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PAUL COLLINS

22,000 SEEDLINGS

Grape jelly, of the T-shirt-destroying purple variety, is very much like wheat paste, Play-Doh, or crayons—that is, something that North Americans can immediately identify by taste, touch, or smell.

It is a smell of childhood, an infusion of sugar on the palate that, were it not so utterly taken for granted, might be capable of evoking Proustian eloquence on days of Land of the Lost and Electric Company past. But even the very name of the variety—Concord Grape—is scarcely thought upon.

Concord grapes are still grown near a town called Concord—and what a comforting, almost quaint notion that is. But try to actually buy a Concord grape in a supermarket and you will be met by quizzical looks. The Concord grape is not a table grape, they will tell you. And yet, to look at the jam and jelly aisle in the market, you'd think that the Concord was the only grape in existence. In the American world of processed grape products, King Concord reigns supreme.

Many Americans would be surprised to find that the Concord grape is little known elsewhere in the world, and that the beloved American combination of fatty peanut butter and sugary jam on Wonder Bread is as much an object of fascinated revulsion to foreigners as anything that Elvis might have ordered from his house chef. But stranger still is the discovery that, once upon a time, not only was there no Concord grape over there . . . there was no Concord grape over here.

AMERICA IS A place of grapes; when Viking explorers nudged around the continent's edge a thousand years ago, they were so impressed by the profuse growth that they dubbed the new world Vineland. But close inspection would have revealed the tendriled inhabitants were both recognizable and strange. Native American vines are grapes, yes, but they are not the same as European grapes. And so later European settlers did what came naturally to them: they ignored the native varieties and imported vine cuttings from the Old World.

Settlers had good reasons for this. Humans shy from eating unfamiliar mushrooms and berries; catastrophic liver damage and kidney failure being what they are, immigrants to the Americas who mistake native varieties for ones from the homeland don't get a chance to repeat the error. Even the tomato, now one of the most heavily cultivated native American fruits, was allowed to rot on wild vines for years, because settlers were convinced it was poisonous.

But most of all, the classic European table grapes and wine grapes, such as muscat and tokay, were proven financial successes. Settlers, who were sometimes granted land on the condition that they improve it through clearing and planting, needed safe bets in order to survive and to hang on to the property that they had so painstakingly stolen from the Indians. And so, along with indentured servants and packets of letters, ships to America bore an even more valuable cargo: vine cuttings.

But America was not a good place to grow grapes.

Not European grapes, anyway. From the 1630s when the first vineyard was planted by William Bradford up through the mid-1800s, scarcely any American farmer made a living off of grapes. The plagues of the vine are legion: red spiders, mealy bugs, thrips, rose bugs, fretters, and beetles wielding mandibles like brutal tire irons. And even if the vines survived them, come harvest time you'd find dry rot in the roots—or wet rot in the fruit. Native varieties had, through natural selection, built up some resistance to these ailments. But European grapes, as the horticulturist Andrew Fuller recalled bluntly, "entirely failed in this country."

Farmers blamed the soil, overwatering, improper pruning, bad weather . . . everything, that is, except the grapes themselves. They found that the only way to raise grapes with any degree of consistency was in a glass house. With the mass production of glass in the nineteenth century, this no longer sounded entirely ludicrous to people. After all, the era's greatest public building, the Crystal Palace in London, was in effect a giant greenhouse. Newly designed heating systems meant that these houses could even provide fruit year-round. Guides proliferated on how to build a glass "grapery" in one's own backyard.

But for large-scale fruit agriculture, glass houses are a staggeringly inefficient way to raise a crop. Even as American agriculture boomed through various land grabs, grape acreage remained stubbornly small—by the mid-nineteenth century, a paltry 5,600 acres in all of America east of the Rockies. In the 1840s the viticulturist Elijah Fay ventured to send a shipment of grapes to Buffalo with an assistant named Baker. "Buffalonians stared at the fruit," says one historian, "asking Baker the kind of plums they were and how they were eaten." Americans scarcely even understood what grapes were; how was a farmer going to find any market for them?

But then, not all farming is done by farmers. Agriculture, which has become the most high-tech and lucrative of biosciences in our own time, also happens to be the most approachable of human endeavors. Save a pip and stick it in some soil, and with nothing more than benign neglect you might still wind up with something to show for it. Even children can do it: after all, the quintessential school science experiment for young children is to watch a seed germinate in a test tube.

The early nineteenth century, for all its careful lore of pruning and grafting and

planting cycles, was still a time when you didn't need an ag science degree; the tools of the trade were still simple and graspable. Take, for example, this straightforward recipe by Fuller: "If the vines do not grow as rapidly as desired, then put a few shovelfuls of good fresh barnyard manure into a barrel of water, stir it well, let it settle, and then draw off the water and apply it to the plants." And so, liquid manure at the ready, grapes were raised by dedicated amateurs and backyard enthusiasts: after all, no serious working farmer would consider such a risky and expensive crop.

ONE SUCH AMATEUR garden could be found in the Washington Street backyard of Epaphous Bull, a Boston silversmith. His son Ephraim took a particular interest in the garden. Ephraim, born on Jefferson's inaugural day in 1806, had the signs of some sort of greatness; with his nose constantly in a book, he'd won an academic medal when he was just eleven years old. But Epaphous could not afford to keep the boy in school, and so at the age of fifteen he was sent to an apprenticeship in beating gold leaf. In his spare moments off the job, young Ephraim could still be found in his father's backyard, carefully examining the Catawba, Isabella, and Sweetwater vines that he'd planted.

Ephraim proved a quick study at goldbeating, and he grew to eventually run his own workshop, where he turned out gold leaf for bookbinders and gilders. But the hot and dusty workplace, not to mention the crowded environs of the city, was aggravating his lungs. By 1836, the situation had become plain to him and his doctor: he needed to move to the country. Ephraim and his wife moved twenty miles away to Concord, the quiet village where the Revolution had started so many years before. They were delighted to find that they could afford a seventeen-acre farm out on Lexington Road.

There was just one catch: the next-door neighbor was positively bizarre.

BRONSON ALCOTT, JUST a few years older than Ephraim, was if anything even more bookish. He too had had little formal schooling, though this hadn't prevented him from founding his own school in Boston. He'd formulated a progressive approach to education that promoted Platonic dialogue and self-paced, individually motivated learning over the traditional approach of rote memorization and instructor lecturing. Children were encouraged to keep journals, and classroom dialogues ventured into religious inquiry and a mild prototype of health and sex education. For these groundbreaking contributions to American education, the young man was of course pilloried in the newspapers for "indecency." But Alcott continued to practice his own enlightened and utterly modern educational theories on his most apt pupil: his own daughter, Louisa May.

1836 was an auspicious time for Bull to have settled next door. Alcott's close friend Ralph Waldo Emerson had just published a revolutionary essay titled Nature, and Alcott himself was busy finishing an extraordinary—and now forgotten—volume of transcribed dialogues with children about religion, Conversations on the Gospels (1837). When it came out he was roasted again in the press for having the temerity to

suggest that young people might have anything meaningful to say about God. Hundreds of unsold copies ended up being bought as scrap paper and used to line trunks.

Alcott bore failure well. He had to, because ever since his first job, as a traveling salesman, pretty much everything he had tried his hand at had failed. He was a man of equally vast impracticality and vision, and eerily prescient in his pursuits: women's rights, the abolition of slavery, banning tobacco on health grounds, and eating what he dubbed a "Pythagorean diet"—today it would be called vegan. Emerson was so delighted by Alcott that at one point he seriously proposed that their families move in together.

One other subject particularly attracted Alcott's notice: the newly flowering science of genetics. This was a field in which he and Ephraim had much to enthuse over. Most interesting of all was the work of a Belgian physician, Jean Baptiste Van Mons, who possessed a seemingly miraculous skill at selectively breeding and cross-pollinating pears; by isolating the best aspects of each strain, he had bred forty distinct and superior types of the fruit.

Any conversations Ephraim and Bronson had on the latest work of Van Mons were eventually cut short, though, by Alcott's announcement that he—along with most of the members of the burgeoning Transcendentalist movement in Concord—was departing to found a Utopian agrarian colony, Fruitlands. In his place came a new tenant for the farm next door—a hack writer named Hawthorne.

WRITING MANY YEARS later, Julian Hawthorne remembered watching his father, Nathaniel, and his neighbor, Ephraim Bull, philosophizing over long summer days on politics, human nature, morality, and . . . grape growing. On dusty fall days, Bull would work at installing a long fence along one border of the property, although he wasn't much interested in keeping the neighbors away; whenever he saw the Hawthorne children, he'd invite them to climb the fence and eat as many grapes right off the vine as they could hold. "It seems to me," Julian Hawthorne later mused, "that he could hardly have realized our capacity."

Bull made a vivid impression on the young boy:

He was as eccentric as his name; but he was a genuine and substantive man, and my father took a great liking to him, which was reciprocated. He was short and powerful, with long arms, and a big head covered with bushy hair and a jungle beard, from which looked out a pair of eyes singularly brilliant and penetrating. He had brains to think with, as well as strong and skillful hands ; he personally did three-fourths of the labor on his vineyard, and every grape vine had his separate care.

His frequent work alone in the vineyard may have been a necessity for Bull; as friendly

as he was, he had a monumental temper, and whenever he brought hired laborers into his vineyard he'd get so exasperated at their stupidity that his roaring could be heard all the way across the farm and in the Hawthornes' yard—"like the sounds of a distant battle," Julian recalled.

But Bull was indeed engaged in a mighty struggle. With native varieties of grapes—which were scarcely worth noticing, to most viticulturists—he was going to try to breed a hardy open-air grape that would not only rival the best European grapes in flavor but have the native resistance and early growing cycles needed to survive New England insects, diseases, and autumnal cold snaps. Bull had some support in this; the scholar James Mease had argued for the development of native varieties in his Domestic Encyclopedia as early as 1804. But it was easier said than done.

Grape breeding requires patience. While grape growers typically propagate their vines by cutting and grafting, this doesn't work for breeding. Cutting and grafting is biologically static: you are growing a clone. That's great for farmers, as grafts grow quickly and consistently. But to breed a new variety, you need variation. And there's only one way to do that naturally—you plant seeds, and you wait.

Grape genetic material varies from seed to seed; the seeds that come from a single bunch can be as different from one another as sons and daughters of by the same parents. The seeds of any given grapevine provide a wide array of genetic permutations to work with, both useful and useless. But it is impossible to judge the quality of your breed until they bear fruit, and that takes at least two growing seasons. From there, you might have to go through many successive generations of seed selection and cross-pollination before you get the characteristics you want from a grape.

This can take years, decades. Even entire lives.

BREEDING BEGINS WITH a single plant, and Bull didn't find his in a vineyard or a commercial nursery. He found it by the kitchen drain behind his house. It was a Vitis labrusca, a northern fox grape, and this one bore fruit early in the growing season. Early fruition was crucial for any grape that would grow in New England, and so Bull tasted the grape flesh and examined the vine carefully. "The crop was abundant, and of very good quality for a wild grape," he later recalled. "I sowed the seed in the autumn of 1843."

His methods of planting were simple enough: "I put these grapes whole, into the ground, skin and all, at a depth of two inches, about the first of October, after they had thoroughly ripened. I nursed these seedlings for six years, and of this large number, only one proved worth saving." That one was, he decided, to be called the Concord grape. After three generations of fruition and culling, he was ready to show off his new creation to a visitor to the house. On September 10, 1849, he picked a bunch of grapes

when they were their ripest and presented some to a neighbor. He watched as the man sampled the new fruits.

"Why," the man marveled, "this is better than the Isabella^ This was excellent news for Bull; his new grape had already surpassed the most palatable of native grapes. Emboldened, he took some cuttings down to the offices of the Boston Cultivator, offering to trade one of his Concord cuttings for some of the Cultivator's vine samples. But he forbade the Cultivator staff from selling anything they grew from his vine; he needed a few years to propagate his grapes before he unveiled his work to the public.

THE TWO MEN from the Massachusetts Horticultural Society walked up to his cottage door one September day.

"Where are those grapes you promised to send in?"

Bull was taken aback.

"I did send them in, by a neighbor" he stammered. "I was too sick to make the trip myself, but I sent them just as I said I would."

The men said they'd check the exhibition tables at Horticultural Hall again. A lot was riding on their finding that bunch of grapes; the 1853 fall meeting in Boston of the Horticultural Society was to be the Concord's public debut. And it took some searching, but they were there—just as Bull said they'd be. They'd been mistakenly placed in the vegetable section instead, and hidden under a pile of squashes and turnips. The mistake was understandable, because the Concords didn't even look like grapes—not to American eyes, anyway. They were too big.

The judges raised their eyebrows.

"I'll bet he girdled the vines," ventured one. "We'd better make sure there's no trickery here."

And so the committee rode out to Concord and made the pilgrimage out to Grapevine Cottage. Bull, already too sick to make the Boston meeting, now found himself surrounded by men with notebooks, peppered on all sides by questions. How had he raised the vines? Were these really typical grapes for this variety? Could he prove it?

—There are others out back.

And Bull led them out to his vineyard, where the judges examined the vines. Not only had Bull sent them entirely typical specimens, but the grapes in his backyard were even bigger . . . and sweeter.

BULL WAS FAIRLY matter-of-fact in his own descriptions of what he had sown:

The grape is large, frequently an inch in diameter, and bunches handsomely shouldered, and sometimes weigh a pound. In color it is ruddy black, covered with a dense blue bloom, the skin very thin, the juice abundant, with a sweet aromatic flavor. It has very little pulp. The wood is strong, the foliage large, thick, strongly nerved, with a woolly under surface, and does not mildew or rust. It ripens the 10th of September.

But a reporter at the exhibition was more to the point: "The committee announced to the world that, at last, a grape had been developed that would grow in New England—bigger and better than any grown before."

Bull's vine stock soon went on sale, available only through C. M. Hovey & Company of Boston. Bull and Hovey were sitting on a gold mine—as the only sellers of what promised to be the greatest American vine ever bred, they could charge $5 a vine and see a handsome profit. It was a tremendous hit: requests poured in from amateur viticulturists from around the country, and in 1854 alone Bull's cut was $3,200. Concord grapes were destined, it seemed, to appear on every backyard trellis in the country.

But then something strange happened. Sales went down—just a little at first. Then a little more. And then, inexorably, the sales dwindled to nearly nothing. The realization slowly sank into Bull: it wasn't just amateurs who had been sending in orders to Hovey.

His competitors had been buying the vines.

THERE WAS NO way that Bull could have anticipated what happened. Grapes were not a commercial crop in the United States. But the reporter at the exhibition had been right: the judging committee had told the world, perhaps a little too well, just how fine Bull's grapes were. And now commercial nurseries, who'd never bothered much with grapevines before, were quietly ordering the Concord vine and preparing enough to seed an entire domestic industry—all without a penny to go to Ephraim Bull.

In 1854, breeders in the United States had no protection whatsoever, no way to control their product. They could thank Thomas Jefferson for this: when drafting the country's patent laws, he had deliberately excluded life forms. Perhaps it seemed impious to claim the mantle of creation over life itself. But then again, Jefferson was a levelheaded Deist, a man who never let a religious qualm derail a rational train of thought. His real reason for excluding life forms might have been simple: to keep the courts from becoming solidified into a frozen block of litigation. It wasn't until 1930 that Congress finally allowed plant varieties to be patented.

What was more, patents didn't always protect the holders anyway. Quite the reverse: if you were patenting a mechanical process, your patent papers would have to describe the workings in great detail. Any crook willing to read through the public record could swipe your invention, secure in the knowledge that if the patent holder lived far enough away, he might never even find out—and even if he did, he might not be able to afford a legal battle. Some of the greatest and most lucrative inventions were never patented at all, and for precisely this reason.

When Scientific American readers were asked in 1899 to name the greatest invention of their century—they had tiresome lists and "best of" century wrap-ups back then, too—it was not Bell's telephone that they named. Nor, for that matter, was it Edison's lightbulb, Whitney's cotton gin, Fulton's steam engine, or photography, or the gas-powered automobile, or any other of a multitude of obvious choices. It was the Bessemer steel process.

Sir Henry Bessemer is a man little spoken of today, but his steel process, which he was perfecting even as Ephraim Bull was happily cashing his first big check from Hovey & Company, built the modern world as we know it. Virtually all steel—whether in cars or buildings—is manufactured on some variant of the Bessemer process. Sir Henry became fantastically wealthy off it. But this was not how made his first fortune.

His first fortune came from, of all things, powdered bronze. As a young man, Bessemer was helping his sister decorate a portfolio of flower illustrations. He needed some gold ink to complete the lettering, and to do this, he'd have to get some "gold powder" from Mr. Clark, the local art supply merchant:

The material was not called "gold," but "bronze" powder, and I ordered an ounce of each shade of colour, for which I was to call on the following day. I did so, and was greatly astonished to find that I had to pay seven shillings per ounce for it.

On my way home, I could not help asking myself, over and over again, "How can this simple metallic powder cost so much money?" for there cannot be gold enough in it, even at that price, to give it this beautiful rich colour. It is, probably, only a better sort of brass; and for brass in almost any conceivable form, seven shillings per ounce is a marvellous price. ..."

Here was powdered brass selling retail at £5 12s. per pound, while the raw material from which it was made cost probably no more than sixpence. "It must, surely," I thought, "be made slowly and laboriously, by some old-fashioned hand process; and if so, it offers a splendid opportunity for any mechanic who can devise a machine capable of producing it simply by power."

The powder, it turned out, was manufactured secretly in Nuremberg. Bessemer found the formula in an old tome at the British Museum, and it was every bit as laborious as

he'd guessed—so much so that the only way to better it was to leapfrog it entirely, to invent bronze powder anew. After much experimentation, Bessemer devised an engine that ground out bronze powder far faster than any current process. When he showed the results to one-importer, the man offered him £500 yearly on the spot for use of the process.

That is when Bessemer knew it must be worth a great deal more than £500.

Moreover, he knew that as soon as he filed a patent, he probably wouldn't even see £500 off it. He'd have to keep it secret. But how?

There were powerful machines of many tons in weight to be made; some of them were necessarily very complicated, and somebody must know for whom they were. . . . [So] when I had thus devised and settled every machine as a whole, I undertook to dissect it and make separate drawings of each part, accurately figured for dimensions, and to take these separate parts of the several machines and get them made: some in Manchester, some in Glasgow, some in Liverpool, and some in London, so that no engineer could ever guess what these parts of machines were intended to be used for.

Quietly, he set about building a small factory in a London suburb. It had only one entrance and no windows. And once the factory was running, no worker was allowed to see more than a fraction of the interior—ever. Time and again, industrial spies from Nuremberg sailed back home empty-handed.

In the end, no one really knew how the process worked . . . except for Henry Bessemer. He became very rich; on the cusp of the Gilded Age, his factory provided the gilding. Had he patented his process, it would have become public domain after just fourteen years, around 1870—squarely in the middle of the greatest demand. But, without a patent, the only way to get cheap bronze powder was to go to Bessemer and his mysterious, windowless brick building.

He kept his process secret for more than forty years.

EPHRAIM BULL FACED a special challenge: the actual process of creating the Concord grape was really no secret at all. After all, Dr. Van Mons had already been doing it for decades with pears over in Belgium. It was the result that had to be kept secret. And that was tricky indeed, because there is one absolutely crucial difference between making grapes and making bronze powder:

Grapes have seeds.

And, worse still, the vines have buds. You can clone with impunity. It was still a long way away from 1995, when the Delta & Pine Land Company's patent on the "Control of Gene Expression" resulted in the much-reviled "terminator seeds." In the nineteenth

century the only way to keep seeds from proliferating was through food processing, not genetic engineering. Bull needed to somehow sell the sweetness and flavor of the Concord grape without actually selling the grape—to sell the golden eggs but not the goose. But in 1854 there was simply no way to do this.

Bull's life became occupied by other pursuits; in 1855, just as his profits were vanishing, he was elected to the Massachusetts house of representatives. The Concord grape had already become so famous that his colleagues sensibly appointed Bull chairman of the committee on agriculture. And as the years passed, he became a fixture of Concord life and lore: a member of the school board, a recruiter during the Civil War, and the caretaker for Hawthorne's house while the writer was off on diplomatic duty in Britain. Although Bull was a rather neglectful caretaker, the families stayed close—sometimes Ephraim's daughter Mary would wander into the neighbor's backyard, wanting another drawing lesson from Mrs. Hawthorne.

Yet Bull was a changed man. Although he continued breeding grape varieties for the rest of his life, he refused to let anyone else have them. His hoarded labors were enormous and exacting: "From over twenty-two thousand seedlings," he once remarked, "there are twenty-one which I consider valuable." The first was the Concord; the next twenty, which visitors described as perfectly good varieties of red and white grapes, never made it to market. It was not wise to ask Bull about the notion of selling them.

"There are no honest nurserymen," he'd snap. "I shall be cheated."

Meanwhile, he was to watch his Concord grape flourish and create fortunes around the country. Millions of acres were cultivated, and by the end of the century more Concords were being grown in the United States than every other grape variety combined. They were immensely popular for very good jelly and for very bad wine.

It is not impossible to make a decent wine from Concord grapes, but—like most native varieties—they have a "foxy" undertone that spoils the delicate flavor of any good wine. There are ways for a vintner to remove this foxiness, but cheap winemakers didn't bother. The vintner George Husmann complained that what winemakers were doing with the Concord was "reprehensible"—"These gallonizers have done a great deal of mischief by bringing their trash before the public, and calling it wine." But the Concord was such a hardy grape, and the profits from hooch jugs so good, that vintners hardly cared. Much later, during Prohibition, tipplers could even buy a thinly disguised fermentation kit called Vine-Go, designed to allow you to turn your virtuous Concord grape juice into really wretched wine.

Bull watched from the sidelines as his creation was perverted to enrich others. He could only think: it didn't have to be this way.

He was right.

BULL, PERHAPS, WAS born in the wrong time. There was a way to sell the grape essence without selling the seed: grape juice and jelly, manufactured and packaged with the latest in pasteurization and bottling technology. Had Bull been able to do this in 1854, his life might have turned out very differently. But the fortune fell to someone else.

Thomas Bramwell Welch had no intention of being a food tycoon. Originally a minister, Welch was a marvelously impractical fellow who could scarcely stay in any one profession or one state for very long. When he tired of ministering, he attended medical college and became a doctor. He tried his hand at his own bottled tonic for upset stomachs: Dr. Welch's Neutralizing Syrup. Then, ready for another change, he went to dental college and became a dentist. This profession he managed to hold for two decades, but still he could not stay settled. After experimenting with zinc and gold fillings, he founded a company to manufacture Dr. Welch's Dental Alloys. Then he established a dental magazine with a nationwide circulation. And, taking a cue from Webster, he even published his own phonetic Sis-tem for Simplified Spelling. The "sistem" did not catch on.

He had two great fascinations, really: religion and science. The Welch household always had carefully read copies of Scientific American around, as well as numerous missionary reports from Africa. It was at the intersection of these two worlds that Welch met his fortune. Welch was a teetotaler, and yet deeply believed in the holiness of the communal sacrament. But how could a good dry Christian drink wine? The problem was underscored for Welch when, after letting a visiting clergyman stay at the house, the fellow got smashed on the communion wine—a not uncommon outrage among some men of the cloth.

The trick, then, was to make nonalcoholic grape juice that would keep as well as wine would. And so it was that in 1869 "Dr. Welch's Unfermented Wine" was born. Welch himself picked the grapes from his backyard trellis, strained the juice out, and then boiled the bottles. It was an innovation that nearly bankrupted his family. "For two or three years following," his son later mused, "you squeezed grapes; you squeezed the family nearly out of the house; you squeezed yourself nearly out of money; you squeezed your friends."

He also squeezed his customers: at $12 a quart, the stuff was astronomically expensive. Furthermore, Americans had never had grape juice before: they didn't know what to make of it. "The demand had to be created," grandson Edgar Welch later commented. But eventually prices came down, and through intensive marketing at the 1893 World's Fair—the same fair that introduced most Americans to a bizarre item called grapefruit—the Welch brand became famous.

And where was the octogenarian Bull during the 1893 World's Fair? Why, at the Concord poorhouse.

BILL HAD LIVED long, though he'd never got the hang of aging gracefully—he wore a shiny blond wig in public. One neighbor witnessed his hidden countenance: "A transformation occurred almost as startling as those in a theatre, and he appeared as an aged man with snow white beard, nearly bald, oftenest seen in a dressing gown and little black cap, tending his plants lovingly."

At the age of eighty-five he was still tending his garden and clambering up ladders. But one fall day in 1893 he fell down from his ladder, and from then on he needed frequent care. After exhausting his friends' hospitality, Bull was finally sent to the Concord Home for the Aged, where he would live on in poverty. His lingering injuries were not just physical. In his old age, he'd hoped against hope one last time, and tried to introduce a new variety of grape commercially. But it failed badly and took all his money with it.

By 1894, an editorial writer in the agricultural magazine Meehan's Monthly was appalled by the fate of the father of the Concord grape:

[Imagine] the commonwealth without this exquisite fruit. It is safe to say that we should be poorer to the extent of many scores of thousands of dollars annually. What Bull did for the country is certainly worthy of due reward as is the work of McCormick or Colt or Singer. He found a common species of grape such as any farmer would deem valueless and leave for his birds in hedge-rows; he spent years modifying it by the most painstaking selection and finally gave us a delicious, cheap, and most helpful food, which will be supplying life and pleasure to millions of persons for ages after this generation has vanished.

Readers did not have to wait long to see Bull's generation vanish. One year later, the old man was dead.

THE GRAPES LIVED on, of course: if you visit his Grapevine Cottage, you can still see them growing all around. But one might wonder if, after years of shying away from selling his grapes, followed by one last final flop, Bull had really given up hope. Had the sweet grape made a man bitter?

The epitaph on his headstone in Sleepy Hollow Cemetery, not far from his eternal neighbors Emerson, Thoreau, and Hawthorne, stands as an answer. It was ordered by Bull himself.

EPHRAIM WALES BULL 1806-1895

He Sowed, Others Reaped.