
Right: Circa 1950s real photo postcard showing Perham’s Maine Mineral Store. The rose quartz boulders on the right are from the Bumpus Quarry. John Taylor collection.


Inset left: Two pieces of elbaite from Plumbago Mining Corporation’s famous 1972 find. McCrillis Family photo.

Left: A circa 1933 passport photo of Dick Nevel (right), with his son Paul. Nevel collected great quantities of watermelon tourmaline at Newry during his tenure as mine superintendent.

Above: Louise Thompson stands at the exit of the underground workings at the Dunton Quarry. A series of large gem tourmaline pockets were discovered on the other side of the tunnel in 1972. Note the contact between the pegmatite and the overlying schist. Woody Thompson photo, 1975.
The Dunton Gem Quarry has long been a favorite collecting spot for mineral enthusiasts. And while people had collected abundant “watermelon” tourmaline crystals as well as matrix specimens at the Dunton for years, pockets and gem material were rare. That is until 1972 when a group of collectors, with the help of a local miner, made a historic rubellite discovery at the Dunton that set a new bar for the quarry and for New England tourmaline.

That miner — Frank Perham — was integral to many of the major discoveries at the Dunton. Frank’s father Stanley was the founder and owner of Perham’s Maine Mineral Store in West Paris, an institution in the area from its founding in 1919 until it closed in 2009. Perham’s was the go-to for equipment, information, and advice. Equipped with an explosives license, drill, and excavator, Frank was invariably called to assist when a collector found something at one of the area localities that couldn’t be recovered with mere hand tools.

This article is based on Frank Perham’s first-hand accounts and detailed descriptions*, many of which were recorded and transcribed in the course of preparing a biography of Perham entitled Frank C. Perham: Adventures in Maine Pegmatite Mining (Webber & Sprague 2014).

*Editor’s Note: In keeping with Frank Perham’s descriptions, we depart, in this article, from our usual use of metric units; instead using imperial units in all except specimen dimensions.

**HISTORY**

The Dunton pegmatite is located in an area referred to as “Newry Hill,” on the eastern slope of Plumbago Mountain, near the town of Newry, Oxford County, Maine. The Dunton pegmatite has been referred to by many names including “Dunton Quarry,” “Dunton Gem Mine,” and often just “Newry.” The mineralization was discovered in 1898 by Henry C. Hall, the brother-in-law of the landowner Joshua Abbott. In 1898 Edmund Bailey became the first person to blast for tourmaline in what was then just a ledge (King 2000). Hollis C. Dunton and partners leased the pegmatite from 1901 to 1904 to work it for gem tourmaline (Shainin & Dellwig 1955). Later, in the mid-1920s, when cesium had become an important component of radio tubes, the General Electric Corporation leased the Dunton to mine it for pollucite: (Cs,Na)₂Al₅Si₄O₁₂•2H₂O.

GE hired miner and collector Wallace Dickerson “Dick” Nevel as superintendent, and during his tenure Nevel collected the watermelon tourmaline that occurred along with pollucite. Nevel, it was said, buried his finds at the mine site, but he was tragically killed in a dynamite blast in 1938, before retrieving it. While rumors of his stash were apparently widespread, no one knew where it was buried.

Raymond Dean, a cutter at Perham’s, suspected that Nevel had buried his trove on the way to the outhouse. He ultimately found Nevel’s stash about 2 feet down, right in the middle of the path to the privy! With Frank Perham’s help, Dean unearthed an estimated half-ton of watermelon tourmaline.
pieces, including some on matrix with albite — a lot more tourmaline and of better quality than anyone had suspected occurred at the Dunton.

In the ensuing years, the “Old Newry Mine,” had become the place in Maine to find tourmaline. So it is no surprise that New Hampshire collector Richard “Robbie” Robinson traveled there to collect with his family in 1966. They started digging in a spot that seemed vuggy and eventually found a tube that tapered down a couple of feet. Robbie dug the tube until he could no longer get his arm through the hole, then enlisted his daughter’s help. Her thinner arm got into the hole, and she started bringing up pieces of albite, quartz, and even a small piece of green tourmaline. Hoping there was a pocket at the end of the tube, the family applied a little Yankee ingenuity. They went to Puiia Hardware in Rumford and bought a plastic baseball bat. Robinson cut a whistle notch into the end of the bat, stuck it in the tube, and pressing and twisting began retrieving minerals, mainly cleavelandite, but he also recovered a 5-centimeter-long, deep green tourmaline crystal.

As the property was under the control of owner International Paper, Robbie went to the company’s Rumford office to ask permission to blast and excavate the pocket. The company’s land forester granted permission with a simple handwritten note: “I certify that Robbie Robinson of Canterbury, New Hampshire, has the right and access to the Newry Mine for three days to remove a pocket” (Frank Perham, personal communication).

Having secured permission, Robbie called Frank Perham to handle the drilling and blasting. Frank drilled four holes around the spot, loaded it lightly, and popped out the pocket. The 3-foot-wide pocket was shaped like a flying saucer that was tipped on its side. It had a domed top and an almost flat bottom. They removed the pocket material in 5-gallon pails, recovering four or five pails full, including about 20 to 25 pounds of green tourmaline crystals — the best Dunton tourmaline pocket found in more than 25 years.

After the pocket had been cleaned, Frank drilled a 4-foot hole through its bottom and encountering no additional voids, felt pretty confident that there was nothing else down there. Several years later, Frank wished he had drilled a 5-foot hole.

PLUMBAGO MINING CORPORATION

Late in the summer of 1971, mineral collectors Dale Sweat, George Hartman, and James Young were digging in the dumps at the Dunton. Finding pieces of tourmaline in matrix in the area where Nevel had been working in the 1930s, they dug down more than 10 feet into the dump material, cribbing and reinforcing the walls of their hole with trees cut from the surrounding area in hopes of finding a pocket. And they hit one! It contained a lot of tourmaline, big crystals but quite corroded. The material was quite pretty, ranging from pink to green, but was frozen in matrix.

The trio spent about three days and nights taking turns guarding their find and trying to recover more material. Ultimately deciding that they needed help, they turned to Dean McCrillis, who owned Yankee Gems in Roxbury, Maine. Dean advised them to form a corporation and get the requisite permission to mine the Dunton for tourmaline.

The team was in a bit of a bind, as while they had permission to dig on the dumps, they were not allowed to excavate; Hartman, Sweat, and Young divvied up the material they had found by that point and covered up the pocket, leaving what remained in it until they had a deal with International Paper. And they made arrangements with Priscilla Mae (Stearns) Bryant Chavarie to carry material from the pocket in her mineral shop in Winthrop, Maine.

Young, who was a college student, was not in a position to engage in a long-term mining venture, so he backed out of the enterprise, while Sweat and Hartman invited McCrillis on as a partner. Together they formed the Plumbago Mining Corporation and proceeded with getting the necessary permission to mine the pegmatite. In the meantime, McCrillis
contacted Frank Perham to do the blasting and assist with excavation. Dean had offered Frank partnership in the venture, but thinking the job would only last a few days, Frank asked to be paid “in cold hard cash.”

It took nearly a full year before Plumbago had its corporate structure and permissions in place, and in October 1972, the crew headed up Plumbago Mountain to begin mining. Their first order of business was to excavate the pocket, dubbed “Priscilla,” that had prompted their obtaining the mining lease in the first place. Frank blew away the ledge above the pocket and cleared the dump material out of the way. But once they reached it, they realized that someone had gotten into the pocket over the previous year and had cleaned out the bulk of what they had left. They did find a few additional basketball-size vugs near the first one, and while they contained tourmaline, the quality, in general, was not as good.

While Sweatt, Hartman, and McCrillis were occupied with the Priscilla pocket, Frank went around the corner to try drilling closer to where the 1966 Robinson pocket had been. The pegmatite in that area looked promising, with spodumene, muscovite, and swaths of cleavelandite along with an abundance of opaque, blue to green to watermelon tourmaline frozen in matrix.

Frank began drilling 30 to 40 feet from the Priscilla pocket and about 20 feet west of the Robinson pocket. In this spot, the schist country rock was in contact with the pegmatite. The first blast uncovered a basketball-size pocket that contained almost 100 thumb-size and smaller tourmaline crystals. All of the crystals had pink centers with green on the outside — watermelon tourmaline!

Encouraged, Frank decided to extend the bench. His next blast uncovered another pocket. The explosion had lifted the roof a little bit; so Frank took the front-end loader and carefully sticking the teeth of the bucket into the rock, pulled a piece from the top that released the front of the pocket, which fell away as if he had “opened an oven door” to expose a bushel-basket-size pocket that contained about 500 watermelon tourmaline crystals. Things were getting interesting!

Frank got back to drilling. He got about 3 feet down with a 4-foot steel, when all of a sudden, “Kachunch! The drill fell right to its collar — another pocket!” To ensure that the pocket didn’t get destroyed, the drill was set 2 feet over, but the drill dropped a second and then a third time. Frank moved the drill a good 6 feet away, put in three holes and set off a small shot. The blast loosened the top off of the pocket, and using the bucket loader, Frank peeled the cap off of an almost round, 6-foot pocket.

At first the pocket didn’t appear to be lined with crystals; in fact, it looked black inside. Frank described it as “looking into a cesspool.” As the group began removing the pocket contents, however, they found that the black sludgy pocket-filling was manganese mud, and the crystals that they had initially thought were schorl turned out to be mud-coated watermelon tourmaline. With a little rubbing or rinsing the mud came right off and exposed unetched, lustrous crystals with crackled green rinds and beautiful grapey-raspberry-pink rubellite centers. Within a few weeks of wrapping up the lease paperwork, Plumbago had uncovered a 6-foot pocket full of watermelon tourmaline!
Top: Frank Perham hands mud-covered crystals from the floor of the Mn Pocket to the eager hands of George Hartman (left), Dale Sweatt (orange hat) and Dean McCrillis (right). Jane C. Perham photo.

Middle left: Frank and the partners recovering tourmaline from the floor of the Mn pocket. McCrillis Family photo.

Center: George Hartman hands a crystal out of the Mn Pocket. Jane C. Perham photo.

Middle right: The mine site during excavation of the Priscilla Pocket. McCrillis Family photo.

Bottom left: Priscilla Chavarie holding 3 tourmaline sections from the Mn Pocket. Dale Sweatt photo.

Bottom right: Creating the opening to mine under the Big Pocket. McCrillis Family photo.
It took several long days to clean out the “Manganese Pocket,” which ultimately produced nearly a half of a ton of tourmaline, most of which were on the floor of the pocket. Collector John Marshall, who bought Hartman out at the end of the 1972 season, asked Frank to blow out the tourmaline that was still attached to the wall of the pocket. That effort produced four or five nice matrix specimens, which are quite rare. But much of what they recovered was crystal sections 6 to 10 centimeters in diameter, and the occasional green pyramidal termination. Several crystals were reassembled as they were brought out of the pocket, but most were sold as fragments.

Dean McCrillis’s then 16-year-old son Phil well remembers the Manganese pocket. Phil recalls:

... being lowered down into the pocket by my ankles, holding my breath because of the stench, and hauling out crystals one by one. We ended up burning our clothing from that particular time mining because the smell and black stain remained no matter how many times the clothes were washed.

The logistics of how to safeguard the material they were collecting and how to get it off the mountain was a problem that would only intensify as mining continued. Frank Perham owned the land and the road up to the entrance to the locality. Dale Sweett brought an old school bus up to the Twin Tunnels to serve as sleeping quarters for the miners.

The rough dirt road from the Twin Tunnels up to the mine was accessible by 4-wheel-drive vehicles, and Frank and Dean each had trucks that could make the trek. These could be parked by the compressor which was 25 vertical feet above the pocket area. To get them off the mountain, specimens had to be lugged around the ledge, across a little swamp to the vehicles, then driven down to the Twin Tunnels and out from there. The tourmaline was wrapped and put in boxes, and loose material was placed in burlap bags. The partners rented vault space at the Casco Bank Building in Rumford, and many of the bags of cleavelandite went to McCrillis’s garage.

Much to the consternation of all involved, throughout the recovery effort, the pocket kept filling with water. Their high-tech solution was to bail the water into a plastic trash bin, then carry it to the end of the dump and empty it. After several days collecting and bailing, Dale asked Frank where he thought the water was coming from. “Well, we’re either draining the swamp above us or the water is from the biggest pocket that you ever saw!” Frank facetiously answered, but in retrospect, the water was probably coming from the surface, moving along fractures and accumulating in the pocket.

As they continued to enlarge and empty the pocket, the crystals became smaller. The pocket had started to pinch down a little bit, but instead of stopping as they had expected, they found a block of lepidolite in the back that was acting as a sort of safe door, protecting the opening to the pocket behind it.

**THE BIG POCKET**

Using hardwood dowels, Frank started to try to get under the block, ultimately reaching in far enough with his hand to pull out an incentive to continue mining, even into the pending Maine winter: a broken piece of tourmaline about the size of a coffee cup with a green rind and a gemmy raspberry center.

The next morning the crew was up early, ate some breakfast, and then climbed the quarter mile from their accommodations to the mine. The lepidolite block was about 4-by-2 feet and a foot thick, but they didn’t want to blast until they knew what was on the other side. So Frank drilled horizontally into the block to provide access to the new pocket. Through that small opening, they recovered beer-can size tourmaline crystals out of the great pocket.

The pocket floor was about 2 feet higher than that of the Manganese pocket. This pocket — the largest excavated by Plumbago — was 27 feet long, 6 feet high, and 6 feet wide.

Frank paints a vivid image of this remarkable vug:

It was pristinely clean, clean as the driven snow and dry! All of the larger tourmaline crystals were jumbled and concentrated in the bottom of the pocket area, interbedded with snow-white cleavelandite. The cleavelandite texture was reminiscent of salt stored in the municipal shed. They put salt in the shed during the summer, and it kind of congeals into a mass, but you can just take your hand and rake down the mass, and it will all break up. Well, it was the same with the cleavelandite. The cleavelandite was broken into small pieces, and the tourmaline pieces were in with the cleavelandite. They were not attached to the roof or sides of the pocket. There were no quartz crystals or any crystals hanging down from the roof. The wall rock was non-mineralized, but was smooth. It was as if when the pocket formed, it was a latticework of cleavelandite, and the tourmaline crystals were growing in this latticework. The crystals were not intergrown with one another; they were all separate, and there were no clusters.
At some point, the tourmaline crystals grew large enough and there were so many of them, that this latticework of cleavelandite started to break apart, and the crystals just went down in the mush as everything started to collapse. The tourmaline crystals broke, and they settled into this soft bed of cleavelandite. Most of the bigger crystals were on the bottom, they got generally smaller as you went to the top of the pocket. If you were mining the wall rock from the other side of the pocket, you would never have known that this pocket was there.

The Big Pocket material was recovered methodically and in stages. The pocket was filled with material up to within about 6 inches of the roof. The larger crystals were concentrated in the bottom third of the 6-foot pocket. Frank estimates that 70 to 85 percent of the crystals in the pocket were watermelon tourmaline; the balance were pieces of brecciated cleavelandite. In order to efficiently recover the crystals, Frank worked the pocket from the top down and a meter or so back at a time. Frank further recalls:

We only had to have one light in the pocket, because the light reflected off everything. The walls were white, the bench was white interspersed with pink and green tourmaline, and even though the top few feet of the pocket were predominantly white cleavelandite, there were enough thumb-size or larger tourmaline crystals in situ, that all the pocket material had to be sorted carefully.

Dean McCrillis spent a lot of time handling administrative duties in Rumford, but when he came to the mine, he dug in the pocket with Frank. Dale Sweatt was claustrophobic and
didn’t like being in the pocket for any length of time; so Frank wound up mining the bulk of the crystals.

To speed removal of tourmaline and cleavelandite away from the working face, Frank attached a rope to his son’s little red wagon, which they ran up and down a 12-foot ramp. Frank would load the wagon with 40 to 50 pounds of pocket material. He’d say “pull,” and someone outside would pull the wagon down the ramp, and sooner or later it would reappear at the working face ready for a new load. Using their homemade rig, Frank and the Plumbago partners emptied the two tons of watermelon tourmaline from the 27-foot-long Big Pocket.

The largest crystal the pocket yielded was the “Jolly Green Giant,” a 28-centimeter-tall (11 inch), terminated, watermelon tourmaline, which is now in the National Museum of Natural History collection at the Smithsonian Institution in Washington, D.C. The Plumbago partners and a number of others were all on hand to witness the historic find. Frank and Dean recovered three additional sections of that famous crystal all on the same day. Frank later reminisced:

“This experience was the thing that storybooks are made of. … Here I am in this pocket, having the absolute best time of my life, and I’m getting paid for it, you know. I’d have to pinch myself nights you know, and say, ‘Are you really here Frank, or is this a big dream?’

While this account is taken from Frank’s inside of the pocket perspective, there was a lot of activity outside of the pocket as well. A number of Plumbago friends and family put in time at the mine wrapping the bigger crystals and putting them into bags and boxes. A screen was set up, and people sorted through the brecciated cleavelandite, picking out pieces of tourmaline. It quickly became obvious that the sheer volume of material coming out of the mine prevented the miners from screening everything for the gemmy pieces. Ultimately, Dean decided that if the gemmy crystals were less than 5 centimeters in diameter. They would be bagged for later sorting. The best material was loaded into McCrillis’s Land Rover, and he put them into the vault at Casco Bank in Rumford.

Initially, Frank had hoped that they could reassemble some of the broken crystals, but unfortunately the quantity of material and the speed at which they had to get it all out of the pocket and down the mountain before winter set in prevented them from doing much piecing together of crystals on site. There were a few crystals initially assembled outside the pocket, and several were photographed. Several of the crystals would have exceeded 60 centimeters in length had they remained intact. It was into November and cold before the pocket was finally cleaned out and they were able to shut down the mine until the following spring.
That winter Frank worked for Plumbago at the Casco Bank Building in Rumford. He said he felt like a gnome working in the basement vault grading tourmaline. He used a hydraulic snapper to break beer-can size tourmaline crystals into 5-centimeter pieces, then checked them with a Tensor light for gem material. He'd snap up maybe 200 pounds of gem stock, package it up, and the partners would send it out for cutting.

Collectors purchased some of the terminated crystals, preserving them as specimens. Suites of material went to several museums including the Smithsonian and the Mineralogical and Geological Museum at Harvard University. Plumbago had many crystals cut into slices. They also commissioned Gerhard Becker to carve a suite of miniatures in tourmaline. More recently, the Maine Mineral and Gem Museum obtained several lots of Dunton gem rough, and from this, they cut numerous gemstones and commissioned the "Newry Necklace," comprised entirely of cut stones from the Dunton find. The value of the tourmaline produced from the Manganese and Big pockets is estimated to be some 50 million in today's dollars!

Above: Rubellite bears on quartz, the largest is 6 cm long. Plumbago Mining Corporation commissioned Gerhard Becker to create a series of carvings from material from the mine. The overall piece is 16.8 cm wide. Maine State Museum collection, Jeff Scovil photo.

Left: The countertops at the Plumbago office were covered with tourmaline after the 1972 find. John Marshall photo.
Right: The “Newry Necklace” is made entirely of tourmaline from the Dunton Mine. The center rubellite weighs 40.82 carats. Maine Mineral and Gem Museum collection, Jeff Scovil photo.

Lower left: Elbaite, 7.7 cm tall. Dunton Mine, Newry, Oxford County, Maine. Maine State Museum collection, Jeff Scovil photo.

The winter brought change to the Plumbago organization as George Hartman bowed out and collector John Marshall took his place. The partners’ plan for the 1973 mining season was to tunnel into an area about 15 feet below the Big Pocket. To implement their plan, the silver school bus had to be moved and they had to clear the dumps to the west. Next, they built the “Backdoor” access road, which had to be large enough to accommodate the excavator.

Explosives were used to make a 15-foot cut into the hillside where the Big Pocket had been. The blast collapsed the sides and part of the roof of the cut and exposed the remnants of the 1966 flying saucer-shaped Robinson pocket, now partially filled with leaves. The 4-foot-long hole that Frank had drilled into that early pocket was visible and had stopped 18 or so inches above the top of the Big Pocket! Had Frank drilled a 6-foot exploratory hole instead of a 4-foot one, the history of the Dunton Big Pocket would have been entirely different.

Blasting revealed that the Big Pocket pinched down and went into a seam that went up. They chased this mineralized seam to the south to where it came out at the surface of the hill. The seam contained dribs and drabs of small pockets that might have had three or four tourmaline crystals that were up to about 6.5 centimeters in diameter.

At one point, Frank reached up into a pocket that contained some cleavelandite and he could feel a tourmaline crystal in it. He grabbed the crystal and handed it back without looking at it to Rene Dagenais, who was helping at the mine. Rene put it into his pocket, and Frank later found out that he had brought it back to the Plumbago office and purchased the unique specimen for $800. It had no green rind and was the only pure rubellite crystal found by Plumbago. Bob Whitmore, who referred to it as the “Red Bar,” later purchased the specimen from Dagenais. This unique tourmaline crystal is now part of the collection at the Maine Mineral and Gem Museum.

The last significant find by Plumbago Mining was in 1974 with the discovery of the Pillar Pocket which contained green tourmaline crystals with peach centers, but no rubellite was found. Plumbago held the lease until 1977, and many collectors from New England and across the country enjoyed collecting in the mine while it was in Plumbago’s control.

Subsequent lessees have included Joseph “Joey” Martin (1985–1989) and American Tourmaline Fields (1989–1996), Plumbago Timber and Quarries LLC purchased the Dunton in 2004. But no one has as yet found anything rivaling the quantity or quality of gem tourmaline produced in the 1970s by Plumbago Mining Corporation.

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