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BIO 140 Arboretum Project

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Cercidiphyllum japonicum (Katsura) ID #1139

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Dr. Chace

BIO140L: Humans and Their Environment Lab

April 23, 2020



Katsura

Cercidiphyllum japonicum

ID #1139

Dr. Chace's BIO140L: Humans and Their Environment Lab is meant to give students a better understanding of our environment, he supplied us with the perfect hands-on experiment by giving students an assignment to study and observe a tree of their choosing on campus for the Spring 2020 semester. After class, I felt drawn to the Katsura tree that stands across from Miso Gatehouse by the pathway to the McKillop library. It's so central to campus and would allow me to observe it to and from class and whenever I would go to McKillop to study or do homework, very quickly my friends also grew attached to the tree (Figure 1).



Figure 1: My friend Jasmine with my tree, mid-February a couple weeks after the start of the project.

The first few pictures of this tree demonstrated that it was approaching maturity as a full-grown tree is between the heights of 40-60ft with a 20-30ft diameter (The Morton Arboretum). This tree didn't appear to be mature yet, but the quick natured growth of a Katsura indicates that it should be a mature tree within the next couple of seasons of growth. Furthermore, the cool

climate of a Newport winter showed signs of lichens and mosses living on the Katsura's bark, which would be sure to become more vibrant and abundant as the weather warmed (Figures 2 and 3).



Figures 2 and 3: Images of the Katsura bark featuring lichen and moss growth.

The Katsura tree is native to Central, Western China, and Japan. The tree arrived in Newport, RI when the original owners of the gilded age mansions competed to import the most exotic species of trees from across the world. The Katsura is not native to North America, but is frequently planted in residential areas, parks, and streets as it provides shade; additionally this tree is relatively easy to take care of, only needing to be watered in times of drought (The Morton Arboretum). The placement of this Katsura on campus shows that the intentional planting of the tree near sidewalks and walkways was meant to provide students with shade as they walk between classes (Figure 4). Katsuras are deciduous trees, meaning it experiences a seasonal loss of leaves which is why the tree is barren in the first few weeks of observation (Figure 4).



Figure 4: Deciduous trees lose their leaves seasonally, the Katsura remains leafless during the cooler fall and winter months until the warmth returns in the spring. Notice how the branches are barren and fallen leaves lay at the base of the tree.

Like many other trees in New England, the Katsura's foliage turns an apricot or yellow shade before they fall. When the leaves emerge in the spring they have a reddish-purple hue that matures into a green heart-shaped leaf in the warmer months (The Morton Arboretum). Due to the COVID-19 outbreak, students weren't on campus to see the Katsura bloom, however, Dr. Chace was able to capture images of the foliage while on campus (Figure 5). The heart-shaped leaves are now primarily green due to the stage of maturity, but it is still possible to see faint reddish, orange hues in some of the leaves that are late to mature (Figure 5).



Figure 5: The newly matured leaves on the Katsura trees are transitioning from a reddish shade to a green color that it will maintain until the fall.

In the coming months, the Katsura will continue to grow and possibly produce flowers or buds in different arrangements depending on the gender of the tree (The Morton Arboretum). It will continue to grow through the summer and experience its annual change and loss of leaves in

the fall. This Katsura is suffering from an internal fungal infection that threatens its life and ultimately could result in complete tree removal.

Under normal circumstances, the Katsura would be a healthy tree expected to live for multiple decades without the threat of common serious pests (The Morton Arboretum). Mr. Mike Chester, head of grounds at Salve, informed us that tree 1139 is experiencing some interior rot. Interior rot is a fungal infection often caused by excess moisture, due to the internal nature of the disease it is hard to know the tree is experiencing rot unless it is leaning or demonstrating mushroom-like growth on the tree's exterior (Mr. Tree). Unfortunately, tree rot is easy to prevent and hard to fix leaving the easiest, and often only, solution to be complete tree removal (Mr. Tree). Mike Chester confirmed that tree removal will be the most likely course of action in the near future, as all attempts to heal the tree have been exhausted and unsuccessful.

This Arboretum project has opened my eyes to the extensive variety of trees I hadn't known about prior. I have been able to appreciate trees for the shade they give us and the home they provide to many other species of wildlife. It was interesting to see how a tree from Asia could make it back to the United States and become a prominent landscaping feature on campuses and on residential properties. I look forward to observing tree 1139 in the future and will be sad to see it go if the internal rot can't be solved.

References

- The Morton Arboretum. (n.d.). Katsura tree. Retrieved April 24, 2020, from <https://www.mortonarb.org/trees-plants/tree-plant-descriptions/katsura-tree>
- Mr. Tree. (n.d.). Tree Rot 101: What You Need to Know. Retrieved April 24, 2020, from <https://mrtreeservices.com/blog/tree-rot-101/>