

Cranston Print Works

Through shifts in industry and demographics, this New England historical site has united a community for over 200 years.

COMMUNITY SCIENCE FORUM

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INTRODUCTION

Like many suburban cities throughout the nation, the city of Cranston is becoming increasingly diverse. As residents, it's our responsibility to help build a future where all of our neighbors are welcomed as equal players. That's why we're working on community engagement projects to create an economy that serves everybody. That means looking at our history and the people that lived and worked here in the past, investigating the present dynamics, and looking to our diverse communities, and their opportunities and hardships.

More than a hundred years ago, Cranston was a mecca for employment for the whole state of Rhode Island. The area was home to countless industrial sites including Cranston Print Works, a massive textile printing facility that opened in 1807. The plant employed hundreds of people and was a site of incredible social cohesion; the people in the community shared celebrations and festivals, schools, churches, a grocery store, and a popular restaurant. They all helped each other out because they all lived and worked in the same place.

Now that we are a post-industrial city, we still have that sense of being close-knit. However, we've gotten larger population-wise and we've changed demographic-wise. With these changing dynamics, how do we keep that sense of belonging? We've addressed this in the past — nothing needs to be reinvented — but we have to work in a 21st century mindset to create a sense of belonging for everyone that joins this close-knit community.

This issue of the Community Science Forum is a picture painted from the history of Cranston, seen through the lens of one site: the Cranston Print Works. At one point it employed a majority of the city and was a bustling hub of industry. After some 200 years of operation, it faced the fate of so many industrial sites in the area, struggling to stay afloat as manufacturing jobs left the area for more

modern means of production. The site was ultimately shuttered in 2009. In the following years, a community has come together to help preserve the legacy of the storied site.

Through my work with OneCranston, a cross-sector collective impact table, we're building partnerships for community engagement. Working with Public Lab, we've held events with middle school students from the 21st Century Community Learning Center, doing aerial mapping and water testing at the Cranston Print Works site. At a later event, we did kite flying with adults, many of whom shared their memories about visiting the store on the site, working at the plant, and the generations of families who worked there. And through a partnership with Brown University, we're interested in connecting the work we've done here with the industrial history of the area, which is one of their topics of study. The historical databases and maps they are collecting, and which you'll read about in this issue, form a powerful part of this story.

We've sparked people's curiosities about how to be inclusive, and how to focus that inclusivity around the very diverse community that now lives here. We're working together on issues of equity, opportunity, and education, taking bits and pieces from the local history. By sharing, socializing, connecting, and building relationships around our history, we're working together to make sure there is opportunity for all as we form a vision for the future of Cranston.

Ayana Crichton is the Initiative Director for OneCranston housed at the Cranston Community Action Program and an initiative of the Working Cities Challenge through the Federal Reserve Bank of Boston, and is an Afterschool Alliance Ambassador for Rhode Island.

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HOW A LEADER AND A COMMUNITY SAVED THE SPRAGUE MANSION

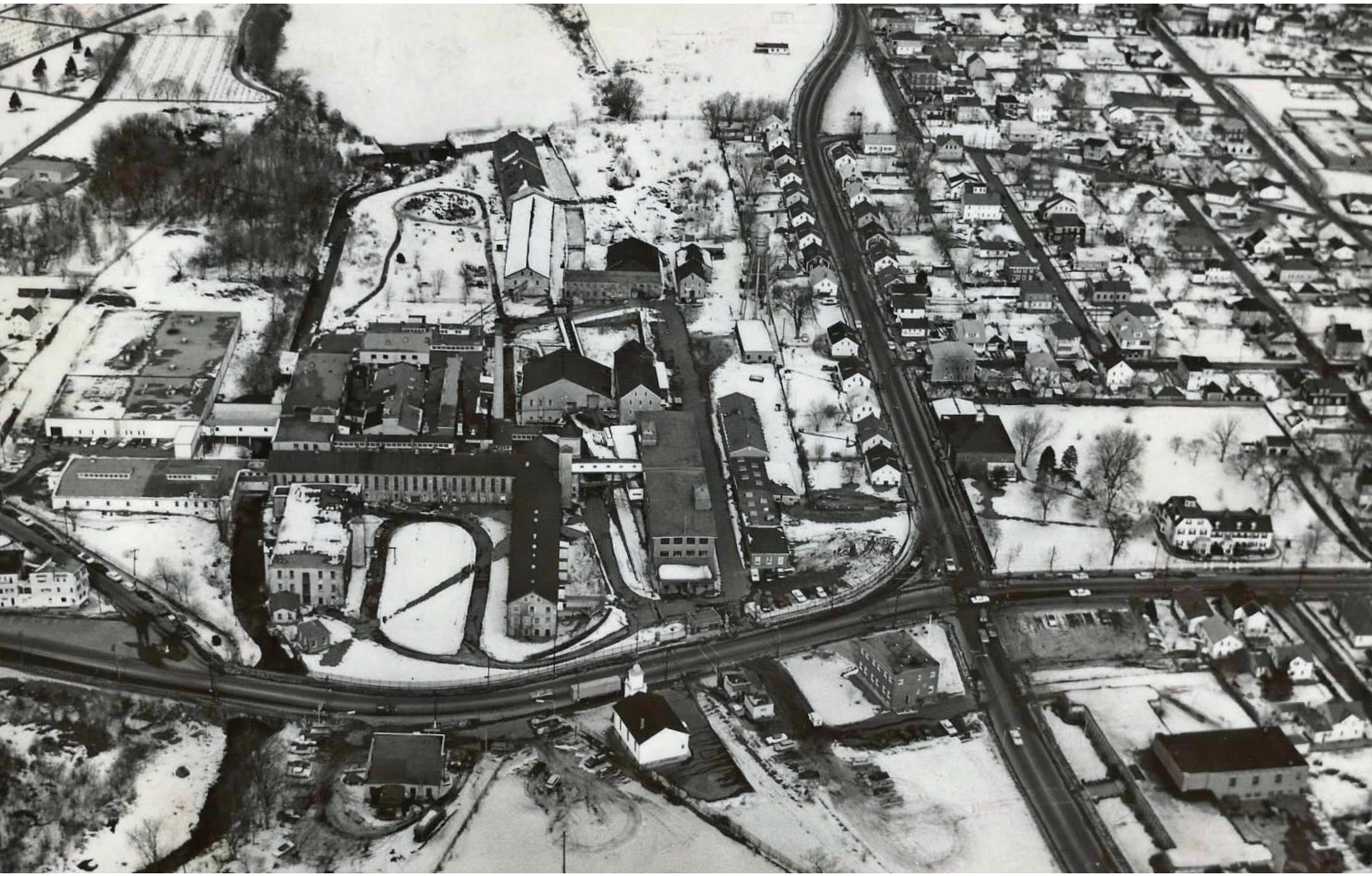
Sprague Mansion was a historic site — it had been the home of two Rhode Island governors and U.S. senators, as well as the family that in the mid 1800s owned the largest textile empire in the county. But by 1966, it was slated to be knocked down. The nearby Cranston Print Works, which had used the mansion as the home of a succession of their general managers, decided to sell it and allow its demolition. Plans for a senior citizen high-rise or a surface-level parking lot seemed to be in the future for the property at 1351 Cranston Street, sandwiched between the Arlington and Knightsville sections of the city.

When word of this reached the Cranston Historical Society, a movement began to save this 2 1/2 story, 28-room house, built in 1790 and significantly enlarged in 1864. The historical society had been formed in 1949, and ten years later they had acquired their first property, the Joy Homestead. Buying another historic property seemed to be out of the reach of this small group of history lovers, but they couldn't let this significant part of the city's history disappear.

A determined group of members, led by Virginia Lynch, was galvanized into action. She was instrumental in publicizing the historical value of the house and raising the money to purchase it. To augment the members of the society, she recruited a group of prominent Cranstonians to join the Board of Managers. Each was chosen for their expertise in an area that would help in the effort to save the mansion and turn it into the historical society's new headquarters. A banker, an insurance broker, a nursery owner, and a lawyer were among the people who signed on to this project.

Now the drive to raise the money swung into action. At the time, the president of the Cranston Historical Society was Zenas Kevorkian, a high school history teacher. His students were studying U.S. history and had been learning about the Southern plantations prior to the Civil War. He taught them that the Spragues had also owned an almost-self-sustaining community that had relied on local farmhands and immigrant workers to work in their textile mill instead of enslaved people.

Unlike the plantations, these workers came willingly to work in the sprawling A&W Sprague Print Works and appreciated the surrounding community, known as Spragueville, that was established to meet their needs.



THE SOCIO-ECOLOGICAL CITY PROJECT

OneCranston is collecting stories and reflections by the Cranston community about the history of the area, from memories of the Cranston Print Works site to old family photographs. At the same time, researchers with the Socio-Ecological City Project have collected a database of past and present industrial sites in Rhode Island, and are looking for community observations and stories related to these sites. With these goals in mind, we'll be working together to create an interactive online map where you can share your stories. Visit PublicLab.org/rimap to learn more.

The Socio-Ecological City Project (SECP) is an intensive data collection effort focused on assembling a comprehensive longitudinal geospatial dataset to better understand the changing relationships between people, industrial hazards, and nature. Focused on socio-environmental change in the city of Providence, Rhode Island, area over the past century, the SECP has compiled information on every manufacturing facility operating in the state since 1953. We have also collected information on all parks, playgrounds, cemeteries, and schools that have existed in Providence since 1953. Currently, we are compiling additional geospatial data that inventories hazardous retail sites such as gas stations, dry cleaners, and auto repair shops. When complete, the data and related visual and

The Sprague family provided a boarding house for unmarried workers and a series of duplex mill houses to accommodate workers with families. They built a school and a church. A large brick store was erected across the street that extended credit to workers and then deducted the debt directly from their monthly salary. The Spragues owned a trolley line that the community used to get to Providence. They even had a train that took people to points beyond the area, as well as carried raw materials into the factory and brought the finished cloth to market.

Kevorkian's students made models of the Sprague Mansion out of sugar cubes, which were put in local stores and banks to spur fundraising. Donations began to pour in — anything from pennies from school children to substantial amounts from businesses and local residents. Finally, with the assistance of a mortgage from a local bank, Mrs. Lynch and the members were able to purchase the Sprague Mansion from the Cranston Print Works for \$100,000.

Now the task evolved into turning the empty house into an attractive venue to attract people to both tour the home to learn about the Spragues and also rent it for their own events. The historical society wanted it to become a focal point for the community that had helped to save it. Antique furnishings that fit with the Victorian era, when Spragueville was in its heyday, were donated, and other furniture was borrowed from the Rhode Island Historical Society. Tour guides were trained in its history and a resident couple was found to oversee its day-to-day functioning.

Today, the building is as lively as ever. Many community members have used the space to host weddings, parties, and other social events. The Cranston Historical Society has their meetings there, as well as events of their own that range from a formal Harvest Ball to antique car shows and craft fairs. More recently, the historical society has hosted Victorian Teas and Halloween parties, with each event raising money for the upkeep of the historic building as well as enhancing its exposure to the public.

Sandra Moyer has served as President of the Cranston Historical Society since 2011. She is the co-author of two books on Cranston's history: Cranston Revisited and the soon-to-be-published Cranston Through Time.

A WINTRY KITE MAPPING AT CRANSTON PRINT WORKS



the person handling the camera to the folks managing the string. This is especially true when pulling the kite down!

At the Cranston Print Works site, we started near the parking lots, and worked our way north to the reservoir, then down to the "back yard" just behind the mill buildings, crossing the canal near the dam. It was cold, but we had gloves, and moving around helped us all stay warm. It was a great opportunity for folks to get to know each other and to talk about the history of the site.

One of my favorite things about kite mapping is that you are connected directly to the kite, and to the camera, by a string; it makes you feel like you're almost up there yourself, looking down at yourself. With our new cameras, you can actually do this literally as well: the camera makes a WiFi network and people can log in and stream video from it while it's in the air. Seeing yourself from an aerial perspective is really unique, and is another way this type of photography is different from, say, satellite photos, which seem so anonymous and disembodied.

Once you get a ton of photos (the camera is snapping one every couple seconds), a good way to make a group activity is to share the photos among a large group (which can take some planning if it's all just on one SD card) and team up to find the best photos. That means both the clearest, sharpest images, but also those covering a wide area of the site you want to map. In this case, as is typical, the photos near the edges of the site were a bit blurrier, but it was worth it to include them to get a really wide area mapped.

Using the free and open source MapKnitter.org website, we then uploaded the images one by one, fitting them together like a jigsaw puzzle, stretching them to match the default Google map layer for reference. This can take a while, but the results can be spectacular, and it's great to see a different view than the one Google offers: one that highlights not only the current state of the place you're mapping, but often a specific time of day, an ephemeral moment like a festival, or a disaster like a flooded street.



COQUI WATER TESTING

In the spring of 2019, I worked with Ayana Crichton, Clara Sears, and folks from the One Cranston project and their community partners for a third event at the Cranston Print Works site, using Public Lab's Coqui water conductivity sensor — a sensor that generates an audible tone when you dip it into water. We were interested in using a Coqui with a group of kids, and with real water samples we pulled from the Pocasset River that runs through the property. Though the Coqui by itself can't produce a numeric reading of conductivity, the pitch of the sound it makes goes up if the liquid it's dipped into is more conductive — so it can be used to compare conductivity among samples.

We started by pulling some samples from the river using small glass bottles tied to some four-foot rods we had on hand, so kids could dip them in safely without leaning over the water. We provided gloves so they didn't have to touch the water itself.

Then, we went back and showed how the Coqui makes a higher-pitched sound in some prepared samples we'd brought: salty and coffee-filled water. We first wanted to show that the color of the water doesn't necessarily correspond to conductivity; salty water, or water with a drop of fertilizer, for example, is perfectly clear, but much more conductive than the brown water with coffee grounds in it:

Normally, the Coqui is really quiet, and outdoors there's no chance that a big group of kids could hear it. So we attached an audio cable and plugged it into an amplifier — a small USB-powered speaker for smartphones. This new version, the Mega Coqui, was plenty loud!

Once the students got an idea of how the Coqui responded to different samples — we brought a few Coquis, so they could play with them individually too — we got out the samples they had collected from the river. Unfortunately, it was really cold that day, so it was a bit tough to do this part. We worked to mark each sample on a printed-out map, with some notes on the site written on the back. We put stickers on each bottle and numbered them, and added the date and time. This workshop process seemed to work pretty well, and we look forward to doing more community events with youth in the future!

The Coqui and Mega Coqui are available in the Public Lab store at bit.ly/PLcoqui.

Learn more about current work and activities with the Coqui at PublicLab.org/coqui

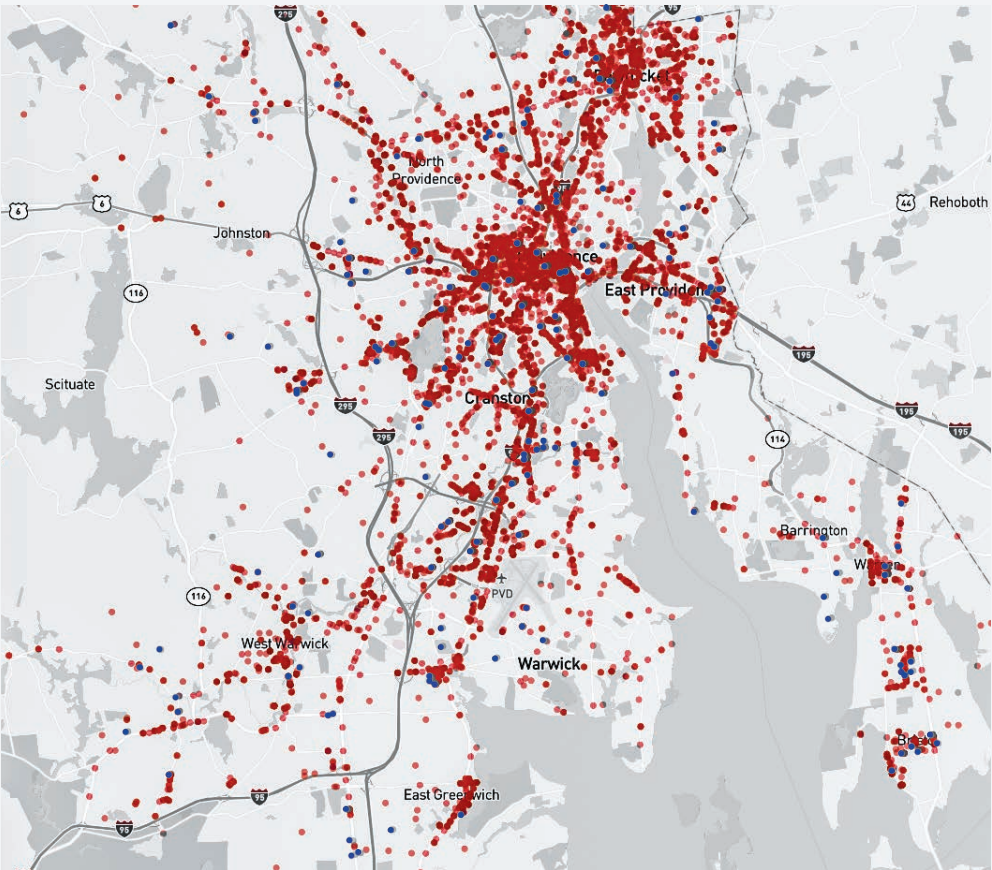


Jeffrey Yoo Warren is the creator of GrassrootsMapping.org and co-founder and Research Director for Public Lab. He lives and works in Providence, RI and has made balloon and kite maps with communities around the world.

YEAR: 2016

By the 1990s, manufacturing facilities and manufacturing employment is in steep decline across the state. And with this more profound exodus, former manufacturing sites — many of them abandoned — accumulate throughout Rhode Island. In Providence, redevelopment of the downtown area brings more disruptive change, as railroads are cleared and the I-195/I-95 interchange is moved south to more room for new commercial development. At the same time, in-migration of newly arrived Honduran, Guatemalan, and other Hispanic groups into large parts of South Providence channels this growing ethnic minority population into the very neighborhoods most impacted by the previous decade's deindustrialization and characterized by intensive accumulation of relic manufacturing sites.

- 780 Active
- 14757 No longer active



IMMIGRATION IN CRANSTON

By Ayana Crichton

Cranston, Rhode Island's immigration story isn't unique. Our history follows national trends in the 19th century: European migrants, many from Ireland and Italy, coming to America and finding employment in American mills and textile manufacturing companies. Immigration is an American story that is still being written, with patterns of migration changing in every chapter.

Over the past 50 years in Cranston, we've seen the growth of immigrant populations from Cambodia and the Dominican Republic, and the 2017 census tract report shows that both populations are still growing locally. As we look at where migrant groups find work, we find that many in our Cambodian community have found employment in hands-on work including textiles and other manufacturing jobs, in leadership roles at the non-profit level, and in our schools. However, according to Cambodian community leaders, a lack of opportunity and an overall lack of feeling welcomed by the city have contributed to recent rises in gang violence.

The vibrant and energetic Cambodian community has been migrating to Cranston (and all of New England) for five decades. The first wave of people from Cambodia coming to America was refugees who escaped a dangerous government system that was killing hundreds of thousands in their home country — many people were scarred by memories of unspeakable horrors.

As Cambodians have made their homes in the area, many have found employment locally, but have had limited access to career ladders — a story that has changed very little over the past five decades. The community is

marginalized when it comes to equitable educational opportunities, and it isn't consulted appropriately on city-backed initiatives to address gang violence. The community lacks safe spaces to gather and organize, and often doesn't have the means or is barred from creating a space for themselves. Further, leaders in the Cambodian community are often excluded from meetings of the larger Cranston community. Through outreach and partnerships, we're hoping to build greater Cambodian representation at events, forging relationships to develop safe spaces for a more organized leadership in the community, to advocate for equitable work opportunities (including professional development and advancement opportunities) and equal access to culturally appropriate education.

Recently, the Cranston Public Library held a celebration of Southeast Asian culture, in which monks from three Buddhist temples blessed the building. The library also unveiled a new collection of bilingual books and introduced new resources for community members: meeting spaces, educational programming, and technology classes. A move in the right direction. However, there are still many questions left to answer. How will the city address the Cambodian community as a whole and continue to use institutions like the library as examples of appropriate ways of working together? How will Cranston, as a whole, work more cohesively to address equitable education, career ladder opportunities, workforce development, and fair livable wages for migrant communities? At OneCranston, we're working on addressing these questions through a collaborative leadership table that shares power to increase upward socioeconomic mobility for all Cranston residents. As our future is written, we're working to make sure all of neighbors can be the authors.



MEMORIES WITH MOLLY

By Ayana Crichton

Molly and her mom eagerly got into their green Volkswagen and pulled out of the driveway for another adventure. These moments were like a deep breath in and out, getting away for just a short while from the reality at home. Molly watched as the house slowly disappeared. Her mom's face brightened as she asked, "Where will it be today, Molly?" She had been working on sewing a skirt, which her mother knew, but it was tradition for her to ask, even if she knew the answer. "Cranston Print Works!" Molly said, excitedly. It was a place that promoted healing, where they could do something together and take a break from crying.

Tears formed immediately when Molly learned of her brother's death, but the pain of losing a sibling grows as the days go on; they are missing in every action you take for granted — Sunday outings, holidays and birthdays, dinners, new memories. As time goes on, wishing they were there for important moments can become overwhelming. Yet Molly and her mother found a way to escape, if only for a little while, from those heavy emotions that weighed on their minds. Going to Cranston Print Works to buy fabric was a time to leave the sadness for a little while.

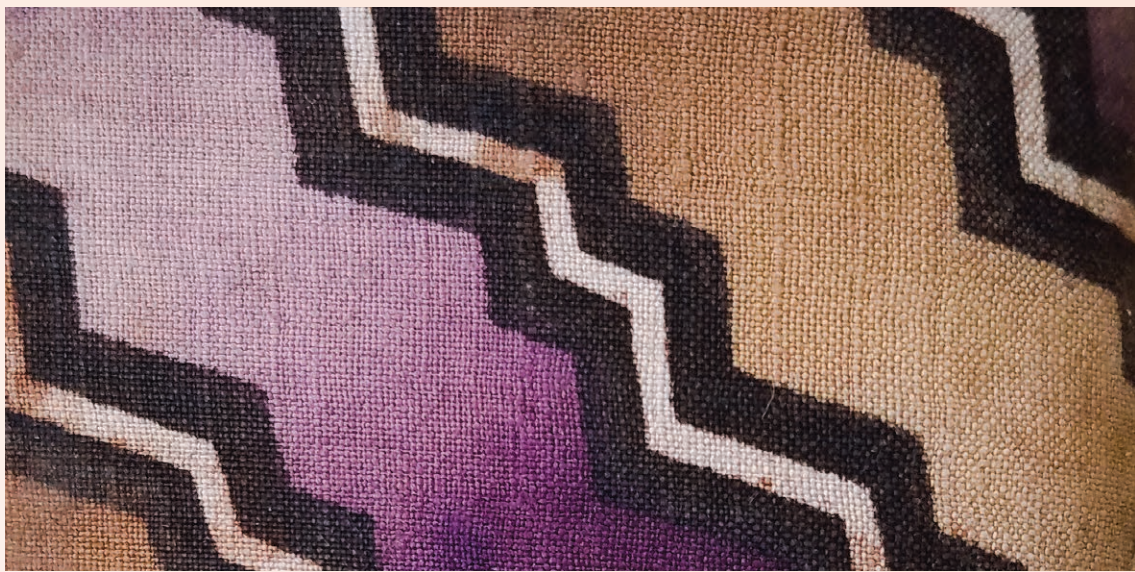
The fabric room was larger than life to Molly. So was losing a brother. But unlike some of her friends and neighbors, Molly didn't lose her brother to the Vietnam War. His time in the Navy was well spent — a loyal soldier who went to the naval academy and was proud to serve his country. Molly remembers worrying about the war. But in her special way, Molly's mother would say, "Worrying doesn't work." She encouraged praying instead because she believed that faith was the only way to change outcomes. It was that same belief that made Cranston Print Works a place of healing

for Molly and her mother, where they could pore over piles of fabrics, discovering endless fascination and possibility with which to make a new skirt or shirt.

Molly skimmed through fabric meticulously, just like her mother. She searched for the telltale Cranston Print Works stamp — the sign of authenticity — and rubbed her fingers across the smooth fabric prints, picturing her new outfits and laying out plans for creating something fashion-forward. When she found the right one, she always knew right away. She grabbed a purple patterned fabric and immediately fell in love. Back at home, she sewed away, happy to know this was definitely going to be an amazing outfit. Molly loved the fabric so much that she begged her mom to take her back to Print Works to look for more so she could make a matching top. Unfortunately, when they arrived and searched, the patterned purple fabric was gone — typical for a unique and beautiful piece.

Molly's brother passed away from a drowning accident. He broke through the ice on a local pond. The loss is still felt today as Molly tears up relaying her story to me. But she breaks away for a brief moment and smiles, recalling how, just like the memories of her brother, she couldn't stop thinking about that purple patterned fabric. A few years later, Molly and her mother went off on another one of their adventures, this time to a secondhand fabric sale at St. Mary's Church, right down the street from Cranston Print Works. To Molly's surprise, she found that exact fabric during the sale! She and her mother searched the fabric like usual for the Print Works' official stamp and there it was. It was another day to escape and another day to heal, thanks to Cranston Print Works.





RECIPES FOR DYES

What goes into a dye maker's recipe? The simplest answer would appear to be various dyes, time, trial and error. This response, however, does not even begin to scratch the surface of textile dyeing. As shown in the dye recipe journals, dated 1847-1876, and left behind by Mr. Richard Crompton, the superintendent for Cranston Print Works in the 1800s. These dye recipes included complex calculations of colors, used in certain doses and added in specific orders. Additionally, chemicals such as madder, arsenic, lime, tartaric acid, and lead nitrate, among others, were added to dye recipes, each serving a specific purpose.

As the oldest textile printing company in the country, Cranston Print Works pioneered the industry in calico printing and chemical bleaching. Skilled laborers, primarily men, were used to run machinery, whereas unskilled laborers, mainly women and children, were used in the cotton mills, bleaching, and dyeing rooms. Chemical bleaching involved the use of chemicals to discolor fabrics by dulling their natural color. Substances such as chlorite, lime, soda ash, ash water, liquor, and vitriol, all referenced in the dye journals, were used in chemical bleaching—the most dangerous of these substances being vitriol, otherwise known as sulfuric acid. It is known to cause skin irritation and burns, organ damage, blindness, and even death. Women and children faced the highest risk of injury based on their jobs working in the bleaching rooms.

In the dye rooms, workers used synthetic dyes laced with substances such as madder, potassium chloride, nitrates, various acids, and heavy metals including arsenic, chlorine, tin, and lead. These substances were used to bond or “fix” color to cloth, making colors appear faded or brighter, and to decrease the rate at which the color would fade from the material.

Madder, a chemical agent used to bind color to cloth is known to cause cancer, miscarriage, and birth defects. The most commonly used nitrates, lead, iron, and copper — all used to enhance the dye process — cause a range of health ailments. This includes, abdominal pain, skin irritation, kidney and liver damage, seizures, shock, and, in severe cases, death. Sulfuric, oxalic, and tartaric acids, all present in the dyeing process, are known to cause severe skin burns, difficulty breathing if inhaled, stomach pain, vomiting, and diarrhea. Additionally, the heavy metals used in the dye process present the most severe reactions, including rashes, vomiting, abdominal cramps, headaches, severe illness, and even death.

The effects of the substances used in textile printing reach far beyond the health outcomes that the workers were subjected to. As seen in other New England factories, textile mills had negative impacts on the land and water around them. Prior to government laws and regulations, chemicals and dye byproducts were typically dumped into the water system or in pits surrounding factories. During the actual dye process, only about 80% of the dye solution would adhere and stay on the fabric. The remaining solution went into the waterways. From there, not only were Print Works employees and their families at risk from the negative effects of these chemicals, but anyone living downstream and in the watershed were also at risk.

While we are aware of some of the various chemicals, metals and acids that Cranston Print Works used in their dye processes, we are less aware of where the leftovers and waste materials went. One could easily speculate that it ended up in Print Works Pond or buried on the

Print Works' sprawling property. However, to date, no ground or water testing has been done as a large-scale effort to see what exactly is has been left behind from nearly two centuries of textile printing. The time has come to consider the next steps for the future of the Cranston Print Works property.



Above: Dye recipe reads: Steam Work, Black red on No 1.5 H, Purple black page 29, Red page 02, No 1.5 H purple take, 9 quarts barley gum, water at 20 (unsure of symbol) and 6 quarts strong F+E, purple mix well, strain and ring.

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