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GCA/RHS Interchange Mid-Term Report

I had been in the UK for no more than two hours and I was full of excitement that surmounted my vicious jetlag. Short scrubby trees and deep green shrubs whipped by as Rowena drove us along the M25 towards Wisley. At the speed of the highway, the flora blurred together to almost resemble that of my home in Boston. Red kites circled in the sky, so similar in appearance from below to my native red-tailed hawks apart from a forked tail. A sunny, cloudless summer day mimicked the one I had just left behind hours before.

After weaving southward through the countryside, we finally came to a short bridge perched on the banks of a canal. The bridge was perhaps seven feet across, preventing two cars from passing at once. We waited for a car to gingerly squeeze between the beams of the bridge, and as it descended the ramp to our side of the canal, I saw a middle-aged woman in the right-hand seat and a deep purple salvia seated in the left. As the car quickly advanced right toward us, my weary American panicked for a moment. Accustomed to looking to the left-hand side for the operator of the vehicle, I for a split second perceived that it was the plant who was piloting this vehicle. The car smoothly turned away from us as my brain caught up to realize that it was, in fact, the lady doing the driving and not the plant. Of course, the driving sides are reversed in the UK.

This journey was an indicator of many of the experiences I had to come, which always featured key similarities and differences between the UK and home. The United States and the United Kingdom share many practices and sentiments in common. Be that as it may, there are also many ways in which the two nations differ. These differences sometimes presented themselves in ways I would not have suspected. For example, I had never before had a thirty minute debate about the difference between a scone and an American biscuit, or perhaps even more important, between a cookie and a British biscuit. In the horticultural field, these differences continued. While I did see many familiar friends in terms of flora, I was floored at seeing many specimens I had never seen before, such as *Trachycarpus fortunei* or *Glyptostrobus pensilis* (which gives the dawn redwood its species name). It has been these moments of learning, inspecting, and reflecting that I have most enjoyed over my first four months here.

My time at RHS Wisley provided me with endless opportunities to learn and continuous enjoyment. I cannot begin to write about the garden without first extending my greatest thanks to Rowena Wilson who has consistently been gracious, patient, and beyond helpful whatever the weather. In addition to Rowena's support, I am appreciative to the RHS staff who have lent me their vast knowledge and to the students who have made me feel so at home. The staff was consistent in their willingness to share their knowledge and incorporate me into their plans, which meant the world to me. Just as importantly, the students were some of the most upstanding

people I have encountered in my adult life. Horticulturally perspicacious, tirelessly passionate, and extremely driven, the group taught me so much about what it means to be a gardener and member of a community¹.

My time rotating through departments at Wisley allowed me to gain insight into a series of horticultural operations in a short time. These six placements, Seed & Wellbeing, Glasshouse, Woodland, Welcome & Riverside, Formal, and Alpine & Rock Garden, gave me a wide view of what it takes for a garden with so many moving parts to operate. If one were to think of Wisley as a roof, each department is a shingle, layered both on top of and below one another to create a cohesive horticultural organization. Going into this rotation process, I had seen that some previous fellows had opted for a greater number of departmental placements with fewer days in each. I elected instead to reduce my number of departments slightly and take more time in getting to know the teams and their individual members. Horticulture certainly requires plants, but it also requires the hands to care for them and the eyes (and other senses) to behold them. It was one of my main goals to spend time speaking with teams to understand what their objectives and aspirations were, both collective and personal. These teams also ended up being lovely groups of people, so I was doubly glad to have been able to get to know them over slightly longer periods of time.



1) *Salvia involucrata* 'Boutin' leaps out at the garden viewer with hot pink pubescent flowers. Though I could not attend the identification walks or tests, the Wisley students were generous enough to let me study with them. This

¹ It was these students who surprised me with a fully prepared American Thanksgiving when I believed I'd be celebrating alone. It was a Thanksgiving I will never forget.

cultivar was one of my favorites from the first set of assigned ident specimens. 2) It is beyond me that the UK can readily grow producing *Musa*, like this specimen in the Wisley exotic garden.

I learned countless lessons at Wisley but rather than breeze through them all in this document, or create a tiringly long inventory of them, I am picking a few to devote special attention. I spent my first two weeks in the UK with the Wisley Seed and Wellbeing Team. My previous horticultural positions had covered the process of carefully sowing seed, watching it germinate, caring for the gangly seedlings, potting these up, watching them bulk up, potting them up again, placing enough trust into the roots of the plants to install them in the field, caring for these adults, enjoying the waves of flowers that would burst yearly, and eventually removing them when life caught up to them. This is a list, a linear progression, an abrupt formula for the life of a plant. Working with the Seed Team gave me the time and space to reassess my conception.

Yes, of course I did know that plants reproduce. But I had not before gone out in avid search of a plant and celebrated upon finding it brown, withered, and scraggly in appearance. These were the plants which were ready for us. We were looking for the plants that had lost their conventional aesthetic appeal, but had not at all lost their purpose. It encouraged me to contemplate the extent to which the blooming of a plant, which we gardeners esteem so highly, is just the introductory act. The formation of the seed and its release is the true aim of the plant's whole season. I had not been giving these genetic capsules, the actual objective of the florescences, their due.

In the process of gathering these seeds I spent time inspecting them to confirm their maturity and identity. I had spent quite some time admiring the bright colors of *Ipomea lobata* (Spanish Flag) in the past, but never had I taken the time to acquaint myself with their long seed pods. When I began to look closely, I saw why a birdsfoot trefoil (*Lotus corniculatus*) got its name from its radial bean-like seed pods. I observed which seeds casually dropped their seeds upon maturity, which waited patiently for a ride from the wind, and which were relying on fauna for transportation. Through this lens, my appreciation for seeds has grown vastly and I feel I have connected the missing piece of my linear understanding, to create a cycle that I will gladly recognize with greater admiration going forward.

During one of my first weeks at Wisley I was fortunate enough to attend a horticultural Diversity and Inclusion (or "D&I" as it's commonly known here) conference hosted at Wisley's Hilltop. The event was an opportunity for different organizations to share ideas on promoting diversity and inclusion in the horticultural sphere, as well as an opportunity to present the goals and strategy of a charter formed in 2022. This charter was created by a large number of garden organizations, numbering in the dozens, to address the long-standing lack of representation in the workplace in respect to ability, race, gender, sexuality, age, and beyond. I was very impressed by this collaborative initiative. In the United States we often seem to largely identify a

representation issue within a single organization and seek to resolve it through internal changes. This idea of pressing for change is great, but I did not always see the long-term avenues the organization would take to arrive at their goal of diversity and fairly distributed power. This charter, however, was a very well thought-through and promising plan. Simply put, it united a large number of organizations to reach agreed upon statistics at established intervals. The results were able to be tracked, there was an urgency to act now as opposed to delaying, and the framework encouraged actors to collaborate. It was a systemic approach that recognized that the industry needed to grow its underrepresented ranks as a collective, rather than as individuals. This initiative was not procedural in any way either. People showed up because they wanted to learn and they showed up in great numbers. I was lucky enough to speak to a few different individuals about their visions of D&I, as well as about their goals and missions horticulture. One of these plantspeople was the esteemed Manoj Malde, one of the most successful and creative garden designers in the UK at present. The conference gave me a helpful introduction to UK D&I initiatives, as well as ideas for possible collaborative programs back in the US.

Wisley also allowed me to explore my interest in ecological horticulture and sustainability. As I wrote at the beginning of this report, at a glance, the northeastern United States and the United Kingdom (at least that which I have laid eyes on so far) share some visual similarities. However, a moment stands out to me when I felt the difference in the actual functions of our separate ecosystems. On a warm Saturday in September, I made the short walk to Wisley Common, to acquaint myself with my surroundings. Upon arriving at a livestock gate, I was faced with a sign describing what a heathland is. Not having heard of heathland before, I naturally gave it a read. I expect the reader will be more knowledgeable on the subject than I was at the time, but just in case I will include a brief explanation. Heathland is an ecosystem type which is defined by acidic soils and primarily low-growing shrubs. This landscape type is sometimes fascinatingly dependent on human agricultural systems. Heathland can be preserved over time by consistent livestock grazing, which reduces mature tree population and overwhelming understory cover. Whatever plants are young and tender tend to be prime pickings for these livestock, resulting in a paucity of saplings which would have bolstered the next generation of crown cover. The result is a perpetuation of this open landscape inhabited by resilient plants, persisting due to their ability to regenerate or their stalwart lines of defense. Some key species that I observed in this ecosystem type were *Calluna vulgaris*, *Erica cinerea*, *Molinia caerulea*, and a personal favorite, *Ulex europaeus*².

Farming communities might allow their cows and sheep to graze these heathlands for hundreds of years, enforcing this regime. What I found most interesting, is that these semi-anthropogenic landscapes have become indispensable to a multitude of species which depend specifically on heathlands for habitat. Even though cows are not needed for agriculture in Wisley Common, there is still a grazing herd present which is needed for the ecosystem

² Scattered over their spiky frames are bright yellow flowers that bloom for half of the year. These flowers smell of coconut yet taste of green beans, the latter owed to their possibly unassuming place in Fabaceae.

disturbance to which the inhabited species are accustomed. This human-related disturbance has been present for so long that to now remove it would spell the loss of habitat for long-time residents.



3) Wisley Common was my first introduction to heathland and my classroom for acquainting myself with UK native flora.

Humans have played an especially large role in physically altering the landscape of the UK. The ecological horticulture I have encountered in the UK does not seek to return the ecosystem to its pre-anthropogenic state, a ship that has long ago sailed³, but rather aims to maximize ecosystem functions in the landscape currently at hand. Some of its primary methods include building habitat capacity for wildlife (both flora and fauna) and keeping in situ nutrient cycles intact. My time with the Welcome & Riverside team allowed me to learn about creating gardens that simultaneously balance three needs: ecological contribution, function as a public space, and aesthetic appeal. I thoroughly enjoyed my time with the Welcome & Riverside team, as they were extremely keen to share their goals and strategies, something which I appreciate to no end. I enjoyed each day with them, whether it was creating dead hedges and bug towers, planting an *Arbutus x andrachnoides*, or pruning spent heather. The principals which they shared with me are ones that I will hold onto tightly.

³ Some statistics I have seen suggest that the UK has lost at least 50% of its biodiversity since industrialization.

My time with the Welcome & Riverside team allowed me to discover another passion of mine: conifers. Growing up in the chilly northeastern US, I developed an interest in them as they were one of the few plants which remained unwaveringly green in the winters. The UK has allowed me to substantially advance my knowledge of this plant division due to the nation's plant-collecting history and forgiving climate. I have never been able to work and study in a region which can host such a vast group of Laurasian and Gondwanan conifers side by side, often resulting in the reunion of genetic relatives which evolved in very different parts of the world.



4) I helped to create and mend “bug towers” in the zones managed by the Welcome & Riverside department. These structures both let green material break down in the same system from which it was collected, as well as provide habitat for insects and small vertebrates. 5) Pruning heathers after blooming prevents the plant from growing leggy and woody, as leaves and flowers will only grow on new growth. Shears as opposed to pruners let us keep a good tempo, as we needed to work through the whole national collection, and allowed us to gently give some shape to the plants.



6) While working with the Woodland Team, I helped in the autumn cleanup of the wildlife pond. These bodies of water must be cleaned of most organic matter in order to stave off organic sediment buildup, subsequently mitigating nutrient levels in the water. The October water was not quite tepid but it was worth it to take a dip into aquatic horticulture.

During his last week with the RHS, Patrick Paul gave me a tour of the pinetum and articulately communicated his passion for conifers, pointing out the most striking or unassuming specimens and explaining their taxonomic and aesthetic significance. He advised me to read Aljos Farjon's "A Natural History of Conifers," which I happily worked through this autumn. The book had a strong impact on me regarding the hidden adaptations, geographic distribution, and taxonomic brain teasers of the conifer world. While reading this work, Wisley's pinetum acted as a fantastic classroom which I happened to amble through every day on my way home from work. My route often ended up winding, as one interesting tree led me to the next. It feels rude to pick certain conifers in collection as favorites over others, but I will gladly do it anyway. One of the most fascinating specimens was *Xanthocyparis vietnamensis*, a species only logged into scientific databases in 1999. The plant is heterophyllous, with long, sharp leaves (unpalatable to herbivores) at early stages, and flatter, orderly leaves as the plant ages. Another favorite was the *Prumnopitys andina* (Chilean Plum Yew) which overlooked Howard's field. Scruffy and the prettiest deep green, with possible hints of dark blue, its bark was a flint grey. This was one of the first Gondwanan conifers I got to know in the UK, which was all the more exciting, as Boston's cold climate has not always been historically accommodating to such guests. Finally, I cannot fail to recognize the *Pinus coulteri* (Widowmaker Pine) of the western United States which boasts colossal, spiked cones, the occasional descent of which gives the tree its common name. This was a great example of the conifers brought from the American west to

Britain by plant explorers like David Douglas, many of which still thrive in the UK. Even the primary timber tree of the UK, *Picea sitchensis* with its blue-green foliage, is an import from this part of N. America.



7) *Prumnopitys andina* sprawls leisurely at the end of the pinetum. 8) This stump belongs to *Protocupressinoxylon purbeckensis*, dated at 150 million years old by the Natural History Museum in London. After reading Farjon's description of ancient conifers, it was especially exciting to see a Jurassic specimen in person.

My wildest conifer dreams did come true when I was able to travel to Bedgebury National Pinetum with a couple other students and one of the RHS instructors. It is one of the very best pineta in the world. The breadth of taxa that they possess staggered me and, though I had gotten rather comfortable with the majority of conifer species found in botanic gardens in the UK, I very happily found myself in a landscape full of species unknown to me.



9) At Bedgebury I spent perhaps too much time investigating how to differentiate *Tsuga heterophylla* (above) and *Tsuga canadensis* (below) by their stomatal banding. 10) A great opportunity to contrast two awl-shaped leaves, that of *Cryptomeria japonica* (left) and *Taiwania cryptomerioides* (right). 11) A straight-shot look down the twig of an *Abies pinsapo* var. *marocana*. 12) A fantastic *Juniperus bermudiana* and its biggest fan of the day.

One of my very favorite finds of the day was a grove of *Pseudotsuga japonica* (Togo-sawara), touting defined wide bracts, and smaller stature than its North American cousins⁴.

⁴ Seeing this species led me to investigate how large the genus *Pseudotsuga* really is. The ongoing discussions on the topic of the genus' taxonomic arrangement in China, Taiwan, and Vietnam is fascinating. I have also resolved to see the western populations of *P. menziesii* var. *menziesii*, *P.*

Another favorite feature was a grouping of three pines: *Pinus wallichiana* of the Himalayas, *Pinus ayacahuite* of Mexico, and their prodigious offspring, *Pinus x holfordiana*. The arrangement of these three together was clever and I may have easily missed this if not for the help of our instructor. We had a chance to see the largest *Abies pinsapo var. marocana* (Moroccan spruce) I had seen in the UK. Its strong, sharp needles and mathematical branch structure were striking and it was remarkable to me that a plant from North Africa could survive so well on these rainy hills of green. The last plant I will highlight is simply too fun to pass over. I would never have thought a plant from bermuda capable of growing vigorously, if at all, in this climate but to my amazement an emerald green *Juniperus bermudiana* stood overlooking the visitor building.

While at Wisley I was able to assist with three different departments which were not directly under the umbrella of applied horticulture. The first was the Community Outreach team, which organizes programs across the country in an effort to spread horticultural knowledge and passion to communities. Alice Cornwell, the Community Development Officer for South East London, heard that I was interested in this kind of work and kindly brought me along to a public NHS community garden in Lewisham. The RHS had worked collaboratively with Lewisham residents and the NHS to design and build this site, which offered a chance for community members, NHS staff, or patients and their families to interact, relax, and garden. I learned lots and had a great time on my first visit. I was able to talk to the fantastic group of steadfast volunteers that show up every week as we raked leaves, shoveled compost, and harvested autumn veg. People came to the garden for many different reasons; some came for their daily exercise, some came to grow healthy food, and all came to do something good for their community. These volunteers were beyond welcoming and made me feel instantly part of something bigger than myself. It is people like these, moments like these, that remind me exactly why I am doing what I am doing. Alice invited me out to Lewisham for a second time in December to assist in a wreath-making workshop for NHS staff, which I enjoyed just as much as my first visit.

I had another opportunity through Lewis Jeff George, the RHS's Horticulture Engagement Officer, to help with the RHS' New Shoots Program stall at the Birmingham Career Fair. New Shoots covers a lot of ground in what it undertakes, but to describe it briefly the department seeks to introduce people of all backgrounds to horticulture and provide realistic and achievable pathways into the industry. Something that I respect most about this program is that it is not dedicated to recruiting solely to the RHS, but instead it simply aims to generate opportunities and build pathways in the whole field. Their objective in Birmingham was to speak with students, stir up some excitement within them for growing plants, and encourage them to consider a career in horticulture. As we talked to them about their interests, we walked each

menziesii var. glauca, and *P. macrocarpa* in person when the opportunity presents itself when I am back home.

student through taking a cutting of *Tradescantia zebrina* and placing it in a coir bundle so they could take it home with them. We were flooded with more students than any of us had expected over the two days and we gave away hundreds of cuttings. It was incredibly rewarding to see the excitement of these students who will be our next generation of gardeners and good fun to see Birmingham, which happens to have the largest German Christmas market outside of Germany.

Back at Wisley, I met Kyle McHale, one of the few Americans at the garden. A Maryland native, he has worked in education in the UK for years and is now an Education Officer at the RHS. He and his department organize and run on-site learning programs for elementary schoolers that visit the garden. I was able to join the Education Department for a morning to assist with a program for kindergarteners. I found it very helpful to see first, how children's minds work regarding plant material, and second, how to shrink large concepts into simpler, approachable ones. At one point, John, the leader of the program, held up a cactus and began to explain how its shape is really good at holding "something that it might need in the desert." When he asked for what the students thought a cactus could hold, a brave child very confidently stated that it must be filled with sand. It seemed the most logical explanation to many of the others and they nodded in assent. While I could not hide a grin, I believe that moments like this are of great importance to both a child's development by allowing them to make hypotheses, regardless of the eventual veracity, and an educator's development by revealing how young brains operate. This early-life way of thinking is often in a way that we have been encouraged to forget as we age, though it remains instrumental in communicating information between generations.

In October, I took a couple days of vacation time to visit a friend who was working at the gardens at Maison du Claude Monet. The French countryside was stunning and it was fun to visit the estate of possibly one of the greatest to touch the canvas. Amazingly, the garden retained great color even at this stage of the fall, with salvias, dahlias, and coreopsis keeping the space bright. The garden managed to immerse the visitor in feelings of wonder and exploration within an area that one would not quickly describe as expansive. A magical memory was observing the famous water garden, with its iconic Japanese bridges, change colors in the countryside crepuscule. On top of this, the garden staff I met were exceptionally welcoming and kind. I thoroughly enjoyed my time at the garden and the surrounding area and hope to return in the future.



13) A palette of colors stays strong even into mid-October in Giverny.

One of the greatest highlights of my time in the UK was a weekend with last year's Interchange Fellow, Sam Fry. Sam is one of a kind, demonstrating both extensive plant knowledge and admirable kindness. Upon meeting me for the very first time he invited me to visit him out to his home turf, the Cotswolds, for a weekend. I gladly took him up on his generous offer and I caught a series of trains westward on a December weekend. Sam picked me up from the station and we headed straight out toward Hidcote. To our great fortune, that morning a hoarfrost, my first UK hoarfrost, had set in. We drove through fields covered in a thin glaze of ice, lined with *Crataegus monogyna* and *Sorbus aucuparia*. We arrived at Hidcote right as the sun began to peek out from the clouds, causing light to reflect off the ice crystals which hung from the plants in the garden. Hidcote itself was beautiful, with distinct sections that still flowed well together, gently pulling the observer along. I spent the evening with Sam's family who were the image of hospitality. They made me feel very at home with a homemade cottage pie and a warm fire.

In the morning we ventured to Westonbirt Arboretum to join in their monthly coppice program. This coppice can be traced back to the 1640s and over these centuries communities continued to rely on the *Corylus avellana* for firewood, hurdles, and building materials. World War II brought the practice in this woodland to a halt. A gentleman named Brian Williamson recognized that the coppice maintained balance in the ecology of the forest and started the initiative twenty years ago to reintroduce management. Brian trained me on clearing the area with a slasher, removing thin hazel shoots, and pleaching larger branches with a billhook to create new stools. It was fascinating work and just a lot of fun. Sam and I managed a quick walk through the arboretum itself, which hosted a fantastic collection including a two-thousand year-old *Tilia cordata* coppice. When Great Western Railway canceled all trains back to West Byfleet with no notice, Sam was so generous that he drove me home to Wisley. Through all of his kindness he has shown me what it means to give back to the program which I will certainly remember going forward.



14) Frost blankets this presumed member of Apiaceae. The whole garden was immersed in this same thin cloak of ice.



15) Sam and I took a break from working to pose with our slasher and billhook. 16) Once clearing the small stems we pleached the larger stems with saws and billhooks to create new stools roughly six feet from the existing plant.

After a brief trip home to see my family in the States for the holidays, I headed south to Cornwall's Eden Project. My day morning at the garden, I crested a hill only to look down into the old china clay mine, mostly obscured in the dark of a January morning but for the massive illuminated domes occupying the bottom of the basin. The garden was like nothing I had seen before, boasting education, art, and entertainment. I was based in the Mediterranean department for the first section of my time there and I enjoyed the selection of plants they had to offer, hailing from mediterranean Australia, afromontane regions, chaparral, and the Mediterranean

Basin amongst others. My favorites plants within this biome were likely the citrus, which were brought from Asia to Northern Africa, and then Europe by the Moors⁵.



17) After proper training I had the chance to use an air spade, which I had never used before, to reduce compaction in the afromontane section of the Mediterranean biome. 18) Citrus often are fed foliarly for fast nutrient uptake. My hose was attached to a Dosatron which uses the water pressure to mix in the fertilizer at a consistent percentage.

While working in the Mediterranean biome I was able to witness the effectiveness of a garden which is on the ball in passively communicating with the public, reaching people of all levels of garden knowledge. Through plantings and signage Eden Project connects visitors to plants which they might know as a good or material, introducing them to how an almond (*Prunus dulcis*) is actually a large cherry seed or how corks are made from the fire-hardy, regenerating bark of oaks (*Quercus suber*). I could actually hear people talking about the plants they were seeing with interest and I could see children's faces lighting up when learning something new about a plant. This is not always easily achieved in horticulture and I commend the Eden Project highly for this aspect of their garden.

I would be remiss to fail to mention a couple of my favorite London outings which were not focused on gardening. On one of my first trips to the city I paid a visit to the Tate Britain Museum located on the northern banks of the Thames. I was elated to see the works of some of my favorite painters, including J.M.W. Turner, James McNeill Whistler, Dante Rossetti, and John

⁵ The more I look into the Moors, the more I come to realize to what extent they have shaped the world that Europe is today through science, agriculture, mathematics, and philosophy. It is disappointing that they are not discussed more frequently as great contributors to the civilization of Europe. Their ideologies must have been so perceptive, their sciences so advanced, their art so beautiful that many Europeans who ended up omitting their accomplishments from historical texts must have done so out of embarrassment.

Everett Millais⁶. Of all the pieces I saw, I was most enthused by those of John Singer Sargent. Sargent spent part of his career in Boston, and consequently many of his pieces are proudly on display in the Boston Museum of Fine Arts, Isabella Stewart Gardner Museum, and Boston Public Library. I grew up seeing these works, including some of his most well known, and was over the moon to see a series of his other famous pieces which reside in the Tate Britain.



19) John Singer Sargent's unfinished copy of *Madame X*, which caused an artistic scandal at the time of its creation in the 1880s. 20) A look into the rafters of the Royal Opera House.

Lastly, one of my very favorite non-horticultural memories was my attendance of *Cavalleria Rusticana* and *Pagliacci* at the Royal Opera House. I had already been meaning to catch a show there when a Wisley student, who used to work at the ROH, offered discounted tickets to the performance. I needed no convincing. Upon arriving at the theater, our ROH connected friend revealed that we would be sitting in the third row, with a view into the pit, all for the price of fifteen pounds. Only having seen operas from the nosebleeds at the Met Opera House, I was blown away. The performance was beyond amazing. Romance? Betrayal? Revenge? In back to back shows? It was truly a highlight of my autumn in the UK.

I have been extremely thankful for this opportunity. I truly treasure the people I have met, skills I have learned, and memories I have made thus far. I am immensely excited for the second half of this program and I thank the Garden Club of America and Royal Horticultural Society for giving me this life-changing opportunity.

⁶ Of the Pre-Raphaelite works I studied at Bates, Millais' somber *Ophelia* had been one of my very favorites. I was elated to be able to inspect the artist's choice of flowers in person.