on the east branch of the Susquehanna River, a few miles from the present town of Towanda. They had formed an association known as the Asylum Company which would open and sell land to French émigrés seeking to establish a refuge in this remote wilderness spot. Until the guillotine intervened decisively in October 1793, the fanciful notion was entertained that Marie Antoinette might take up residence there, a far cry indeed from the splendors of Versailles.⁷¹

The Asylum was one more dream that failed in the closing years of the eighteenth century. Visiting the settlement in 1795, La Rochefoucauld-Liancourt believed that if a spirit of cooperation were to prevail, this colony

⁶⁸ For an understanding of how tragically Philadelphia and Philadelphians were afflicted, see Richard G. Miller, "The Federal City, 1783–1800," in *Philadelphia A 300-Year History*, ed. Russell F. Weigley (New York, 1982), 180–88. Hopkins's companion, Joseph Moore, was one of the several thousand who succumbed. Drinker, *Diary*, 1.516 (entry for Oct. 10, 1793).

⁶⁹ Drinker, *Diary*, 1.552 (entry for Apr. 13, 1794).

⁷⁰ Norman B. Wilkinson, *Land Policy and Speculation in Pennsylvania, 1779–1800* (New York, 1979), 221–47; Robert D. Arbuckle, *Pennsylvania Speculator and Patriot: The Entrepreneurial John Nicholson, 1757–1800* (University Park, Pa., 1975), 158–64.

⁷¹ Louise Welles Murray, *The Story of Some French Refugees and Their "Asylum," 1793–1800* (2d ed., Elmira, N.Y., 1917), 11, 27–32.

might still prosper. But he also saw the signs of its collapse, particularly in the attitude of his countrymen whose prejudice against the American nation was all too evident: "It reaches the point for some that they take pride in not wanting to learn a word of English, and for many others in avoiding contact with any American."⁷²

It was, however, all hustle and bustle the summer before as land was cleared and houses built at Asylum. The French and the Americans seemed to work in harmony, even if they did not always comprehend each other. Samuel Hopkins was in Wilkes-Barre at the beginning of June preparing to set off for Asylum with a mason whose services were needed in constructing the furnace. He assured Nicholson, who had taken over complete responsibility of this undertaking from Morris, that "I shall run the[e] to no unnecessary expense." Nicholson's managing agent at Asylum was a veteran of the American Revolution, Adam Hoops, who, so Hopkins informed Nicholson, recommended that Hopkins "should prepare for 3 works at the French settlement."⁷³ In a subsequent report to Nicholson sent a month later from Asylum, Hoops wrote that, "having erected one pot ash work and made several Experiments which succeeded to his wishes," Hopkins was now "on the point of departure." Disclaiming any knowledge of his own about the production of potash and pearlash, Hoops deferred to those in a better position to judge who confirmed that "the pearlash made is remarkably fine and of unusual whiteness and clearness."⁷⁴

Hopkins and Nicholson remained in an uneasy contractual relationship for at least another year. Hopkins was disappointed that his assignment at Asylum had been cut back, and in the succeeding months he looked for more work from Nicholson, and then, plaintively, for money at the very time that Nicholson was running out of it. Back in Philadelphia in January 1795, with a "wounded Leg" that kept him temporarily immobilized, Hopkins had to explore other opportunities among large landholders who were themselves in search of cash to defray mounting expenses and avoid financial

⁷² François duc de La Rochefoucauld-Liancourt, *Voyage dans les États-Unis d'Amérique, fait en 1795, 1796 et 1797*, (8 vols., Paris, 1799), 1.162 (author's trans.).

⁷³ Hopkins to Nicholson, June 1794, John Nicholson Papers, Manuscript Group 96, Pennsylvania State Archives (hereafter, Nicholson Papers)

⁷⁴ Hoops to Nicholson, July 5, 1794, Nicholson Papers.

embarrassment.⁷⁵ Two such prime prospects were James Wilson and Samuel Meredith who, with John Nicholson and Robert Morris, had been founding shareholders in the Union Farm.

Wilson is justly honored as a skillful lawyer, an influential participant in the deliberations of the constitutional convention, a legal scholar, a philosopher of government, and a member of the first United States Supreme Court. He is less frequently remembered as a sharp practitioner, a vain and pompous man, a land speculator of boundless greed, and a panicked fugitive from his creditors whose death, while he was on the run, probably saved him from impeachment.⁷⁶ Although his bold schemes were not yet behind him when he entered into a contract with Samuel Hopkins in the spring of 1795, the contingent terms they struck indicate that reality was setting in and Wilson was making more careful calculations.

Hopkins agreed "to Erect or cause to be Erected twelve pot or pearl ash works agreeable to the . . . patent method" on land owned by Wilson in Pennsylvania "for two hundred dollars each works," Wilson to bear the cost subject to the completion of "a fare experiment." Ten or twenty acres of Wilson's land were to be cleared under Hopkins's supervision. If the ashes so manufactured commanded "the current price of the first Quality in Philadelphia or New York and shall pay the expences," then Wilson agreed not only to accept Hopkins's sight draft for \$200 but also to pay him the same amount for each of the eleven works to follow. Wilson's investment would have substantially increased if this initial venture established that "the Quantity and Quality of the pot and pearl ashes will advance 50 per cent more than the expences mentioned," for, in that event, Hopkins was authorized to proceed with twenty-four works and to employ as many men as he thought appropriate.⁷⁷

To carry out this experiment, but on a more modest scale than intended, Hopkins is known to have employed at least five men to assist him. They joined in an open letter to Wilson dated September 16, 1795, which was

⁷⁵ Hopkins to Nicholson, Aug 26, 1794, Hopkins to Nicholson, undated but docketed by Nicholson on Jan 9, 1795, Hopkins to Nicholson, undated but docketed by Nicholson on Nov 17, 1795, Hopkins to Nicholson, undated but docketed by Nicholson on Nov 30, 1795, all in the Nicholson Papers, the last two letters contain urgent pleas for money

⁷⁶ See Charles Page Smith, *James Wilson Founding Father, 1742-1798* (Chapel Hill, N C, 1956), David W Maxey, "The Translation of James Wilson," *Journal of Supreme Court History* 1990, 29-43

⁷⁷ Articles of Agreement, Apr 23, 1795, between Samuel Hopkins and James Wilson, Wilson Papers, HSP

published in a Philadelphia newspaper at the beginning of the following year. It had all the earmarks of a formal requisition on James Wilson, prepared in order to comply with the conditions in the contract he had with Hopkins. Something just short of five acres, "timbered chiefly with beach [*sic*], sugar maple, birch and a small quantity of hemlock," had been cleared on land that Wilson owned in the southwestern part of what is now Wayne County, probably in the vicinity of the village of South Canaan. The ashes obtained were transported "to a furnace previously constructed with one boiler of about ninety gallons," where "one hand at moderate labour . . . may make 1/3 of a ton per week." Hopkins then stated the revenue realized from the sale of the pearlash, the expenses incurred, and the "balance in favour of the manufactory besides the above expences." The profit margin fell slightly short of 50 percent of the expenses—computed, it would appear, without regard to the \$200 that Wilson owed Hopkins. Thus far advanced in this submission to the general public as much as to the defaulting and increasingly desperate Wilson, Hopkins included the 1793 certificate signed by the eminent scientists who had endorsed his patent method.⁷⁸

Hopkins would have one more documented try at making money in the backwoods of Pennsylvania. In the spring of 1796, the treasurer of the United States, Samuel Meredith, dispatched his clerk to Mt. Ararat, a spot discernible on today's map, about twenty-five miles due north of the place where the experiment for Wilson was performed the year before. In spite of all the auguries to the contrary, Meredith still saw settlements and industry springing up in this remote corner of Pennsylvania. But potash and pearlash were cash crops he badly needed to harvest. Samuel Brook, his clerk and by every appearance a practicing Quaker, sent him a series of letters from Ararat over a span of six months during which Brook supervised the clearing of the land, some thirty or forty acres, and the production of potash according to the Hopkins method. One trouble that Brook confronted at the outset was Hopkins himself, or rather his unexplained absence. "Samuel Hopkins has not come," wrote Brook on June 2, "neither have I heard about him." And ten days later, still no sign of Hopkins: "Not a word of S. Hopkins. I begin to be uneasy fearing his directions in Cutting may not suit another person should sickness or other Circumstance prevent his coming." Brook's uneasiness was all the greater because he had assembled at monthly wages

⁷⁸ *Aurora. General Advertiser*, Jan. 29, 1796.

fifteen choppers and ten others who were smiths, carpenters, and gardeners, a motley and often unruly crew. At the end of the day, the men were crammed together in a newly constructed cabin and, as Brook observed, "require[d] a constant oversight especially at meals."⁷⁹ Returning briefly to Philadelphia at the end of June, Brook visited Henry Drinker and told him that Hopkins had turned up and begun work at the ashery prior to Brook's leaving Ararat. From this report Drinker had the impression that "Samuel Meredith's improvements" were being carried out "with Spirit."⁸⁰

Samuel Hopkins's itinerant life continued during the summer of 1796. For a younger person it would have been a testing experience; for a man going on fifty-three years of age it was wearying toil. He was back at Ararat in October to certify as an assayer the quantity and quality of the ashes that Brook and his crew had produced. Brook expressed satisfaction with the results which he passed on in a letter Hopkins was to deliver to Meredith in Philadelphia. It was still too early to suspend operations at the ashery; after Hopkins's departure Brook remarked that work proceeded "tolerably considering the tediousness." Hard pressed for money to pay suppliers and his crew, Brook drew steadily on the depleted personal resources of the treasurer of the United States.⁸¹

How much cash actually flowed the other way from this experiment at Ararat? Did Hopkins make a profit from the combination of his labor and his patented process, and did Meredith manage to clear his many expenses after the barrels of pearlash were transported to market? About all we know is that once Brook closed down the ashery for that season, it was closed down for good, to be adjudged a failure by a later local historian.⁸²

Land prices, speculatively inflated, collapsed in the waning years of the eighteenth century. Tragedy quickly overtook Robert Morris, John Nicholson, James Wilson, Samuel Meredith, and many others who had gambled heavily in real estate.⁸³ Wilson and Meredith lived precariously off their government salaries, but that source of income could not begin to service debt and ward off creditors who were clamoring for payment. Not

⁷⁹ Brook to Meredith, June 2, 12, 1796, Dreer Collection n.s., HSP.

⁸⁰ Henry Drinker to Samuel Preston, June 28, 1796, LB, 1793-96, 464.

⁸¹ Brook to Meredith, Oct. 5, 7, 24, 1796, Dreer Col.

⁸² Samuel Whaley, *History of the Township of Mount Pleasant, Wayne County, Pennsylvania* (New York, 1856), 37.

⁸³ Wilkinson, *Land Policy*, 221-54.

surprisingly, as these land barons' dreams of wealth vaporized, so did Hopkins's. It is now that he disappears from his old haunts in upstate Pennsylvania, from the Philadelphia city directories and tax rolls, and from any mention in Henry Drinker's business correspondence. The meticulous diarist Elizabeth Drinker did record his presence for a moment, noting as he stopped by the Drinker house on a January morning in 1798, "'tis long since I have seen him."⁸⁴

By the time of the 1800 census Hopkins and his wife cannot be found in Philadelphia, having taken shelter, in all probability, with their daughter Sarah and her husband, William Shotwell, in Rahway, New Jersey. Quakers who wished to remain in good standing could not, however, pull up stakes and move to another locality without first obtaining a certificate of removal from the meeting in which they were enrolled. Such certificates of removal were not granted as a matter of course; an inquiry was initiated and friends appointed to counsel the member or members desiring "to remove their habitation." Only after the meeting was satisfied that no serious impediment stood in the way would the certificate, directed to the meeting at the new place of residence, be granted.⁸⁵

In 1802 Samuel Hopkins was called to account before the Philadelphia Monthly Meeting (Northern District). He and his wife sought permission to transfer to the Rahway Meeting. The response of the meeting, in which Henry Drinker continued to be a prominent Friend, supplies missing biographical data about Hopkins:

Samuel Hopkins, who has been some years removed from us with his Family to Rahway, hath been treated with by the Overseers on account of having, by entering into Engagements beyond his Ability to manage, failed to fulfill his Contracts, and pay his just Debts, whereby Reproach hath been brought on the Profession of Truth which he hath made. At our last Sitting, . . . Samuel came forward and asked the aid of his Friends, and the Meeting verbally named a Committee to hear his Request in company with the Overseers. With their united Consent he now offers a Paper acknowledging that by leaving a Business in which he had been instructed, and for want of Patience too speedily embracing

⁸⁴ Drinker, *Diary*, 2 996 (entry for Jan 18, 1798)

⁸⁵ *Rules of Discipline and Christian Advice of the Yearly Meeting of Friends for Pennsylvania and New Jersey* (Philadelphia, 1797), 18–21

another Employment which though appearing more eligible, had led him into a Train of Difficulties and Embarrassments, and prevented his doing Justice to his Creditors, whereby he had been brought into deep and exercising Conflicts on these Accounts. He also expresses a belief that ere long it will be in his power to satisfy the just Claims of his Creditors, and a Desire that he may in future so guardedly step along through Life as to close in Peace.⁸⁶

Hopkins's confession was accepted and the application to remove to Rahway referred to another committee to prepare a certificate if it was thought appropriate to do so. Contrary to the dispatch with which the business of the meeting was usually handled, this committee did not report back until eighteen months had passed. It rejected the request of Samuel and Hannah Hopkins and informed the meeting that "Samuel's outward circumstances are such as render it improper that such a Certificate be prepared at present."⁸⁷

If purgatory, as a halfway station of severe atonement in the afterlife, was regarded by Quakers as a contrivance of popery they could not accept,⁸⁸ this judgment of the meeting nevertheless consigned Samuel Hopkins and his wife to that condition in this life for the next ten years. There is good reason to think that during this period they continued to spend much of their time

⁸⁶ Minutes of PMM (Northern District), Aug 3, 1802, 499–500. The language quoted parallels Hopkins's own in his penitent submission to the meeting. His letter began "It was antient apostolic advice [James 5:16] 'confess your faults one unto another, and pray for one another, that ye may be healed.'" He confessed that he had "left a line of business, which I had been instructed in, at a time when it was much closed." Hopkins to "Friends," June 2, 1802, Miscellaneous Papers of PMM (Northern District), 1802–1827.

⁸⁷ Minutes of PMM (Northern District), Feb 21, 1804, 571. Hopkins's set of problems, while unique to him, were symptomatic of hard economic times and temptations that affected other members of his meeting. Thus, a year later, "the Minds of many Friends [were] brought under a close Exercise, on account of several reproachful failures in their outward circumstances amongst our Members, of later time especially." Ibid., Feb 19, 1805, 55. This concern was again expressed the following month in a brief printed document signed by six Quaker notables, including John Parrish. They deplored the "failures and bankruptcies which of latter times have taken place among us," caused, among other things, by "engaging in hazardous undertakings out of the counsel and wisdom of truth." *To the Members of the Three Monthly Meetings in the City of Philadelphia* (Philadelphia, 1805), 1–2.

⁸⁸ "A Seasonable Caveat Against Popery," in William Penn, *Select Works of William Penn* (London, 1771), 211–14.

in the Rahway-Plainfield area rather than in the censorious jurisdiction of the Philadelphia Meeting.⁸⁹

In 1814 Samuel and Hannah Hopkins were once again before the Philadelphia Monthly Meeting with a request for a certificate of removal, this time to the neighboring Abington Monthly Meeting.⁹⁰ Action followed quickly and favorably, and they were formally received into the Abington Meeting on October 31.⁹¹ A contributing cause for this dispensation at last may have been the willingness of their two daughters—Elizabeth Hunt, a widow, and Ann, unmarried—to take up residence with them in the Frankford section of Philadelphia. The daughters were staunch Quakers who were held in high regard. Elizabeth Hunt became a minister and frequently visited meetings in other localities as a missionary. Such indeed was her vocation while she and sister were companions to their parents in Frankford.⁹²

The records of the Frankford Meeting, which in 1816 was separately constituted from the Abington Monthly Meeting, contain only two or three references to Samuel and Hannah Hopkins. Yet the cloak of anonymity which would thereafter cover them shrouded even their dates of death and where they died. Though their names appear among the deceased members of the Frankford Meeting, they are recorded out of chronological sequence, and without any accompanying detail.⁹³

Samuel Hopkins's very short will, homemade in form, was probated in Philadelphia in August of 1818. He had signed the will four months previously in the presence of three witnesses who were residents of Shrewsbury, New Jersey, suggesting that he had felt close to death while back in that state, and may have even died there. This will, he recited, was

⁸⁹ William Shotwell, the same son-in-law who helped Hopkins with the publication of his prospectus in 1791, built an imposing mansion on the edge of the Rahway River which came to be known as "Shotwell's Folly." As a consequence of the War of 1812, he experienced financial reverses which compelled him to deed his property over to his creditors. Ambrose M. Shotwell, comp., *Annals of Our Colonial Ancestors and Their Descendants, or, Our Quaker Forefathers and Their Posterity* (Lansing, Mich., 1895-97), 150.

⁹⁰ Minutes of PMM (Northern District), Sept. 27, 1814, 108.

⁹¹ *Ibid.*, Oct. 25, 1814, 112; Minutes of Abington Monthly Meeting, Oct. 31, 1814, 75.

⁹² Minutes of Frankford Monthly Meeting, Mar. 5, 1816, 2, May 7, 1816, 8, June 27, 1817, 25, and June 26, 1818, 43.

⁹³ Minutes of Frankford Monthly Meeting, Oct. 25, 1816, 15; Frankford Monthly Meeting, Births and Deaths (names of Hopkins and his wife entered among deaths in mid-1840s), and Membership List, 1816-1885, 53.

in replacement of one made “during my wife’s lifetime.” After the standard provision for the payment of his just debts and funeral expenses, he gave all his estate “to my two daughters, Ann and Elizabeth,” who by their devotion to their parents earned what little in worldly possessions was left to be passed on.⁹⁴

Of Samuel Hopkins, the holder of the first patent issued in the United States, virtually no reliable memory was left to be passed on. Elizabeth Hunt, who remarried and became Elizabeth Wing, would recall him fondly, but as part of a personal religious awakening she experienced at an early age: “She could not forget some of those seasons when her dear father was engaged in prayer for his children. Her heart was greatly affected while she but little understood that it was the hand of the Lord that was thus upon her.”⁹⁵

Samuel Hopkins was torn between his Quaker convictions and a wagering instinct that eventually led him to forsake safe and steady employment for the exploitation of his patent. Two sympathetic observers put him on notice of the risks he was running. William Cooper pointed to the fatal flaw in the economic analysis: the cost to licensees far outweighed the increased yield of refined potash or pearlash, especially when a much cheaper, noninfringing alternative for producing potash was within easy reach. From long association Henry Drinker knew Samuel Hopkins’s weakness and anticipated his serious predicament. In vain he cautioned his neighbor against “hurrying over things” that required careful reflection.

At the end of his life and in the wake of many disappointments, the holder of the first patent was still inventing a future that would elude him. In Rahway in 1813 and in Philadelphia in 1817 he sought and obtained two separate patents on the production of flour of mustard, which must have absorbed him as a useful enterprise—enough to justify the time and money

⁹⁴ Will of Samuel Hopkins, Apr 11, 1818, probated in Philadelphia County on or about Aug 26, 1818, no 93, book 6, 595

⁹⁵ *Memorials of Deceased Friends of the New England Yearly Meeting Published by the Meeting for Sufferings* (Providence, RI, 1854), 9 Elizabeth Hopkins Hunt Wing died on September 14, 1852, in Tiverton, Rhode Island

spent in filing the applications.⁹⁶ This failed inventor and entrepreneur had refused to give up his right to dream.

Philadelphia

DAVID W. MAXEY

⁹⁶ Burke, comp., *List of Patents*, 259.

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