INTRODUCTION

Emma Vecchione One day, when Victoria Finlay was a little girl, she visited a medieval church with her family—it had just rained, quiet footsteps crackled on the wet pavement outside. And on that day, she had an epiphany of sorts…

Victoria Finlay You know that sparkle in the air after rain? It was that sparkle and we went in and I was only 8-years-old and my father took my hand.

Emma Vecchione And he pointed to this massive sapphire blue stained-glass window at the front.

Victoria Finlay And he said, “Tori, look at that.” They made that blue window 800 years ago and we don’t know how to make it like that anymore. And I thought “Oh!” There’s something to explore!” There’s a quest in a way. It’s that childhood thing, or actually adulthood thing where you think there’s something to discover and so I always had this kind of little fantasy of me being the one who discovered the secret of the colors.

Emma Vecchione Victoria is a color historian. And that might seem like a pretty particular career path to follow. But what led her to it was a very simple question that occurred to her that day in the medieval church looking at the stained-glass window: Where do colors come from?

Emma Vecchione But Victoria’s epiphany, like so many moments of clarity in our lives, was forgotten pretty quickly. For about 20 years, she was an arts journalist and then one day, she ended up in the basement of a random bookshop and she opened up an old glossary of colored pigments.

Victoria Finlay And there were just these extraordinary things. This is the one that really excited me. Indian yellow—made in India by heating the urine of cows fed on mango leaves. I mean, for goodness’ sake! I mean that is a story. In fact, I’m going to read you the emerald green. It says, the most brilliant greens, very difficult to match. I t is a bad pigment now universally rejected because it is a dangerous poison. I mean, reading that, before I did any of the research, I just thought— it struck me that there were these great stories.

Emma Vecchione Victoria went on to travel the world in search of where colors came from and she eventually wrote books and gave talks. Most of us won’t go on to become color historians like Victoria, but we’re all drawn to color. And that root question, where do colors come from, is something that anyone could wonder about. Just glancing at a book about color for a few minutes brings up so many more questions already—like what could make a color “bad”? And why did people go to such great lengths to make color? But that’s just barely scratching the surface.

Emma Vecchione Art is so much more than the finished works that end up on the walls of a museum or in the windows of a cathedral. Behind every painting and every stained-

glass window, there are stories of the people who produced colors—of those who heated the urine of cows for Indian yellow and who concocted green poisons for Emerald green.

Emma Vecchione It's easy to take for granted the labor that goes into the paints and dyes that make up an artwork. But if you look closely, these colors have great and mysterious stories to tell—stories of luxury, profit, greed, poison, and of humanity's destructive pursuit of beauty.

Emma Vecchione This is Manual, a podcast about art and it's making from the RISD Museum. My name is Emma Vecchione. I'm an independent audio producer and the host of this first episode, where I'll share four stories about the color green and dig into where green comes from, how it's changed over time, and why we're so drawn to green things.

Emma Vecchione And surprisingly enough, the best place to start to answer these questions might be right in front of us, or rather under us: grass.

CHAPTER ONE: GOOSE TURD GREEN

Emma Vecchione On an early morning, I drove 20 miles south of the RISD Museum to visit SODCO, which is one of the largest grass farms I n Rhode Island. They're not putting paint in tubes, but they're definitely making green, and a lot of it. At a place like this, with acres and acres of flat fields, you might expect to hear birds chirping, the sound of whirring lawn mowers, of sprinklers misting the air.

Emma Vecchione But in February, it sounded like this:

Pat Hogan Good morning. Be careful on the steps because we don't typically shovel it because we're not letting people come in this way.

Emma Vecchione In the dead of winter, farmland that's usually covered in lush green grass is blanketed in a thick layer of freshly fallen white snow. Maple trees tapped for syrup line the long driveway at the front and all of the tractors and mowers sit in big warehouses.

Pat Hogan You know, like I said, right now it's all white here. When we see green, it means a new season is starting for us and that also means that green is coming in and we're gonna start making money hopefully.

Emma Vecchione Pat Hogan oversees the farm year-round. It might seem like a pretty quiet existence to work here in the winter, but the thing about grass is that it's constantly changing.

Pat Hogan Typically, mid-May until the 4th of July is what we call the crazy sod season. We're basically, if the sun is shining, it's 7 days a week. You come here at 2 in the morning and there are trucks coming in and out.

Emma Vecchione In the spring and summer months, the entire farm is booming with business, and Pat works endless hours to make sure his clients get the brightest, greenest grass for their front lawns.

Pat Hogan They're renting our land for a year, because it takes us a year to grow that grass to what they want to have on their front yard.

Emma Vecchione But there's one important question at the basis of their entire business: why do people want green grass so badly?

Gina Esposito If you buy a house in suburbia, it has a lawn. In a way, it's the accessory that accentuates the house.

Emma Vecchione To get to the bottom of this question, I asked my Aunt Gina. She lives in Long Island and is a frequent sod user.

Gina Esposito We'll use it all the time because we have dogs. And I want them to have fun and be outside, but they do these laps and turn it into a track and everything gets destroyed. So the sod is a quick fix to fill in the lawn and stimulate the growth again. And it's nice. Grass is nice. I don't know. Dirt and mud are just not pretty. And there's something about green—green, health, outdoors. You're surrounding yourself with nature and like, you do kind of crave it, now that I think about it.

Emma Vecchione Green is the color of nature—of grass and trees and fields . But green isn't permanent. When winter comes around, it vanishes.

Emma Vecchione But maybe that changeability, that fleeting quality is why in the months that it is around people are willing to go to extraordinary lengths to get their hands on it—to the point of buying ready-made grass lawns for their homes. For centuries, artists and craftspeople have been trying to capture that grassy green color in nature and freeze it in time, so that people could bring it into their homes and make it last year-round.

Emma Vecchione And for a long time, the process of mimicking those rich, earthy hues was a bit peculiar

Laurie Brewer What led me to goose turd green is that I was thinking deeply about an object in the RISD Museum's collection.

Emma Vecchione Museum curator Laurie Brewer studies the materials that were used to make dye colors in the medieval Netherlands. And recently, while researching a

bright, yellowish-green furniture fabric, she was very excited to stumble upon a color known as goose turd green

Laurie Brewer You could say I'm bewitched. To clarify, you were never using goose turd per say, it wasn't a one-to-one. It was just people were looking for such exact ways of describing their relationship to nature. So that you would be using such a visceral, evocative terminology to describe the color of the textile. It's so earthy and then the materials themselves that would create the color during this time were just as earthy

Laurie Brewer In this period the only dye stuffs available are natural dye stuffs, organic dye stuffs is what they're called. So those are plants. You could use a fern, or you could use something like fox glove flowers to get green, or birch, or ash leaves. But to get a green that is really lasting, you use components to build it up.

Emma Vecchione For much of the Middle Ages, green plants were used to make green dyes. Makes sense. But in Dutch dyeing workshops, which were run by groups called guilds, dyers eventually realized that they could get colors that lasted much longer and more accurately mimicked nature if they mixed blue and yellow plant components instead—That's how colors like goose turd green came about.

Emma Vecchione But there was a problem with mixing colors to replicate nature

Laurie Brewer It was actually frowned upon. It was morally a taboo to be mixing or blending colors. If you're blending things that have born up out of nature—so a yellow and blue—that means you're controlling nature. You were falsifying nature. Witchery. You've stepped out of your place in the natural system of things. And it's very strictly regulated because the financial wealth of so many nations was based on their textile industry.

Laurie Brewer If you did that, you know there's the phrase going medieval on someone. We've all heard it in literature. There were financial repercussions. But even physical, you know dyers could lose a hand.

Emma Vecchione So capturing nature to create artworks and textiles was a really hard process with really high stakes. People could lose extremities for making colors. But by the 16th century, times were changing…

Laurie Brewer Dyers are starting to experiment and say, you know, why are we sticking to this structure? Guilds are daring to blend, to go into a yellow vat and a blue vat to build colors. So there's some pushback. People are refusing to be told what to do and rising up and using more self-direction.

Emma Vecchione As time went on, people took risks to make goose-turd green. This bright, earthy hue became so valuable, and people craved it so much, that laws started to change to accommodate it. For a green that could withstand the test of time, witchery was worth it.

CHAPTER TWO: SCHEELE'S GREEN

Emma Vecchione By the 1700's, the idea of taking risks for green was taken to new extremes, and there was a new kind of witchery afoot: science.

Emma Vecchione In 1775, a Swedish chemist named Carl Wilhelm Scheele was doing experiments with arsenic. And one day, he was in his laboratory. I imagine him hunched over his bubbling squash-shaped glass bowls, clouds of gray milky chemicals fogging his view, when suddenly, out of the corner of his eye…

Victoria Finlay This extraordinary green paint appeared.

Emma Vecchione In this moment, Carl Scheele was absolutely stunned. Discovering this perfect grassy shade of green was like stumbling on a mythical treasure. At the time in Europe, the textile industry was expanding rapidly, but no one had quite figured out how to make a cheap, chemically-made green to dye mass-produced fabrics. Plant-based dyes weren't cutting it anymore. And according to color historian Victoria Finlay, there was a real demand for this color.

Victoria Finlay There was a whole interest in the natural world. It began as the industrial revolution was getting into swing. People started moving out of the country side and into the urban areas to work in mills. So a bright, beautiful, emerald green was something very attractive.

Emma Vecchione But Carl Scheele was worried.

Victoria Finlay And he did write a couple of years later to a friend—an extraordinary letter really—saying I wonder if we should make people aware that this is potentially poisonous. But he didn't.

Emma Vecchione When Scheele eventually announced his new green color to Europe, there was an explosion of excitement about how amazing it was.

Emily Banas And it became incredibly popular for incorporating elements of the natural world into design

Emma Vecchione That's decorative arts curator Emily Banas. And because of the lack of bright green pigments on the market beforehand, within the decade, Scheele's green was truly everywhere.

Emma Vecchione It was used to paint fake flowers

Emily Banas It would have been used in textiles

Emma Vecchione It was used to color shoes

Victoria Finlay It was used in tendrils on wallpaper.

Emma Vecchione It was used to dye candle wax

Emma Vecchione Everywhere.

Emma Vecchione For people living in gray, smoggy cities, Scheele's green was the closest thing there was to nature. City dwellers would put up this bright grassy wallpaper in every room, trying to imitate as best they could the lush green countryside landscapes that they missed so much. It was as if someone had unfurled strips of sod directly on their walls.

Emily Banas I know that children's toys were painted in these same green pigments, which was especially problematic when it came to poisonings.

Emma Vecchione Emily has been researching arsenic wallpaper for over a year now.

Emily Banas To set the scene, when arsenic wallpaper was first being used, people were very used to seeing arsenic and using it in the home for many different purposes. It was readily accessible to buy. It was used in agriculture. It was used in medicine. So the idea that it could be harmful. It took a long time for that to be instilled in people, that actually, in these quantities, it could be really dangerous.

Emma Vecchione And so, for a long time, the philosophy around Scheele's green was, as long as you didn't lick it, you would be fine.

Emma Vecchione But problems started to arise…

Victoria Finlay In 1880, a man called Henry Carr gave a talk to the Royal Society in London, and he announced that one of his young relatives—a boy—after being in a room where his wallpaper, which I think was boys playing cricket on a country scene, had been killed.

Victoria Finlay Another example he gave of someone who had almost died—someone who was ill went to the seaside to rest and stayed in a hotel where there was this wallpaper. Because it's not just the wallpaper or not just the paint. It's the paint or the wallpaper plus quite a lot of damp. And in the seaside atmosphere, where it was damp, that's where the thing came. And a Persian cat locked in a room developed pustules. I mean, it was nasty stuff.

Victoria Finlay And so, he said, we should stop. The price of this intensely gorgeous color is too high. And people…I mean, a lot of people were kind of positive but,

Emma Vecchione There were also some people who disagreed.

Emily Banas I mean people paid a lot of money for these wallpapers which amounted to them finding it hard to believe that this wallpaper could be dangerous. I mean I think it is kind of an odd thing to think about, that something as benign as wallpaper could have a serious effect on somebody's health. You know, if I hadn't done all the research, I probably would have been like, that's kind of strange, people died because of wallpaper?

Emma Vecchione But Victoria found that there was another, more surprising reason why people disagreed with Dr. Carr at that Royal Society meeting.

Victoria Finlay I read on the account of it, a letter by a Dr. Thudicum who said that he thought it was worth it. He said, my eyes are happy to see this color. We're making too much fuss about nothing.

Emma Vecchione This color—this bright beautiful green seemed to bring out the worst in people. It made some willing to believe that having it and looking at it was worth any cost, even death. When something so beautiful is right in front of you, it's hard to see it for what it really is.

Victoria Finlay See it's quite complicated, these color connections because you've got red which is love and hearts but it's also blood and death. Yellow. Yellow, happy—gold, kings. Also you've got bile and sick. We attach what we want to attach. What works for us. It is interesting because this intense green is chasing what is natural and it's utterly corrupt.

Emma Vecchione Eventually, people across the world accepted that Scheele's green was poisonous and it was cast aside. But this color ushered in a new modern age where green pigments are mass produced in factories rather than being handmade from crushed up plants. And because of that, even today, toxic greens exist. Poisonous substances are used to stabilize green pigments made in factories, so popular shades like for example Pigment Green 7 and Pigment Green 50 contain chlorine and nickel which cause birth defects and pollute waterways.

Emma Vecchione Green has become a mythic symbol signaling the natural world. But it's become an empty symbol, and much of humanity has become so wrapped up in its immediate beauty and symbolic gesture that they have neglected the very basis of that symbol: the natural world and life itself.

CHAPTER THREE: ASTROTURF GREEN

Emma Vecchione So there's this movie, Call of the Wild where Harrison Ford and a dog named Buck go on a treacherous and epic journey through the Alaskan wilderness. In the movie, there's a scene about three-quarters of the way in where the two characters find themselves overlooking this unimaginably idyllic, open landscape. The mountains, trees, and grass are all coated in this deep saturated green, and Harrison Ford turns to his dog, pats him on the shoulder and says:

Harrison Ford Your ancestors used to roam here, and mine, back when we were wild.

Emma Vecchione It's the American wilderness as we imagine it—a heavenly paradise, untouched and wild. But if you watch a behind the scenes clip of the movie and you'll discover that Buck—the dog—was actually played by a Cirque du Soleil acrobat named Terry who imitated a dog's movement by walking on all fours using stilts. So, most of the movie was actually filmed in a green-screened studio, and Terry was edited to look like a dog using CGI technology. The whole heavenly natural environment was actually built in this studio. But what this shows is that the greenest, most pristine looking landscapes can sometimes be a mask—they hide things.

Sean Nesselrode Moncada Everything that looks like beautiful wilderness, like it's perfectly natural is often the least natural thing. The most far away from a pristine, perfect state as possible.

Emma Vecchione Art historian Sean Nesselrode Moncada researches artistic representations of the American landscape. Recently, he studied a lithograph print called *The Pastoral or Arcadian State* by contemporary Mexican American artist Enrique Chagoya. In the image, Chagoya illustrates a bright sun, a blue sky, and everywhere this saturated green landscape.

Sean Nesselrode Moncada It's like the windows default background. That beautiful green hill. You can't take your eyes off of it, and the more you look at it, it looks pretty sickly. It starts to look toxic.

Emma Vecchione It's almost like Enrique Chagoya is trying to make the color green seem like a guy on stilts pretending to be a dog. He wants to reveal the unnaturalness of the color.

Sean Nesselrode Moncada I like to think of it like astroturf green—it's like this artificial replica, and Chagoya is peeling back that green curtain. There's this idea that nature is some way to access some sort of less cumbersome, premodern state of being, but the thing is, the whole "get back to nature," it presupposes this idea that there is something primitive to get back to. But nature was never pristine. It was never a wilderness, and it was never completely innocent.

Emma Vecchione The interesting thing about the landscape in this work of art is that it's not empty. It's populated with portraits of indigenous people like Mewushekaw, the chief of the Iowa people who were displaced from their land by white settlers. And with these representations, Chagoya hints that this so-called great American wilderness wasn't always untouched or wild at all.

Sean Nesselrode Moncada Before the colonization of the Americas by Europeans the landscape was quite populated and it was quite worked by indigenous peoples. You

have the construction of incredible terraces and fortified cities. There are histories of controlled burning of the landscape to maintain the ecosystem.

Emma Vecchione Through burning, indigenous peoples were able to contain under weeds and maintain pathways for walking, which meant that landscapes looked very different from the “wild” looking green landscapes we think of today. But if this is true, how did so many of us come to believe in this idea of the landscape being “wild”?

Sean Nesselrode Moncada The colonization of the Americas by Europeans was preceded by virus and disease that decimated indigenous populations. By the time conquistadors and other settlers arrived in the fifteenth, sixteenth centuries, you have a landscape that has been fundamentally altered by mass death.

Sean Nesselrode Moncada The loss of these populations leads to something called ecological release, where in response to this altering of the balance within the ecosystem, you have vegetation that is running wild, you have huge populations of passenger pigeons for example that run rampant.

Sean Nesselrode Moncada And so the effect of this is that many settlers didn’t see the indigenous Americas at all.

Emma Vecchione Instead, they saw something that was overgrown and wild-looking. And because of this, they began romanticizing nature as this uninhabited heavenly paradise.

Sean Nesselrode Moncada And of course, what that also necessitates is the continued erasure of the people who were there in the first place. The whole logic of colonial expansion requires the land to be uninhabited and if it’s not uninhabited, then you have to invent justifications for the eradication of indigenous populations.

Emma Vecchione The wilderness as we know it is a myth created by colonists. As European settlers forced indigenous peoples off of their land, the histories of the way that they maintained that land were erased—And as the under weeds grew up and became thick and dark and entangled, the ideal of an uninhabited lush green landscape became a really convenient mask to settlers that hid the violence they enacted on that land. Nowadays, our relationship with green and the natural world are complicated—green has become more of a resource, a thing to own than something to live in balance with. But if the color green can teach us anything, it’s that things can change, that nothing is permanent.

Sean Nesselrode Moncada You can’t change history, but you can change how it’s told. And I think it goes back to acknowledging that this is indigenous land. This is a colonized continent. And we can’t change the circumstances of how we got here but we can certainly change how we move forward.

CHAPTER FOUR: DESERT GREEN

Emma Vecchione I live in the suburbs, where green is a lifestyle, and it's everywhere—on walls and clothes and lawns. It's impossible to walk down any street in town without encountering the humming of lawn mowers. And with all that green comes water—lots and lots of water—sprinklers whirring at all hours of the night and water towers looming overhead. But there are plenty of environments that have no front lawns, no sprinklers, not even the pattering of rain. And at first glance, these places seem to contain very little green.

Susan Sekaquaptewa An image is popping into my head from when we were young, growing up in elementary school. We would get books or curriculum not from our area. And these books would always show spring with a bunch of tulips coming up and flowers all over the place. And that was nice. We used to color them and look at them, but as I've gotten older, I'm like, that's not spring where we live. We don't have any flowers coming up!

Susan Sekaquaptewa My name is Susan Sekaquaptewa. My Hopi name means the yellow light that comes up over the horizon as the sun is rising in the morning.

Emma Vecchione Susan is an avid gardener and member of the Hopi Tribe in northeastern Arizona. And her homeland has one of the most arid climates in the country.

Susan Sekaquaptewa My homeland is high desert. It's very dry and very hot. It's very flat. You can see for hundreds of miles. But because it's so flat, we get a lot of wind. And that's probably the hardest thing to live with around here is wind.

Emma Vecchione This desert landscape is a far cry from the lush green hillsides and mountains that were idealized by early European settlers who came to the US.

Susan Sekaquaptewa For the most part the rest of the people around the country when it was being settled, this place wasn't considered very hospitable. And it was pretty much deemed—let's go find a better place to settle so we were left alone for long periods of time.

Susan Sekaquaptewa In more recent times now that we get a lot of visitors. There is a paved road that connects us to the main freeway. And I think when they come here, they see the historic villages and they think, how did these people live here? There's no water. There's no food. And where did they go? And the Hopi people are sitting right here like, we're still here. We just moved over from that village and created new villages.

Emma Vecchione Over the 2,000 years that they have lived here, the Hopi people have become stewards of the land, and they have learned ways to plant crops to fit their environment—namely, through dry farming— a process where they cultivate crops without irrigating them.

Susan Sekaquaptewa We don't water them. We get an average of 10 inches of rain a year and with climate change we're seeing that drop even more. We get some snowfall and we're seeing that less, but whatever rain we get contributes to the growing of food.

Susan Sekaquaptewa A lot of people in our culture today, American culture are really disconnected from the land. They're disconnected from the environments in which they live, so when they loo k around they don't understand or really know what this earth can give us no matter where you live. And so when they see a desolate environment, dry, hot, deserty, there's a big assumption that nothing is here. But over those thousands of years that we've lived here, we've learned to adapt and live within it and thrive in it. So a lot of people just see the harshness and move on, but when you are living within difficulty in anything, there's so many lessons available and the landscape that we live in offers just as much.

Emma Vecchione For centuries, artists have strived tirelessly to mimic nature, to find the perfect green. But maybe we don't have to fight against nature to make green. As Susan says, green can exist anywhere if we are stewards of the land.

Susan Sekaquaptewa You know what really amazes me? Our native plants—our Hopi heirloom plants, our traditional bean and corn plants. We put these seeds in the ground and they pop up…Out of just sand, and these seeds are so resilient. So when you see that green coming out of the earth, breaking through a crusty top because it's so dry and hot already—They do it. They are resilient. They are so strong. They are determined. And that's what makes me happy and that's when I feel real joy—seeing those plants emerge and continue to grow in this pretty crazy environment. It's magic.

Emma Vecchione This episode of Manual was produced, edited, and engineered by me, Emma Vecchione with Jeremy Radtke, Amy Pickworth, and Sarah Ganz. Thanks to Victoria Finlay, Pat Hogan, Gina Esposito, Laurie Brewer, Emily Banas, Sean Nesselrode Moncada, and Susan Sekaquaptewa for contributing. And special thanks to Bill Miller from RISD's Color Lab. To read this issue of Manual and see some of the artworks mentioned in this podcast, you can visit publications.risdmuseum.org/manual. And you can listen and subscribe to the Manual podcast wherever you get your podcasts.