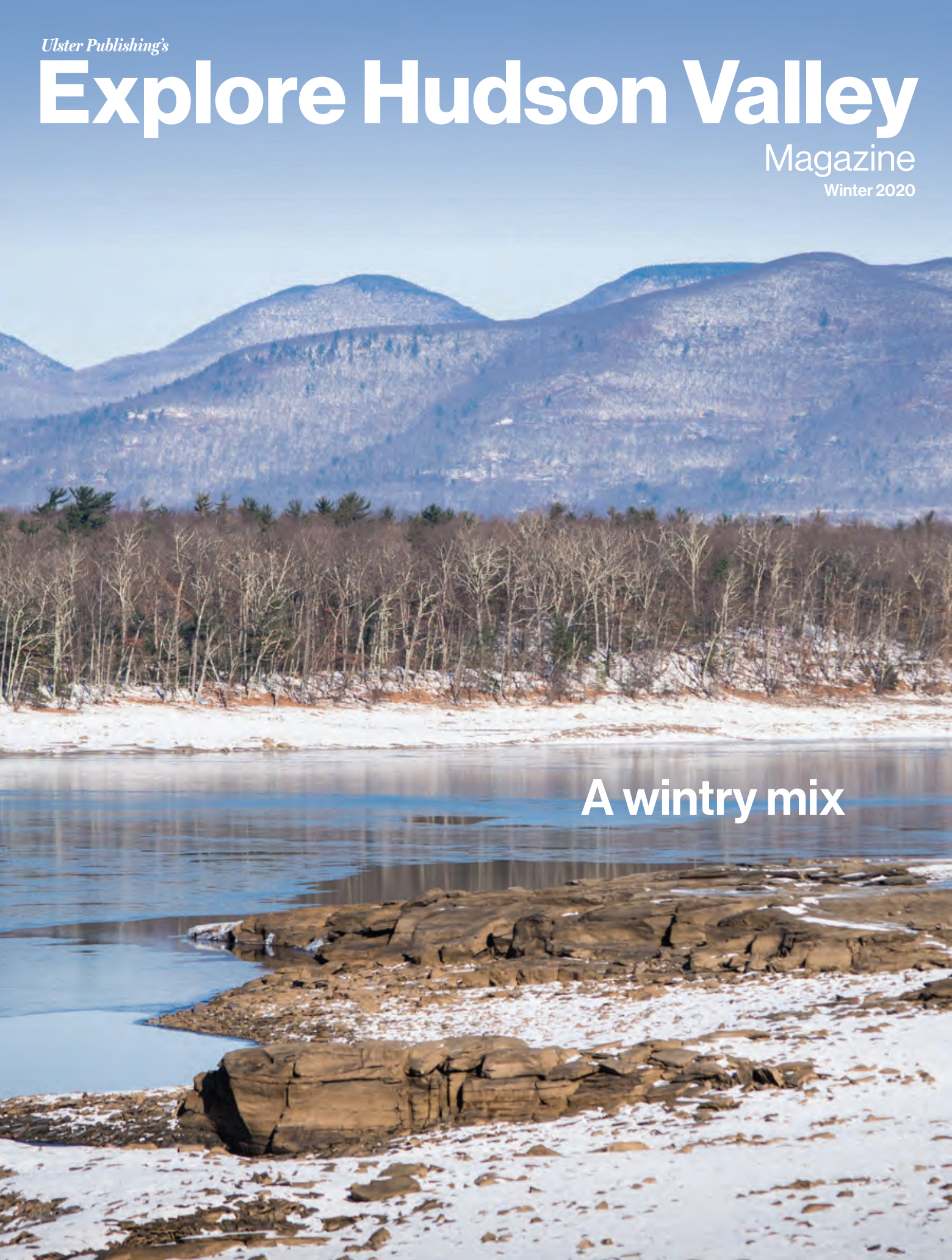
Ulster Publishing's

Explore Hudson Valley

Magazine

Winter 2020



A wintry mix

WILLIAM STEIN & CHRISTOPHER BERRY

Dating back some 386 million years, it's the world's oldest-known fossil evidence of a forest, predating by two or three million the site in Gilboa that was previously regarded as the earliest of its kind. Shown above, left: Aerial shot of a well-preserved Archaeopteris root system.

Finding your roots

World's oldest forest unearthed in Catskills quarry

Frances Marion Platt

No matter how much of the Appalachian Trail you've hiked or how many Catskill or Adirondack High Peaks you've bagged, our Eastern mountains look measly when you hold them up against the Alaska Range, the Rockies, the Cascades, the Sierra Nevada. There is, however, a different way to look at this comparison that might make you feel better: through a lens of time rather than altitude. The still-seismologically-active mountains of the West are much younger than the long-eroded Appalachians. The orogeny (mountain-building period) of the Rockies only dates back 55 to 80 million years. Compared to the East, that's chicken feed.

While the oldest mountains on Planet Earth are in South Africa, the Blue Ridge in Virginia makes the Top Ten list, with rock layers datable back 1.2 billion years. The uplift of the Appalachian chain began in earnest about 470 million years ago, during the Ordovician Period, when the East Coast of the North American paleocontinent Laurentia lay about where the Hudson Valley is now (although the entire continent was then positioned slightly south of the Equator). A crescent of small islands that geologists call the Taconic Arc was riding a tectonic plate that bumped into Laurentia, creating the Taconic Mountains and adding what is now western New England to the Iapetus Ocean coastline. Today's Taconics are but a tiny, worn-down remnant of what was once a major geographic feature.

Millipedelike creatures called myriapods likely shared this forest ecosystem, but dinosaurs would not begin to evolve for another 140 million years.

A second arc of islands, Avalonia, followed with greater force after linking up with the small continent of Baltica (which was later to head off eastward again, to become the basis of Western Europe).

It struck Laurentia about 430 million years ago (Silurian Period), gradually closing up the Iapetus Ocean, adding the rocky mass of eastern New England and triggering the Acadian Orogeny, which piled up what would become the northern Appalachians. A massive range called the Acadian Mountains then paralleled the coast from New York to Virginia.

The most violent wave of orogenic activity in the East was yet to come, when Gondwanaland slammed into Euramerica (Laurentia + Baltica) to form the temporary supercontinent Pangaea. This was the Alleghenian Orogeny, which spanned three geological periods – Mississippian, Pennsylvanian, Permian – from 325 million to 260 million years ago. It created the Alleghany Plateau and pushed the Appalachian mountain mass – then the Central Pangaean Mountains – to heights that likely exceeded the present-day Rockies.

That upheaval wasn't what made our Catskills happen, however. Their genesis came earlier, in the masses of sediment washed westward in a great delta of the Iapetus – by then a narrow inland sea – as the Acadian Mountains eroded. This occurred during the Devonian and early Mississippian Periods, 395 to 325 million years ago. Technically speaking, the Catskills aren't even classified as mountains, but as a "dissected plateau," formed not by uplift but by eons of erosion from water running downhill to the receding sea.

Don't be disappointed, though. If you were one of those kids who wanted to be a paleontologist when you grew up, you may recall that the Mississippian and Pennsylvanian taken together add up to what's called the Carboniferous Period. Yes, that's when all those coal deposits in Pennsylvania were being formed – from huge masses of plant life. The shoals of sediment worn down from the Acadian Mountains became fertile soil for some of the world's earliest forests. So densely did they grow that they ended up causing catastrophic climate change that is the opposite of the situation facing us now, sucking CO_2 out of the atmosphere and fixing it underground as peat and coal. Air temperatures and humidity dropped; habitat became fragmented; many species of plants and insects went extinct in a global event known as the Carboniferous Rainforest Collapse, about 305 million years ago.

And now, a new scientific discovery in the northern Catskills gives us something amazingly special about our region to inspire pride of place: In the December 2019 issue of *Current Biology*, William Stein, professor emeritus of Biological Sciences at Binghamton University, published a study with dramatic photographs of the spreading imprints of Devonian Period tree roots from the floor of an abandoned quarry in the Green County town of Cairo. Dating back some 386 million years, it's the world's oldest-known fossil evidence of a forest, predating by two or three million the site in Gilboa, on the western edge of the Catskills, that was previously regarded as the earliest of its kind.

What makes the Cairo site even more exciting to scientists, according to Stein, is the diversity of tree species found. The Gilboa site was dominated by specimens from the genus Eospermatopteris: primitive, short-lived, weedy, shallow-rooted plants resembling tree ferns. Cairo has them too. But the knockout discovery at the quarry – painstakingly excavated from layers of sandstone, and now protected from being obliterated by off-road vehicles by strategically placed small boulders – is a labyrinthine network of roots spanning 18 feet in diameter and digging deep into the soil. Stein has identified it as an Archaeopteris, a very early tree with a woody trunk and broad, flat leaves adapted for efficient photosynthesis, believed to be a precursor of seed-producing trees. He described the root system to *Smithsonian Magazine* as "strikingly modern, essentially what you'd see outside in my yard right now."

Remnants of a third type of early tree were also found at the site, tentatively identified as an isoetalean lycopsid with stigmarian rootlets. Such plants were common denizens of coal swamps of the Carboniferous Period, but according to the researchers, they were not previously known to have existed as early as the mid-Devonian.

Stein and his team hypothesize that the stand of trees at the Cairo quarry was killed by a flash flood. Skeletal fossils of primitive types of fish also were found nearby. Millipedelike creatures called myriapods likely shared this forest ecosystem, but dinosaurs would not begin to evolve for another 140 million years. And the uplift of the present Rocky Mountains was still more than 300 million years in the future. So take that, Wild West. ♦

Explore Hudson Valley
A wintry mix

Editorial

EDITOR: Julie O'Connor
CONTRIBUTORS: John Burdick, Dion Ogust
Frances Marion Platt, Lynn Woods

Ulster Publishing

PUBLISHER: Geddy Sveikauskas
ADVERTISING DIRECTOR: Genia Wickwire
ADVERTISING: Lynn Coraza, Pam Courselle, Elizabeth Jackson, Angela Lattrell
Ralph Longendyke, Sue Rogers, Linda Saccoman, Tobi Watson, Jenny Bella
PRODUCTION MANAGER: Joe Morgan
PRODUCTION: Diane Congello-Brandes, Josh Gilligan, Ann Marie Woolsey-Johnson
CIRCULATION: Dominic Labate

Wintry Mix is one of four *Explore Hudson Valley* supplements Ulster Publishing puts out each year. It is distributed within the company's five weekly newspapers – *Woodstock Times, New Paltz Times, Saugerties Times, Kingston Times* & *Almanac Weekly* – and separately at select locations, reaching an estimated readership of over 50,000. Its website is *www.hudsonvalleyone.com*.

Ulster Publishing (est. 1972) is a Hudson Valley media company with its office at 322 Wall Street in Kingston. For more info on upcoming special sections, including how to place an ad, call (845) 334-8200, fax (845) 334-8202 or e-mail info@ulsterpublishing.com. Cover photo of the Ashokan Reservoir by Dion Ogust.

Ask a Naturalist:

Is a groundhog's shadow a harbinger of spring?

John Burdick

ALMOST ALL ANIMALS made of more than one cell have symbolic, mythic, shamanic meanings and resonances in the cultures of the world. Many, like birds, are believed to tell the future. Few have so precise an oracular calling as a single annual instance of predictive meteorology. While Groundhog Day was first celebrated in 1887 (in Punxsutawney, Pennsylvania, famously), the myth finds its origins in the Christian holyday of Candlemas: a combination of superstition and common sense by which the length of winter was measured and calculated in candles. The Germans were the first to associate the ritual with the groundhog, developing the curious myth that we all know: If the groundhog emerges from its hole and sees its shadow, it becomes frightened and retreats back into the hole, prophesying six more weeks of harsh winter. If it sees no shadow, the way is cleared for an early spring.

BARBARA L. HANSON

First described in 1758 by the Swedish scientist Carl Linnaeus, the groundhog

is a well-known character in the Hudson Valley – a bane of farmers, but an awful lot of fun to observe, with their vast networks of holes and tunnels and their odd composure as they appear to stand or sit erect by the side of the road, eating an apple in a vaguely humanoid way.

Multiple names and odd myths aside, they are rather literally shrouded in mystery, as much as their essential life functions happen underground. We caught up with Elizabeth Long, PhD – director of Conservation Science at the Mohonk Preserve and one of our most knowledgeable and expressive go-to experts in the Ask a Naturalist series – to shed a little light underground and help us understand more about the curious rodent we celebrate for its prophetic powers each February 2.

Groundhog or woodchuck?

Both! I grew up in southwestern Virginia, where we typically use the word "groundhog" to describe these large rodents. Since moving to the mid-Hudson Valley, I've noticed that locals are more apt to use "woodchuck" when talking about the animals that the Linnaeus called *Marmota monax* in 1758.

CHRIS FLOOK

While Groundhog Day was first celebrated in 1887 (in Punxsutawney, Pennsylvania, famously), the myth finds its origins in the Christian holyday of Candlemas: by which the length of winter was measured and calculated in candles. The Germans were the first to associate the ritual with the groundhog, developing the curious myth that we all know: If the groundhog emerges from its hole and sees its shadow, it becomes frightened and retreats back into the hole, prophesying six more weeks of harsh winter. If it sees no shadow, the way is cleared for an early spring.

Groundhog makes sense; it's a kind of hoglike thing, and it's in the ground. What, however, is the exact nature of their relationship with wood?

Despite the name, woodchucks don't "chuck" anything, nor do they eat wood.

The term seems to have come into English usage via Native American speakers who referred to them as *wuchak*. Another colloquialism, "whistlepig," refers to the alarm call that they make when startled by predators or other perceived dangers.

Hog, pig...that's an awful lot of porcine descriptors for a rodent. I'd like to add "tunnel boar" and see if it catches on, okay? Anyway, if they don't eat wood, what exactly do they eat?

Mostly plants. Their typical diet is heavy on grasses, wild berries or scavenged garden or farm vegetables. Like many "vegetarian" animals, though, they will eat meat if they get the opportunity. Insects and other small invertebrates are common foods, and they will even eat small ground-nesting mammals or birds if they get the opportunity.

I lived in an apple orchard for five years at

one time and developed quite a fascinating relationship with the community of groundhogs that lived around – and under – my house. My landlords, however – apple farmers – had a much less kindly attitude toward them. Their complex tunnel networks can cause quite a bit of damage to property, farm vehicles and structures. Is it possible to get a groundhog out from, say, under a shed? For its own good as well as the shed's?

Groundhogs typically live solitarily in a single burrow with multiple entrances. In our area, these burrows can get quite deep, as the animals seek to get below the winter frostline. While they're unlikely to undermine your foundation in the short term, a burrow-and-tunnel system that has been in use for many years can eventually start to make the ground unstable. And yes, they have also been known to cause a lot of damage to vehicles and yard and farm equipment.

The first step to getting them out of your yard is to make the area unfriendly to them. Remove plants, wood, rocks or other substrate that they can use as cover. If you know there are abandoned burrows around, use heavy gravel to fill them in. Use a humane trap – or have a wildlife removal specialist do it for you – to live-trap the animal and relocate it. Be extremely careful! Wear gloves, and do not attempt to handle the animal. Groundhogs are rodents, which means they have extremely strong, sharp teeth and are capable of causing tremendous damage with their bite. They can also carry and transmit diseases or parasites, so clean the area and your clothing very well after you are done.

Some people have had luck applying repellants, such as cayenne pepper mixtures, into burrows once the animal is removed.

Okay, I have held my tongue long enough and can no longer hold off on the marquee question burning in our readers' minds: Is it true, or in any way a scientifically comprehensible myth, that if a groundhog sees its shadow we'll have a long winter, and if it doesn't, we'll have an early spring?

While groundhogs are impressive animals that are very well-adapted to changes in weather, sadly, they can't tell us much about the future weather. Groundhogs spend most of the winter in their burrows, hibernating. Their metabolism slows down dramatically and their physiological processes – heart rate, circulation, breathing – go into "sleep mode," just active enough to keep the animal alive. The deep burrow that a groundhog uses should keep the temperature fairly constant for the whole winter. While hibernating, the animal's fat supply functions as energy. When they emerge from the burrow in early spring, they have very little fat left and must quickly begin to locate food to replenish their stores.

So…no?

Yes. No. ♦

See *Groundhog Day* on the big screen at UPAC

Worse things can happen to a motion picture than to become permanently associated with an annual holiday. Such was the fate of the charming 1993 romantic comedy *Groundhog Day*, the tale of a curmudgeon's expiation, reform and rebirth. Written and directed by Harold Ramis, *Groundhog Day* stars Bill Murray as a TV weatherman who, during an assignment covering the annual Groundhog Day event in Punxsutawney, Pennsylvania, is caught in a time loop, repeatedly reliving the same day – until he gets it right. The Bardavon screens this American classic at the Ulster Performing Arts Center (UPAC) on Friday, January 31. All seats cost $6.

Groundhog Day
Friday, Jan. 31, 7:30 p.m., $6
UPAC, 601 Broadway, Kingston
www.bardavon.org

WinterFest on the Hudson Valley Rail Trail

The recently expanded Hudson Valley Rail Trail hosts an outdoor winter festival on Saturday, January 18 at its Rail Trail Depot location in Highland. The event features a Best of Fest chili contest, roasted chestnuts, toasted marshmallows, light snacks and beverages, wagon rides, woodcarving demonstration and activities for children of all ages. Admission is a mere $2, with children under 6 admitted free.

WinterFest
Saturday, Feb. 8, 11 a.m.-2 p.m., $2
Hudson Valley Rail Trail Depot
101 New Paltz Rd., Highland
(845) 691-6313
https://hudsonvalleyrailtrail.net

Joshua Bell to headline HVP benefit at Bardavon

IT IS VERY difficult to bear the reputation as the "best in the world" at anything. Anyone who thinks through the matter can see how ridiculous and unjustifiable that designation is – for anything other than timed or otherwise-measured sports performance, at least. Joshua Bell has not let the "world's greatest violinist" meme fluster him much at all. He just keeps on playing the music he wants to play with the people he wants to play with. I imagine they all have a giggle about it in the practice rooms. But let there be no doubt that Bell is among the great classical musicians of his era, and on an instrument for which mounds of famous featured music have been written: sonatas and concerti.

In a benefit performance for the Hudson Valley Philharmonic, the Bardavon presents the great Joshua Bell on violin and Alessio Bax on piano on Saturday, February 1. The pair will perform works from the Baroque, Romantic and modern eras: Schubert, César Franck, J. S. Bach and Ernest Bloch. Tickets for this benefit cost $100, $150 for a chance to meet Joshua Bell.

– John Burdick

Joshua Bell
Saturday, Feb. 1, 8 p.m., $150/$100
Bardavon, 35 Market St., Poughkeepsie
(845) 473-2072, *www.bardavon.org*

A time of ferment

The rise and legacy of Poughkeepsie brewing tycoon Matthew Vassar

Frances Marion Platt

And so you see, to old V. C.
Our love shall never fail.
Full well we know that all we owe
To Matthew Vassar's ale.

VASSAR COLLEGE LIBRARY | SPECIAL COLLECTIONS

Engraving of the Vassar Brewery by Henry Whinfield

Thus did Vassar College students and alumnae sing reverently of their alma mater's founder in days long past. Undeniably, much of the present glory of Poughkeepsie, the Queen City on the Hudson, was financed by the sale of brewed alcoholic beverages up and down the river, beginning early in the 19th century. Beer tycoon Matthew Vassar chartered the college that bears his name in 1861, and it opened its doors in 1865. His nephews John Guy Vassar, Jr. and Matthew Vassar, Jr. founded Vassar Brothers Hospital shortly thereafter. Indeed, the younger Vassar brothers had long lobbied their uncle to endow a hospital instead of a women's college to cement his legacy as a philanthropist. But other influences prevailed.

The sojourn of Matthew Vassar (1792-1868) in Dutchess County began when the Norfolk, England native was only four years old. His parents, James and Ann Bennett Vassar, farmers of French

Huguenot extraction (the family name was originally spelled Vasseur), were Baptists and decided to seek a more welcoming home in the New World. Emigrating in 1796, they settled on a farm along Wappingers Creek and began brewing ale in 1801, using barley that James' brother Thomas shipped from England. Apparently no one was growing grain for that purpose in New York at that time, because the family quickly encountered enormous demand for their product. They sold the farm, bought property in the City of Poughkeepsie along what is now Vassar Street and built a brewery.

Young Matthew, we learn from his 1866 autobiography, had numerous near-death experiences in his youth, from being bucked off a horse into a pond while still a toddler to nearly being swept overboard by a wave during the Atlantic crossing to three bouts of typhus and near-asphyxiation from charcoal fumes. He barely acquired any formal education, being kicked out of night school after throwing a bottle of ink at the schoolmaster who had just smacked Matthew in the head with a ruler.

FRANCES LEHMAN LOEB ART CENTER | VASSAR COLLEGE

Portrait of Matthew Vassar, brewer, philanthropist and founder of Vassar College, by Charles Loring Elliott

When at age 14 it came time for him to learn the family business, Matthew declared the idea of making a living by hawking alcohol "distasteful," so his father decided to apprentice him to a worse trade: that of a tanner. The tanneries of the day were noxious, foul-smelling places, and Matthew – with some connivance from his mother – fled on foot to seek his fortune on the west side of the Hudson. He met another English expat in what is now Balmville, near Newburgh, and went to work in his general store. He proved to have a good head for business; by 1810 he had saved up enough money and acquired enough bookkeeping skills to come back to join the family brewing concern, which was already thriving – until a malt-dust

DION OGUST

Matthew Vassar barely acquired any formal education, being kicked out of night school after throwing a bottle of ink at the schoolmaster who had just smacked him in the head with a ruler. A niece named Lydia Booth, who had begun her teaching career as a private tutor and opened the Cottage Hill Seminary on Garden Street, was the first to plant in Matthew's mind the notion that a fully accredited college for women was direly needed.

explosion and fire leveled the brewery a year later. Matthew's elder brother John Guy suffocated trying to retrieve hops from the wreckage, and their father was about to give up the business when Matthew decided to take over, continuing the manufacture of ale in his brother-in-law's dyeing factory. He also opened an "oyster saloon" in the basement of the county courthouse.

"In the following summer 1812 began the world," Matthew Vassar writes in his autobiography. He wooed and in 1813 married a Fishkill lass named Catherine Valentine. Exempted from the War of 1812 draft by his "alien" status, he found some investors and rebuilt the brewery at 12 Vassar Street, renaming it M. Vassar & Company. His orphaned nephews joined the operation in 1832. It soon became the largest brewery of its kind in the US, and Matthew expanded the operation with a larger building dubbed the Eagle built just above the waterfront in 1836, with a brewing capacity of 50 to 60,000 barrels annually. He acquired a fleet of sloops to transport the ale to markets north and south, and established distribution facilities in New York City and Troy.

This uneducated farm boy had become an extremely wealthy and influential man. He served as a Poughkeepsie village trustee in 1819, and in 1835 was elected president of the village on the Improvement ticket. He was among the party of dignitaries welcoming the Marquis de Lafayette to Poughkeepsie in 1824. He helped incorporate the Poughkeepsie Saving Bank, joined the board of the Farmers and Manufacturers National Bank, built a dock for the Poughkeepsie Whaling Company, bought out his brother Charles' bankrupt brickyard. And despite his own lack of education, in the 1850s Matthew Vassar became a trustee at the University of Rochester, as well as president of the Poughkeepsie Lyceum of Literature,

Science and the Mechanical Arts, hosting a lecture by Ralph Waldo Emerson. He took an interest in the Abolitionist movement and helped purchase the freedom of a tailor named John A. Bolding, a fugitive slave from South Carolina.

An early attempt at Prohibition, the Prohibitory Law of 1855, threatened the business, and the Vassar family was active in lobbying for its repeal in 1857. A newspaper editorial of the day lauded Matthew's "high ideals" and termed beer "the safest beverage known," crediting it with preventing crime, allowing children to go to school, lowering taxes and decreasing unemployment. But the notion that brewing was an unsavory way to make one's living never stopped haunting him, apparently, and a visit to his homeland in 1845 inspired in him the desire to leave some sort of bricks-and-mortar legacy comparable to Guy's Hospital in London, which had been founded by a relative in 1721.

By 1850 Matthew Vassar was planning

the 50-acre estate called Springside, whose gardens – designed by the great landscape architect Andrew Jackson Downing – he intended to open to the public. But he wanted to do something more. His nephews argued for a hospital; he left that project to them. A niece named Lydia Booth, who had begun her teaching career as a private tutor, had opened the Cottage Hill Seminary on Garden Street, and was the first to plant in Matthew's mind the notion that a fully accredited college for women was direly needed. When Booth died in 1855, a clergyman and educator named Milo Parker Jewett, founder of the Judson Female Institute in Alabama, purchased the Seminary and soon became Matthew's confidant.

Jewett encouraged him to pursue his vision of founding the Vassar Female College. "Great hospitals are for great cities. To spend two or three millions of dollars in establishing a hospital in Poughkeepsie, seems to me an unwise use of money. I think you might as well throw it in the Hudson River," he wrote to Matthew, urging him instead "to build and endow a college for young women, which shall be to them what Yale and Harvard are to young men…a monument more lasting than the pyramids; you will perpetuate your name to the latest generations; it will be the pride and glory of

DION OGUST

DION OGUST

Poughkeepsie; and honor to the state, and a blessing to the world."

Matthew recruited a Board of Trustees from among his Rochester colleagues. In January 1861, the New York State Legislature passed an act incorporating Vassar College, and a month later, Matthew presented the trustees with a tin box containing half of his fortune – $408,000 – and the deed for a 200-acre campus, the former Allen Farm. While construction was still in progress, he purchased the entire art collection of Elias Lyman Magoon, which became the basis of what is now the college's Frances Lehman Loeb Art Center.

Jewett was appointed Vassar College's first president, but his tenure didn't even last until opening day. Constantly at odds with the Vassar nephews, he eventually managed to alienate Matthew as well, calling him "fickle and childish" in a letter that fell into the hands of a trustee, and he was forced to resign in 1864. Among other issues, the two founders didn't see eye-to-eye on policies for hiring professors. Matthew began an enthusiastic correspondence with Sarah Josepha Hale, a suffragist and the editor of the popular women's magazine, *Godey's Lady's Book*. Hale urged him to employ female instructors wherever possible, and Matthew took up that crusade with enthusiasm; his very first hire was the great astronomer Maria Mitchell.

Strange as it may seem, Matthew's wife Catherine, who died in 1863 after having apparently been an invalid for many years, was never documented as showing any interest whatsoever in educational opportunities for women. Matthew mentions his wife only once or twice in his diaries; she rarely traveled with her husband, but was well enough to accompany him on his 1845 voyage to England. In his memoirs, W. S. Cooper, the son of Matthew Vassar's doctor, recalled meeting "Aunt Katie" at the Vassars' city mansion at 9 Vassar Street when he was a small boy. He was told on one occasion that Aunt Katie was too ill to join them at dinner. Cooper described Catherine Vassar as " a good wife, model housekeeper of the old-fashioned type" who "kept to herself… If the Uplift of Woman and a Higher Education for her Sex had individualized itself and hit Aunt Katie a blow in the face, she would not have felt or given recognition."

High-society gatherings at the Vassar home were presided over by one Amanda Germond, an educated woman who appears to have served as a personal assistant to Matthew as well as housekeeper. Matthew refers to her several times in his diaries, delegating to her such important duties as bringing boughs of magnolia down to the train station to decorate the coffin of President Lincoln when the funeral car stopped in Poughkeepsie, Matthew himself being too ill at the time to attend.

In his final years, Matthew Vassar is said to have delighted in visiting his new campus – daily, when his health permitted – and conversing with the students. At the behest of Sarah Hale, who thought it patronizing, the word "Female" was dropped from the college's official title in 1867. Matthew made arrangements to have a bronze statue of himself sculpted for display on the campus, and at the same meeting on June 23, 1868 where the trustees were to vote to fund it, he died right in the midst of delivering his retirement speech, urging them to remain committed to "progress." He was buried in the Poughkeepsie Rural Cemetery.

Matthew and Catherine Vassar had no offspring, so his nephews carried on the brewery business for a few years thereafter; but immigration trends had turned popular tastes away from English ales toward German lagers, and the Eagle was shut down in 1899. By 1880 John Guy, Jr. and Matthew, Jr. had already converted the 9 Vassar Street mansion into the Vassar Home for Aged Men; we know it today as the Cunneen-Hackett Building. They converted the original brewery building at 12 Vassar Street into the Vassar Institute. ♦

On a roll

Schatz Bearing's 21st century manufacturing success story

Lynn Woods

When one refers to manufacturing in the Hudson Valley, it's usually in the past tense. The wealth of Kingston, Poughkeepsie, Newburgh and other cities and towns in the region was built on industry that peaked early in the last century, precipitously waned in the 1970s and, with the closing and downsizing of IBM's plants, crashed in the 1990s. Yet manufacturing is by no means dead. Take the case of the Schatz Bearing Corporation, a name associated with industry in Poughkeepsie for more than a century. With 115 employees and 50,000 square feet of production space, the company is flourishing, having built its success on a process of reinvention that started more than 30 years ago.

LYNN WOODS

"Our strategy is to be flexible, versatile and responsive," said Schatz president Stephen Pomeroy.

Like the Schatz Federal Bearing Company, its predecessor, which supplied the automotive industry from 1910 through the 1970s, Schatz Bearing Corporation manufactures bearings – but not the high-volume kind that could more cheaply be produced in China. Schatz Bearing makes small quantities of precision parts forged of high-quality metals for the aerospace, medical equipment and semiconductor industries:

highly regulated sectors in which safety and precision are paramount.

"Being a manufacturer in the US is challenging and has been for decades," said Schatz president Stephen Pomeroy. "You have to be selective about the industries you target…you can't be a US manufacturer for bearings in ceiling fans or filing cabinets, because the labor rates are low and safety is not an issue."

Pomeroy said that his company, which operates out of a complex of long, low-slung red-brick buildings on Fairview Avenue, a stone's throw from the Dutchess County Rail Trail, is growing in employment and sales. "We're constantly getting better and better," he said. "We invest in new technologies that enable us to switch from part to part very quickly." That nimbleness recently enabled Schatz to gain new customers in the space industry.

Founded in New Haven in 1896 by the father-and-son team of Adolf and Herman Schatz as a metal specialties shop, the original company moved to Poughkeepsie in 1910 and focused on producing ball bearings for the automotive industry. It rapidly expanded, adding new buildings in 1916, 1920 and 1936 (the hulking brick factories, located near the current company's facilities, have long been abandoned) and reached a peak of 1,200 employees during World War II.

Up through the 1960s, Schatz Federal was one of Dutchess County's "highest-wage manufacturers apart from IBM," according to *Main Street to Mainframes: Landscape and Social Change in Poughkeepsie* by Harvey Flad and Clyde Griffen. But, like so many other manufacturers in Northeastern and Midwestern cities, it could not hold its own against cheaper competition, both foreign and domestic. In 1980, after the loss of its two big-volume customers, Ford Motor Company and NAPA, and a punishing 15-month-long strike, the company filed for bankruptcy. It was auctioned off to a Canadian company for $7.3 million, which in turn struggled to make a profit. Stephen's father, Walter Pomeroy, was a partner in one of the Canadian company's suppliers. Walter wanted out of the partnership, which was located in Connecticut, "so in 1985 my dad used the proceeds from his half of the company to buy the Canadian guy out" and moved to Poughkeepsie.

Stephen was about to enter graduate school, and went on to earn a PhD in

Electrical Engineering. (In retrospect, "the ideal thing would have been to study mechanical engineering," he noted ruefully.) "My father was late in his career and knew I had entrepreneurial interests, so he asked if I wanted to join the company." Stephen agreed, with the intention that "I would do it for a year, and then do something else."

Instead, he got hooked, becoming president in 1992 (his dad retired in 1994). He studied the art of manufacturing and

> "We're constantly getting better and better," Pomeroy said. "We invest in new technologies that enable us to switch from part to part very quickly."

was specifically influenced by the Toyota Production System, whose "just in time" philosophy and focus on eliminating waste was a precursor of Lean Manufacturing. Change – adopting new ways of doing things – was essential to the company's eventual success, though initially he faced resistance.

He considers hiring the right people absolutely key to running a prosperous company. New employees at Schatz undertake a 90-day introductory period to see if the job is a good fit; more

Founded in New Haven in 1896 by the father-and-son team of Adolf and Herman Schatz as a metal specialties shop, the original company moved to Poughkeepsie in 1910 and focused on producing ball bearings for the automotive industry. It rapidly expanded, adding new buildings in 1916, 1920 and 1936 (the hulking brick factories, located near the current company's facilities, have long been abandoned) and reached a peak of 1,200 employees during World War II.

than half the time, it's not. But "once somebody is hired, they stay," Pomeroy said. Employees undergo extensive training, provided through the Continuing Education program at Dutchess Community College and through the Council of Industry, the Hudson Valley association of manufacturing, of which Pomeroy is a member. Last year Schatz received a state grant to fund a training program through the college. According to Pomeroy, "Manufacturing offers a lot of positions." At Schatz, they include assemblers, on the lower end of the salary scale, and higher-paid production grinders, along with material handling, quality assurance, finance, engineering, purchasing and customer service.

"We pay well, offer good benefits and we have challenging things for people to work on," he said. The company holds a meeting each month at which "we go over what we sold and our new products. We have a whole sea of eyeballs and experience, and we want people to speak up, whether it involves a safety issue, quality or productivity. We have a really great crew."

The company has reduced its carbon footprint by upgrading to LED lighting,

switching from oil to natural gas to fuel its compressed air system and disposing of all its waste, including batteries and fluorescent lights, responsibly.

Two challenges stand out. One is the rising cost of health insurance, which has been increasing at the rate of ten percent a year. "When I think about the things we've done as an industry to drive costs down, it seems to me the healthcare industry can go in that direction" – toward a hospital system that is more efficient and specialized – he said.

The other big challenge is a reduction in prices for bearings sold to Boeing, a major customer and driver of the aviation industry, which is under competitive pressure from Airbus. Over the past five or ten years, Boeing has pushed suppliers to lower prices. Pomeroy said that the grounding and subsequent halt in production of the 737 Max plane, Boeing's best-selling aircraft, also is negatively impacting his business.

Despite these challenges, Schatz is beefing up production and expanding into a second shift. "We're constantly looking for other opportunities in little corners of the market," said Pomeroy. For example, the company recently developed and produced specialized bearings for a satellite company in nine months, developing a capability it didn't have a decade ago.

Being "the small guy" among a handful of precision bearing companies supplying the world has its advantages: Schatz has the ability to make bearings of all sizes, from an inside diameter of four millimeters to over a foot, and fulfill special orders: a necessary condition in aerospace. "Our strategy is to be flexible, versatile and responsive," Pomeroy said – principles that have brought the company enduring success. ♦

The region's best places to spot bald eagles

Although the bald eagle is a ubiquitous symbol, from early childhood on, to anyone growing up in America, actually seeing a live specimen used to require a trip out West, or at least to a zoo. The use of the pesticide DDT, which weakens the structure of eggshells and makes them prone to break when the mother bird sits on them, had wiped out what little native eagle population remained in New York State by the mid-20th century. Thanks in large part to the alarm raised by Rachel Carson's 1962

New Yorker exposé *Silent Spring*, DDT was banned ten years later. Biologists in New York State collected 198 bald eaglets, mostly from nests in Alaska, for reintroduction or "hacking" into the wild between 1976 and 1988. By 1989, they were reproducing in the Hudson Valley on their own.

Today the Department of Environmental Conservation reports that there are more than 170 nesting pairs of bald eagles in this state. Add to these year-round residents a substantial number of birds that summer in Canada and head for the Hudson Valley in December, in search of unfrozen water for fishing, and you'll find that January and February are the peak time to catch a glimpse of these stately raptors. These days, the birds have become so solidly reestablished in this flyway that an encounter can be purely accidental and occur in unlikely-seeming places; I recently saw a full-grown pair swoop low over the strip malls of Route 9W in the Town of Ulster. But your luck will be far less random if you head to one of the known eagle-viewing spots listed below.

Some eagle habits to keep in mind before you go: They prefer wooded areas near water, with tall trees for nesting and perching. Two reliable Ulster County viewing locations – a pine grove on the shore of the Ashokan Reservoir and an enormous sycamore by a streambank in the Plattekill Gorge south of New Paltz, popular with Wallkill Valley Rail Trail walkers – exemplify this type of habitat. Baldies are primarily pescatarians, so ice floes and river islands are good places to spot eagles enjoying a meal. They tend to be most active between 7 and 9 a.m. and 4 and 5 p.m.

Mongaup Valley Wildlife Management Area, Forestburgh

Initially acquired for the primary purpose of protecting critical wintering habitat for bald eagles, the 11,000+-acre Mongaup Valley Wildlife Management Area (WMA) offers two eagle-viewing blinds. Eagles are especially attracted to the Mongaup Falls Reservoir because water releases by the utility that operates the reservoir's hydropower-generating facility keep the reservoirs from freezing over completely, providing access to plenty of finny prey.

Located on Sullivan County Route 43, the Mongaup Falls blind was recently fully renovated. In November 2019 it was dedicated to the memory of Dr. Ted Kerpez, a New Paltz resident who passed away suddenly in December 2018. Kerpez had long been the director of the wildlife program for Region 3 of the New York State Department of Environmental Conservation, including the agency's regional Endangered Species program; he was also one of the founding

Tax & **business**

Tax Tip ➤ Gift Giving

If you gave any one person gifts valued at more than $15,000, it is necessary to report the total gift to the Internal Revenue Service. You may even have to pay tax on the gift. Go to *Dolancpapc.com* for more details!

members of the Shawangunk Ridge Biodiversity Partnership.

In addition to the Dr. Ted Kerpez Memorial Eagle-Viewing Blind, the Mongaup Valley WMA is also home to a second blind on the Rio Reservoir, whose parking area is on Rio Dam Road, off County Route 42. Both blinds and parking lots are accessible to people of all ages and abilities, and provide ideal locations to view wintering eagles in shelters that minimize any disturbance to wildlife. Visitors are encouraged to view eagles either from their vehicles or the blinds, rather than on foot.

While eagles are the stars of the show at Mongaup Valley, other migrating raptors, waterfowl, white-tailed deer, turkey, ruffed grouse, coyote, fox, porcupine and black bear are also found at the WMA. Rare floodplain forest, perched bog and pitch-pine and oak/hickory woodland habitats attract wetland birds and species that prefer sedge meadows. You can download wildlife checklists to add more fun to your viewing on the DEC website at *www.dec.ny.gov/outdoor/68639.html*.

BRENDAN LALLY

Kowawese Unique Area at Plum Point, New Windsor

You may know this 102-acre county park on Route 9W on the outskirts of Newburgh as an easily accessible spot for a summertime picnic with a smashing view of Bannerman Island and the Hudson Highlands, or as a gently sloping 2,000-foot-long Hudson River beach that makes a great launch site for kayaks and canoes. But in winter it also affords excellent eagle-watching opportunities, as the big birds roost in trees along the riverbanks and gather to hang out on the ice. Check out the details at *www.orangecountygov.com/1478/kowawese-unique-area-at-plum-point*.

Constitution Marsh Audubon Center & Sanctuary, Garrison

This unique and beautiful tidal marsh on the east shore of the Hudson River, just south of the village of Cold Spring, serves as vital natural habitat in the Hudson River Estuary. It has been designated an Audubon New York Important Bird Area, a New York State Bird Conservation Area and a Significant Coastal Fish and Wildlife Habitat. In the warmer months, it's a busy site for nature education programs, bird studies, invasive species management and habitat restoration efforts. Wintertime is quieter, and therefore the perfect time to go watch some bald eagles as they feast on Hudson River fish. Visit the Audubon website for a list of upcoming events and activities at *https://constitution.audubon.org*.

Teatown's Hudson River EagleFest Croton-on-Hudson

Want to visit eagle-viewing spots in the lower Hudson Valley from the warmth of a tour bus,

with naturalists on board as guides? That's one of your options if you attend EagleFest, which the Teatown Lake Reservation in Ossining organizes each winter at Croton Point Park. This year it's happening from 9 a.m. to 4 p.m. on Saturday, February 8.

EagleFest's main attraction happens in the park, featuring live raptor shows, educators with viewing scopes observing wild eagles, children's activities, music, food trucks and 25+ environmental organizations – all in heated tents.

Admission to EagleFest costs $22 for people aged 12 and up, $13 for kids aged 6 to 11 if you purchase your tickets online at *www.teatown.org/eaglefest-tickets* by February 5. It'll cost $25 for adults, $15 for kids at the gate. There's an addition $35 fee for the bus tours, which will run between 9:30 and 11:30 a.m. and again from 1:30 to 3:30 p.m. Stops announced for this year include the New Croton Dam, Verplanck Steamboat Riverfront Park and George's Island Park in Montrose, although these may change due to weather. The bus tours are intended for guests ages 12 and over. To sign up for a tour, call (914) 762-2912, ext. 110.

On the day of the event, there will be free shuttles from the Croton-Harmon Station to and from Croton Point Park. If you're coming from the north, you may want to extend your viewing experience by taking the Metro-North Eagle Train with on-board naturalists. It departs from Poughkeepsie at 9:52 a.m. and arrives at Croton-Harmon Station at 10:52 a.m. To learn more about EagleFest, visit *www.teatown.org/events/eaglefest* or *https://bit.ly/30AOuQM*.

– Frances Marion Platt

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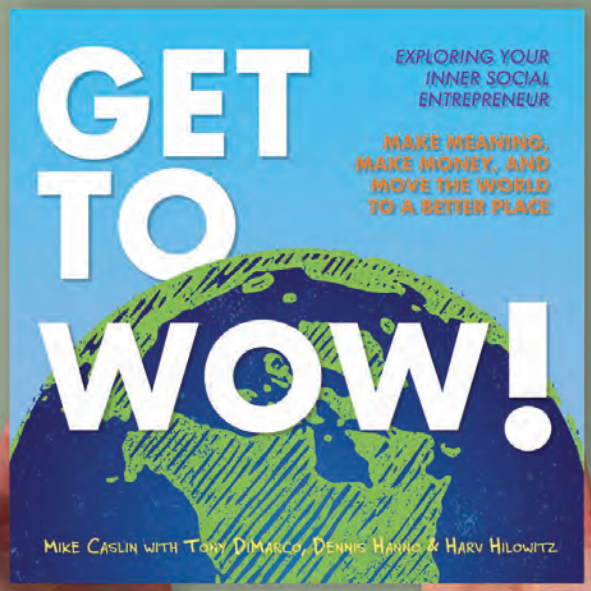

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