From Desperation to Deliverance, From Ashes to Cash

BY VARICK CHITTENDEN

Every settler had to have a little money during the course of the year, at least sufficient to pay taxes and postage. These he could not pay by barter or goods. The only way to get absolutely necessary cash for the first twenty years or so and the best and most economical way for the nest thirty was through the manufacture of **Black Salts** *and* **Pearl-ash**. *These always commanded cash, which enabled the manufacturer to pay cash for ashes. Every man saved all the ashes he made in the house and the logging fields when possible.* (11/146)

Thus one local historian, Carlton E. Sanford of Hopkinton, New York, explained the significance of an industry, long since disappeared but common and crucial in the early nineteenth century, in areas of North America thick with forest growth and too far from major ports to make other commerce possible.

Everywhere one looked -- in Maine, Vermont, New Hampshire, Ontario, Quebec, northern New York, for instance -- there were trees. No end to the trees. What was good timber for framing barns, planking floors, and making simple furniture and what made great fuel for the hearth could also be a great nuisance for the settler. He needed cleared land to plant crops and sunlight to raise them. And, of course, he also needed cash. The tall, virgin hardwoods that presented one problem could also be the solution to another.

The ashes of burned wood were of comparatively little value themselves to the farm family -- maybe for making soap or in some kind of home remedies or as fertilizer -- but they could be processed: into lye, into potash, or into pearlash, and in that order -- and then shipped off to distant places for use in growing industries practically unheard of on the frontier. Sometimes the settler leached the ashes into lye himself and maybe even boiled the lye into potash or black salts. More than likely, especially as time went on, he simply collected the ashes from the fireplace, the maple sugar fire, or from burned felled trees in the field and stored them for later picking up by (or delivery to) the local village ashery.

Lye was the dark colored, clear 'liquor' or liquid residue of water trickling through layers of wood ashes, straw and maybe quicklime, into a vessel. It is a very caustic, alkaline compound, known also as caustic potash, potassium hydroxide, or sodium hydroxide.

Next, in a heavy iron kettle set on arches, the lye could be boiled down into a thick, hard, very dark, almost black, brittle substance known as black salts or (the ash-of-the-pot) potash. Many farmers and commercial asheries were satisfied to sell the black salts and went no further. Some preferred to do further refining, using more expensive apparatus, and, by producing pearlash from the black salts. The salts were then put in brick ovens or kilns, burned at a high temperature, consuming the carbon, fusing the mass into a bluish-white and much purer product, pearlash.

One more step was possible, though not at all common, the adding of carbonic acid gas by absorption into the pearlash, to create saleratus or baking soda. For years this simplified version of today's bicarbonate of soda was a staple in kitchens all over. Much more of the caked pearlash was broken up into chunks, packed in barrels in the ashery and transported to markets considerable distances away.

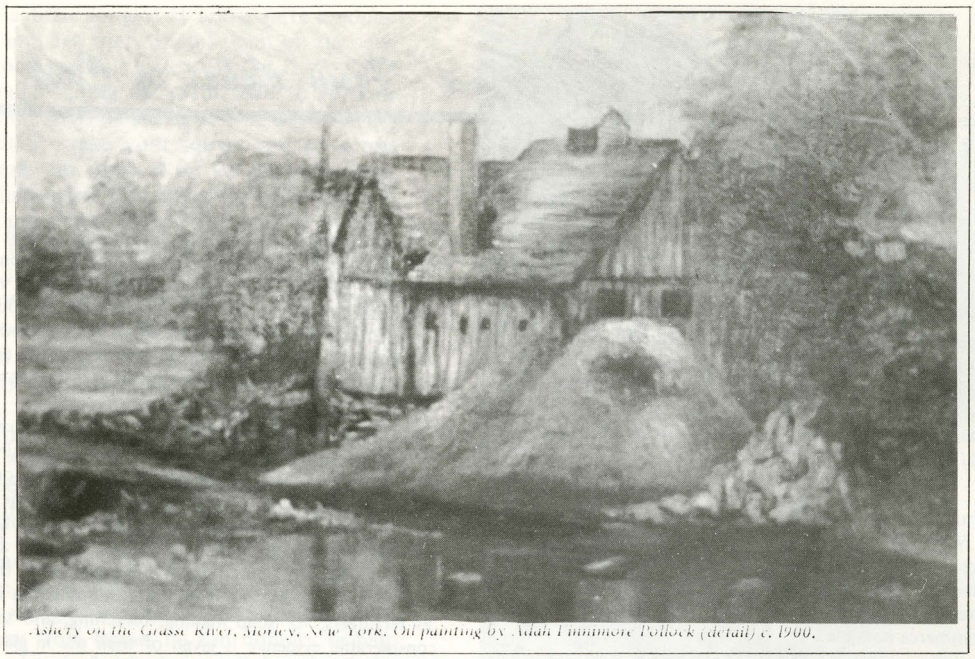
These products -- potash or pearlash -- were in great demand in Great Britain from America's beginnings. Various sources of information point to the common sale of wood ash products in commodity markets. One suggests that England was 'crying aloud for ashes' and potashes began traveling the great way to Europe as soon as the Pilgrims landed, and crediting their senders with thirty five shillings a ton.' (8/173) There salts of potassium were used 'as fertilizers, for soap making, bleaching, and so on' and considerable evidence is given of their use in glassmaking, medicines, and in chemicals. It was in great demand in Britain's textile industry (as well as locally -- later in New England).' (10/242)

Once the peace of Utrecht, in 1713, had ended Queen Anne's War and opened an interval of comparative peace, commercial asheries began appearing commonly in the northeastern American colonies. (10/174) In fact, such was the demand in England that 'this chemical was one of the commodities which [was] required to be sent to the homeland only.' (3/140) Large shipments were also later noted in European and West Indian ports as well. New York and New Orleans commodities markets quoted prices for potash and pearlash in the early nineteenth century. In June, 1824, potash was bringing $120.00 a ton and pearlash $122.50 in the New York market. (8/179)

Lye and ashes began not as essential raw materials for manufacturing but as necessary products on the farm and in the home. Ashes were collected from the fireplace, often stored temporarily in open space underneath the brick bake oven, with an iron or even a *wooden* door for some protection. Many farmers kept ash houses in which to store their house ashes and keep them dry. These buildings were often built 'well up on a great boulder so there should be no danger from red sparks still left alive.' (8/171)

These wood ashes had several uses on the farm, as a deterrent to such garden pests as cucumber beetles or as some apparent remedy for animal disease: Elisha Risdon of Hopkinton recorded in his diary for December 25, 1834, that he 'sifted ashes on calves' that he otherwise feared would die. (9/314) He never revealed the results!

By the late eighteenth century ashes were considered a valuable source of fertilizer to return nutrients to the cultivated fields. 'Everyone recognized the virtue of wood ashes, even after *much of the potash had been leached from them*,' (10/390), and used them as much as anything, manure and plaster of Paris (Benjamin Franklin's favorite) included. Commercial fertilizers as we know them did not yet



Ashery on the Grasse River, Morley, New York. Oil painting by Adah Fitzmorse Pollock (detail) c. 1900.

exist. During the time of potash being produced for industry, ashes seemed far more valuable to the farmer when traded away than spread on his land. (3/74)

Around the home, wood ashes were most universally used for the eventual making of soap. 'Every farmer's wife kept a barrel of ashes, called a leach barrel, at the corner of the house under the spout of the eaves trough. The lye dripped out of a hole in the bottom into an iron pot.' (1/27) With the accumulated fats and greases of the kitchen she would then make soap -- in the spring or otherwise when she needed it -- with the lye. Leaching tubs and potash kettles were common sights on the landscape, far more than just those used in commercial enterprises.

Before the potash industry was fully developed, men indiscriminately chopped and burned. A Canadian historian reports of the earliest Ontario clearing:

> The trees were usually chopped down in such a manner that they would fall in heaps as far as possible. Several large piles were formed on each acre of land and all the logs were dragged thither by oxen, while men with handspikes built up the heaps until they were about eight feet high. When the region had been entirely cleared, the piles were fired with the help of underbrush and branches. (2/276)

The clearing became an annual event in the earliest years of town settlements. Each spring new families would arrive to join friends and relatives already established and would quickly go about the cutting and burning of logs. Those farmers already there would clear additional acres for more pasture and crops. Practically every May or June from his arrival till as late as 1845, Elisha Risdon, one of the first settlers of Hopkinton, in 1804, reported signs of this activity all around him: (9/297, 319,374)

1833

May 2d, 3d, 4th
Cool and dry. Burnt my heaps. Sowed rye and dragged it in. Watching fires to keep it out of Mr. Kent's woods.

May 7th
Sowing, ploughing, dragging and logging. Grass grows slowly.

May 10th
Windy. Watching my fires.

May 11th
Rains this morning.

1835

May 13th
People are setting many fires. Smoke rises in various points.

May 14th
Dense smoke rises in the west.

1845

June 15th
People burning brush and log heaps in various directions. Much smoke.

Once men found the time to be more leisurely about picking and choosing the trees to be cut and once commercial asheries were established in their neighborhoods to buy the ash and potash from them, more careful cutting could happen and the ashery business could grow. Field ashes obviously produced the greatest quantity for sale or barter with the ashery, but they were usually not the best for they produced problems that house ashes ordinarily did not. One writer suggests that: 'When the heat had sufficiently subsided they were shovelled into wagon or cart and drawn to the ashery with more or less dirt, according to the honesty of the settler, mixed in.' (11/147)

Honest or not, men might find it difficult to control the purity of the ashes, especially when wind or rain threatened. The account continues: 'The settlers used to watch

and study the clouds and sky so as to burn their log heaps and not have the burning too soon followed by a rain which would injure the ashes if long continued destroy them.' (11/147) An advertisement in the Toronto *Gazette* on November 22, 1800, confirms these ideas:

> Ashes wanted. Seven pence, Halifax currency, per bushel for house ashes will be given at the Potash Works (opposite the jail) and five pence, same currency, if taken from the house...It is recommended to those persons who have ashes to be careful in keeping them dry, otherwise they will not be taken. Any quantity will be received at a time by W. Allen, York. (2/100)

Jared Van Wagenen, in his invaluable *The Golden Age of Homespun*, also interprets the frequent emphasis on house ashes in advertisements as a 'contradistinction to the ashes gathered up (from the fields) and which were likely to be of less value because of the danger that they had been partially leached or were mixed with earth.' (13/168)

Other considerations also became important for the farmer who began to depend on this new auxiliary enterprise on his farm. Which trees should he burn, which should he not? Sources all agree that hardwood ashes in general were the best. Lot Hall of Gouverneur, born in 1844, and a wonderful source of information for many historians, insisted that the best of all was water elm, 'by common consent.' He added that a single large tree of this species might be expected to yield as much as 200 pounds of black salts and the ashes were so rich that 'in gathering them it was not unusual to find solid masses of fused potash 'as big as a large potato' and so pure that they would be thrown directly into the boiling kettle.' (13/167) In order of richness Hall also suggested black ash, maple, basswood, hickory, and beech. Sanford also said ash and elm were the most productive. (11/147) Guillet, the Canadian historian, suggests that, in the first quarter of the nineteenth century, settlers would 'burn beech and maple logs as worthless except for ashes' and that 'oak, elm, and ash had other uses.' (2/44) All also agree that evergreens have relatively little value as sources of potash.

One interesting argument by today's standards is over the ecological consideration of burning these trees at all for such purposes. While some bemoan the massive destruction of great virgin hardwood timber for such uses, others argue that 'the fellows that wrote the histories got all excited for nothing.' Vermonter Walter Needham claimed:

> Good timber was just as valuable then as it is now, and the old-timers had better sense than to destroy it. What the first settlers burned was of no value. It was old growth, either hollow or rotten or shaky or poor stuff; it had gone by, the same as an apple that has hung on the tree too long. When I was a boy my own father told me that there was more good timber then than in his young days when the old growth hemlocks would be four or five feet through, all right, but they was hollow, with just a little shell on the outside. Sometimes they had hollows big enough for a man to get into. (7/114)

And a recently published history of agriculture in New England included the statement that in the mid-nineteenth century: 'Upcountry [the interior] the best stands were turned into lumber and shingles, defective trees into potash.' (10/384)

As a source of much needed cash on the frontier farm, ashes and potash have already been discussed. Sources vary as to the amounts -- time periods, places, and money values are difficult to compare -- but by economic standards then, the possibilities were substantial. As early as 1717 'it was said that one man could in a year's time, clear, and burn the wood from four acres of land and that this would yield eight tons of potash; while a gang of three men, cutting, burning, boiling, and managing the ashes on twelve acres could produce twenty four tons of potash which would be worth forty to sixty pounds a ton.' (8/173-74) Early advertisements to buy ashes suggest a range of offers on the commodity, usually amounting to around ten cents per bushel, sometimes less, sometimes more. Of Hopkinton in the early 1800's, Sanford said: 'Good ashes produced from seven to eight pounds of black salts to the bushel and the ruling price was three cents per pound. They sometimes got as high as five cents, which brought a great profit to the manufacturer.' (11/147) Sanford perhaps most clearly related the possibilities of cash income when he retold the story told him by Zebina Coolidge:

> He tells me that Gilbert Covey and Reuben Post took a contract to clear ten acres on the present Hopkins farm at ten dollars per acre *and* the ashes. The usual price for clearing the land seems to have been ten dollars in those early days. Probably they were given the ashes in this case in addition, owing to the great growth of timber. He further says that they had great success in burning and saving the ashes and that they secured six hundred bushels from a single acre, which they sold at ten cents per bushel, making it a very profitable job for them. (11/148)

From all accounts, however, there were not many of such huge clearing projects in the North Country as these two men seemed to undertake. More common was the single farmer who collected together a few house or field ashes for a local ashery, often a business in conjunction with some other. The almost natural combination was of a general storekeeper who sold to and bought from -- and especially bartered with -- settler for products for and from his farm. 'Almost every enterprising merchant ran an ashery... with his store, and had teams scouring the country for ashes...Mr. Clark S. Chittenden [this author's great-great-grandfather who opened a general store and ashery in Hopkinton in 1821] had and ran for many years an ashery with a pearlash outfit on the west bank or shore of Lyd Brook close up to the Turnpike road, getting the water for his leaches from the open raceway on the bank above...Mr. Zoraster Culver [who ran another general store in Hopkinton], another enterprising merchant, conducted one [ashery] directly across the road.' (11/148) On January 12, 1835, Elisha Risdon recorded that 'Chittenden's team here for ashes, had nine bushels at twelve-and-one-half cents per bushel.' (9/315) On numerous other occasions the Risdon diary entries speak of cash or credit transactions at both Chittenden and Culver stores, for such things as lead, cloth, postage, and a hat. Similar stories could be found throughout the region.

To the north, in Ontario, Rhodes Grant has written:

'In 1792 it took three quarters of a bushel of the best ashes to buy a half pound of Bohea tea in the Cornwall stores. One bushel would buy a four gallon demi-john of rum.' (1/26) And farther away, nearer the ports of entry, the story was also similar, but generalized. There was constant reporting of 'traffic in country goods' from places like southern Vermont and New Hampshire to Boston. Such things as dressed beef, hogs, fowl, cheese, lard, butter, flax, wool, homespun, mittens, and *potash* were coming in: salt, groceries, rum, cod, dry goods, and molasses *'for a local merchant'* returned. All of this to 'help (the farmer) balance his running account at the general store.' (10/328)

One of this author's favorite stories about potash and barter is written down by a local historian/family friend and, in places, no doubt somewhat exaggerated. Of Clark S. Chittenden, whose business is already noted, she wrote:

> He packed (refined pearlash) into barrels and transported (it) to Plattsburgh over the woodland trail. He traded the pearlash for much-needed supplies for the settlers and thus kept many of them from starvation, because it was a time when Hopkinton was facing tragic circumstances. Roswell Hopkins, its founder, had failed financially, and his lands were being sold for debts. Many settlers had never finished paying Mr. Hopkins for their land, and, added to their insecurity, was the fact that crops were very poor and they could not feed their families. So they frantically turned to cutting down their trees and burning them into ashes for the Chittenden ashery. (12/251)

The alleged rescue of a settlement might have been unusual but certainly the appearance of ashery establishments was not. During their heyday -- the time of great movements north and west from coastal areas into woodland frontier and before industry found cheaper replacements -- asheries were everywhere. Censuses and atlases may not be totally accurate but they reveal interesting trends. In 1829 (the first published census with meaningful statistics for northern New York), St. Lawrence County (and Hopkinton, the town already discussed so much, within it) were recorded with the data shown in Chart 1 below.

By 1845, when New York State published its third agricultural census, and by far the most thorough to date, potash manufacture proved to be one of the most important industries of the state. There were in the state then 738 asheries, the value of their products almost a million dollars ($909,194). To show changing relationships locally, statistics once again for St. Lawrence County and Hopkinton in 1845 illustrate the situation. (See Chart 2 below.) Similar data appears for other woodland areas of eastern Canada and the northeastern United States, somewhat earlier and a little later as well.

Ulysses Hedrick, who published the definitive history of New York State agriculture in 1933, stated that 'from 1805 to 1825, New York sold an average, per year, of $300,000 of potash, most of it from the Genesee Country [settled earlier than the North Country], but much from northern and southern counties as well.' Hedrick went on to discuss this region:

> The making of pearlash was for many years an important industry in northern

> New York, with Ogdensburg as a center, although nearly every village in the region had its pearl ovens where the black salts was bought from the farmers and from which was made a better grade of pearl ash than the farmer could make...Pearl ash brought $200 to $300 a ton on the Montreal markets. In 1805, over 1000 tons of ash had been shipped from Sackett's Harbor alone. In 1806, the region exported potash to the value of $3500; in 1807, $6000; in 1808, $9000. These were large sums for those days. (3/140)

The time period of potash manufacture's greatest production was apparently short, for by the mid-nineteenth century changes came about that would spell its end. The clearing of most forested land for cultivation was nearly complete in this whole region by that time. With no replenishing, reforestation practices not yet in effect, diminishing resources posed obvious problems. Farmers were finding other crops (probably more pleasant to manufacture and at least as profitable) to ship for cash, like butter or cheese. And cash itself was more plentiful, making local barter less necessary than years before. But probably the fatal blow to the potash industry as supplier to the great manufacturers of Europe and America was the discovery in 1856 of great potassium deposits in Strassburg, Germany, more realistically exploited for industrial purposes than burning trees in distant forests. (3/139)

In isolated places, though, evidence exists of asheries still in business late in the nineteenth century, and maybe even later. One manufacturer, Dennis Denneen of Fort Covington, on the Salmon River in Franklin County, purchased a potash works in 1846, operated his own cooper shop to produce the necessary oak barrels with elm hoops, and kept it all operating until 1880. (4/11) The 1865 Beers atlas of St. Lawrence County shows asheries still standing in many towns, two for instance in Morley, one of which presumably was subject of an oil painting by Adah Finnimore Pollock, done around 1900. Whether it was painted 'from life' or from memory cannot be determined, but the building apparently still stood much later than many others of its kind. In 1974 Rhodes Grant stated that 'there was (an ashery) in operation in Maxville (near Cornwall, Ontario) only fifty years ago.' (1/26) He even suggested that some [somewhere?] must still be in operation, for we can still buy it: 'If you want to see pearlash, go to the store and buy a can of Gillet's Lye, that is pearlash.' (1/27)

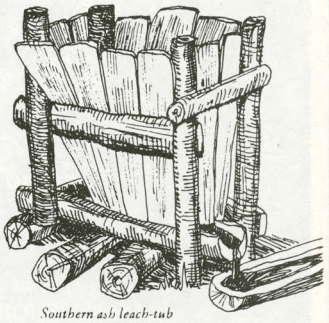
It is not hard to imagine why, unlike the blacksmith shop, the cooper shop, the general store, or the sawmill, the ashery has lost its significance in the modern day American's romantic image of an early settlement town. Crude wooden sheds, often thrown together just to keep the bad weather out, were the scene of dirty, unpleasant work, and were sometimes the easy victims of explosions and fires (both Fort Covington and Hopkinton records show instances of these, for example).

This early industrial site in a town was not to be overlooked or scorned just because of its appearance or its work conditions. The men who made potash had to know what they were doing and were not all equally good at it. Sanford wrote: 'Some little skill was required in doing this not to go too far and burn them or allow them to attach to the kettle.' (11/147) Like so many other products, potash and

CHART I.	St. Lawrence County	Hopkinton
total acres	738,500	280,000
improved	106,645	2,997
unimproved	1,631,855	277,003
population	27,595	884
grist mills	40	2
saw mills	79	6
fulling mills	17	2
asheries	336	8

CHART II.	St. Lawrence County	Hopkinton
improved land (acres)	305,555	7,917
population	62,354	1,435
grist mills	45	0
saw mills	186	7
fulling mills	29	2
carding machines	31	2
tanneries	44	2
taverns	95	1
retail stores	155	3
asheries	97	1
raw materials	$137,091	$ 800
manufactured articles	$213,741	$1,300
farmers	8,847	196
merchants	222	3

Gum, or leach tub, on leaching stone



Southern ash leach-tub

(Suggested by illustrations in Rawson - see Sources)

pearlash could vary considerably in quality. Vermont provided official inspection (10/242) and York (Toronto) had in 1801 its own Collector of Duties and Inspector of Pot and Pearl Ashes and Flour (2/101) to discern the difference for the trade.

Like other folk technologies -- born of necessity, developed by trial-and-error and common sense, provided for by available natural resources, and passed along to others by imitation and word-of-mouth -- the manufacture of potash [perhaps *because* it was economically very successful!] would become the study of scientists (and engineers)later in the name of making it more efficient and profitable. No less than the great Antoine Lavoisier appears to have made efforts to improve the potash trade. A wonderful rare book on the subject, in the archives of the New York State Historical Association Library in Cooperstown, is *attributed* to Lavoisier. That makes sense, for the French scientist, 'the father of modern chemistry' who lived from 1743 to 1794, is credited among many other things with trying to establish agricultural experiment stations to improve farming methods in France. He had also provided a scientific explanation for fire and was interested in the changing of mass from one form to another. The little, forty-three page book, with no date and no author named, is entitled *The Art of Manufacturing Alkaline Salts and Potashes.* Point by point the scientist discredits older methods of manufacture and rejects much of the technology practiced for generations before and that would continue for many afterward. Apparently most of his message never reached the hinterlands of North America, for the tested methods of farmers appeared to persist till the industry's demise.

Clearing and Burning (suggested by an illustration in Jeffrey - see Sources)

The end of the industry, locally and otherwise, was simply an economic reality that neither tradition nor scientific discovery would stave off. While it lasted it met the severe needs of settlers who had to go beyond their own farms to survive in emerging nations in a new world. And while it lasted, it was not so bad. Hedrick suggests that potash manufacture served its participants well -- from desperation to deliverance, from asnes to cash:

> The settler in the forests of New York was in much better case than his descendants a generation or two later who plowed the virgin prairies of the middle west, had no potash to sell, no forest products to dispose of, and could obtain but 50 cents or thereabouts for wheat and half that amount for a bushel of corn, if indeed the corn was salable. (3/110) **R**

NOTE: References in the text are indicated by the page numbers within these numbered sources, appearing in parentheses immediately following their quotation, e.g., (10/242), from page 242 in Russell.

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