

Integrating Art, Science & Curiosity

Collaborative Cyanotypes





KENNEDY
Museum of Art



Images on cover:

Mural detail by Lori Esposito in *Through the Appalachian Forest*

Cyanotype by East Elementary School 3rd Grade

Plant specimen from Floyd Bartley's collection

Detail from *Blue Forest* by Seth Harris, *Emerging Artists: Federal Hocking High School Photography*



During the spring of 2019, over 750 PreK-12 students visited the exhibitions ***Emerging Artists: Federal Hocking High School Photography*** (Kennedy Museum of Art) and ***Through the Appalachian Forest: Field Explorations Illuminated by the Floyd Bartley Herbarium*** (Ohio Museum Complex).

Wondering how to combine the idea of an herbarium and a photography exhibition into one unique activity, student staff at KMA decided to use cyanotypes. Not only were they originally created as a photography method, cyanotypes were also used to document plant species!

What is a cyanotype?

A cyanotype is an alternative photographic printing process using chemically treated paper that creates a clear print of an object when exposed to UV light.

History

Cyanotypes were first invented by the astronomer and chemist John Frederick William Herschel (1792–1871). The name cyanotype was derived from the Greek word cyan, meaning dark blue. Herschel experimented with the cyanotype process in the 1840s and inspired Anna Atkins, daughter of his friend Dr. John Children, to illustrate her botanical studies with cyanotype photograms.



Atkins published three volumes of her book, *Photographs of British Algae: Cyanotype Impressions* (1843–53). As was customary of the era, Atkins produced and published her book in installments. With the release of her debut set in 1843, she became the first person to publish a book of photography.



Method

The cyanotype method generally involves coating paper or other absorbent material with a mixture of iron salt (typically ferric ammonium citrate) and potassium ferricyanide; placing a flat item of interest on top of the paper and holding it in place under a piece of glass; exposing the entire assembly to sunlight for several minutes; and then rinsing the paper with water once the item has been removed. Rinsing the paper sheds it of the chemicals so that it does not continue to develop after the image is created.

Through the Appalachian Forest

The herbarium exhibition provides an insightful example of the collaboration between science and art. On one wall hangs pressed plants gathered from the Floyd Bartley Herbarium of Ohio University, collected locally since the 1930s. On the adjacent wall is a mural of local plants and animals painted by Lori Esposito that demonstrates the biodiversity hotspot that is Southeast Ohio.



This space illustrates the harmonious nature of such collaborations. It also fits well with the idea of cyanotypes: documenting nature in a beautiful, creative, and unique way. Students light up when they enter the exhibition, recognizing plants they see in their own backyards and hearing familiar sounds such as spring peepers.



About the Floyd Bartley Herbarium



Floyd Bartley was a farmer from Southeast Ohio who began collecting plant specimens in the early 1900s purely out of curiosity and interest.

As his collection grew, it became the Floyd Bartley Herbarium, and he donated all of his specimens to Ohio University upon his death in May of 1957.

The herbarium collection has continued to grow since its inception. Today the herbarium consists of thousands of plant species that are used by university students to study local biodiversity and plant life.

In the KMA Studio

In the Christine Demler Brown Center for Art, we have cyanotype papers that are already chemically processed. Using these, all you need to do is expose your chosen plant species to light for a few minutes, and then rinse them in water.



Student staff took time to test them: how much time was required in the sun on a sunny day versus a cloudy day; how much time was necessary to process them under a UV lamp, etc. Eventually, a good balance was found with about ten UV lamps, exposing cyanotypes under them for just two minutes.





By the time our spring tours came to a close, 762 students from elementary schools in the area had made their own cyanotypes using plants.

Another method we experimented with was processing our own cyanotype papers to use outdoors with East Elementary's third grade.



Using a makeshift darkroom at the museum, we mixed two chemicals and painted the mixture on normal watercolor paper to make it react to sunlight and turn blue. After drying the papers, we carefully brought them outside (avoiding any exposure to sunlight) for the students to use.



Because these were much bigger than the pre-processed variety we have, five or six students were able to collaborate on one cyanotype, each picking out their own local leaves and flowers. They placed the plants on the paper, with plexiglass on top, and let them expose in the sun for around ten to fifteen minutes. After they developed and changed color significantly, they were hosed off. Despite the somewhat cloudy day, the final product is impressive, and strikingly beautiful.



Image Captions:

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Visiting elementary students interact with the *Through the Appalachian Forest* exhibition.

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An image from Anna Atkins' book, *Cyanotype Impressions* 1843-1853.

East Elementary third grade students process cyanotypes in the sunlight outdoors with student staff member Julian Shepherd.

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Nancy Stevens facilitating an elementary school tour in *Through the Appalachian Forest*.

Some of Floyd Bartley's plant specimens on display in *Through the Appalachian Forest*.

Floyd Bartley pictured circa 1950 with some of his plant specimens.

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Visiting students make cyanotypes under UV lamps in the KMA studio.

A cyanotype immediately after light exposure is put into water to wash off any remaining chemicals.

Student staff member Rachel Broughton demonstrates how to make a cyanotype.

Cyanotypes by visiting students lay out to dry after being rinsed in water.

Student staff member Abigale Collins processes cyanotype paper in a makeshift darkroom at KMA.

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East Elementary third grade students process cyanotypes in the sunlight outdoors with KMA student staff members Emma Stefanoff and Rachel Broughton.

Detail of a final cyanotype from the East Elementary third grade visit, when we made them outside in the sunlight.

Sources:

Page 2-3:

https://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/atlas_cyanotype.pdf

<https://unblinkingeye.com/Cyanomicon.pdf>

Page 5:

<https://www.ohio.edu/plantbio/herbarium/>



Tour Facilitators:

Rachel Broughton
Jen Cantu
Abigale Collins
Sally Delgado
Norma Humphreys
Basil Masri-Zada

Sarah Melaragno
Jessica Minarchek
Lisa Quinn
Julian Shepherd
Emma Stefanoff
Nancy Stevens

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Booklet created by Rachel Broughton & Emma Stefanoff