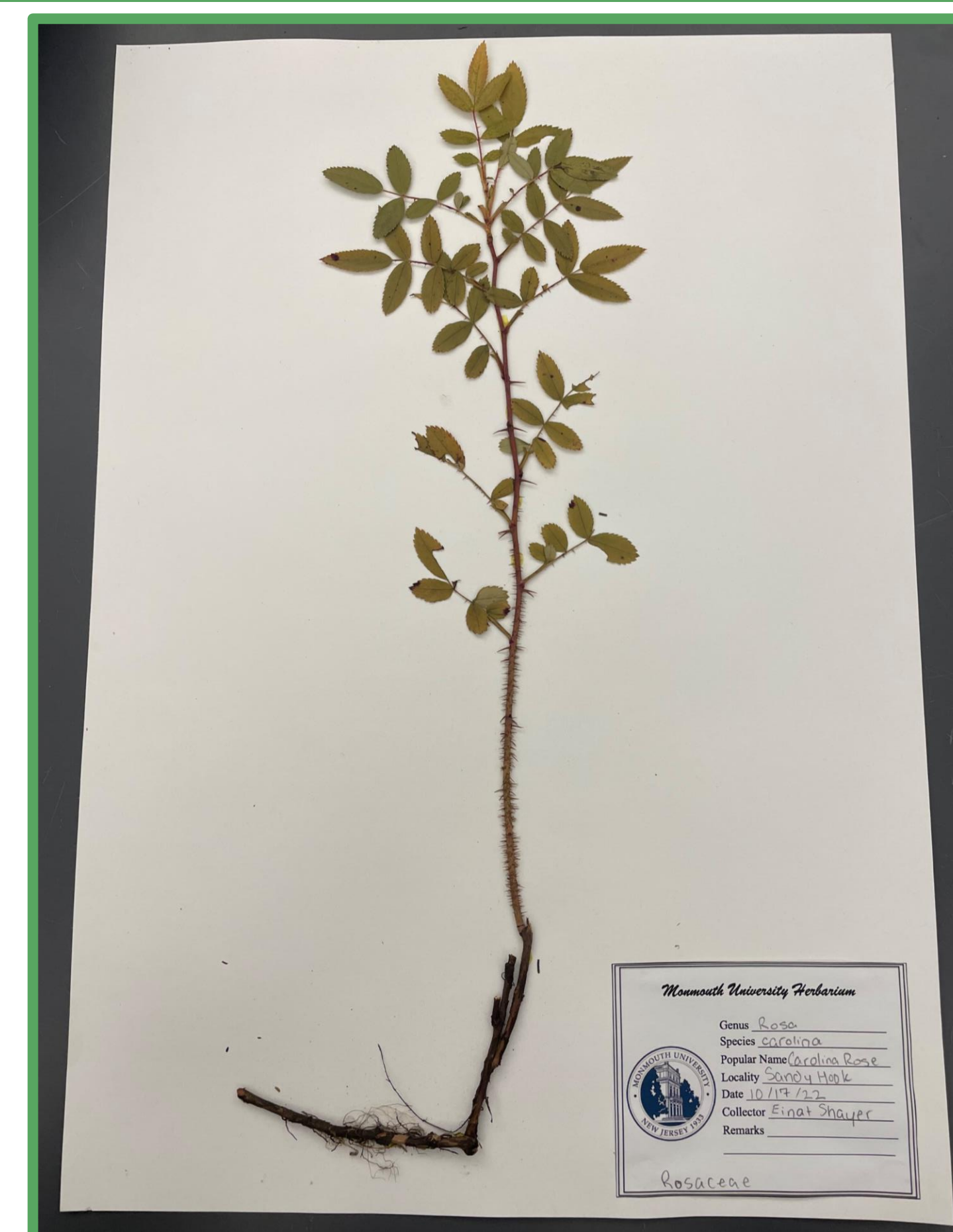
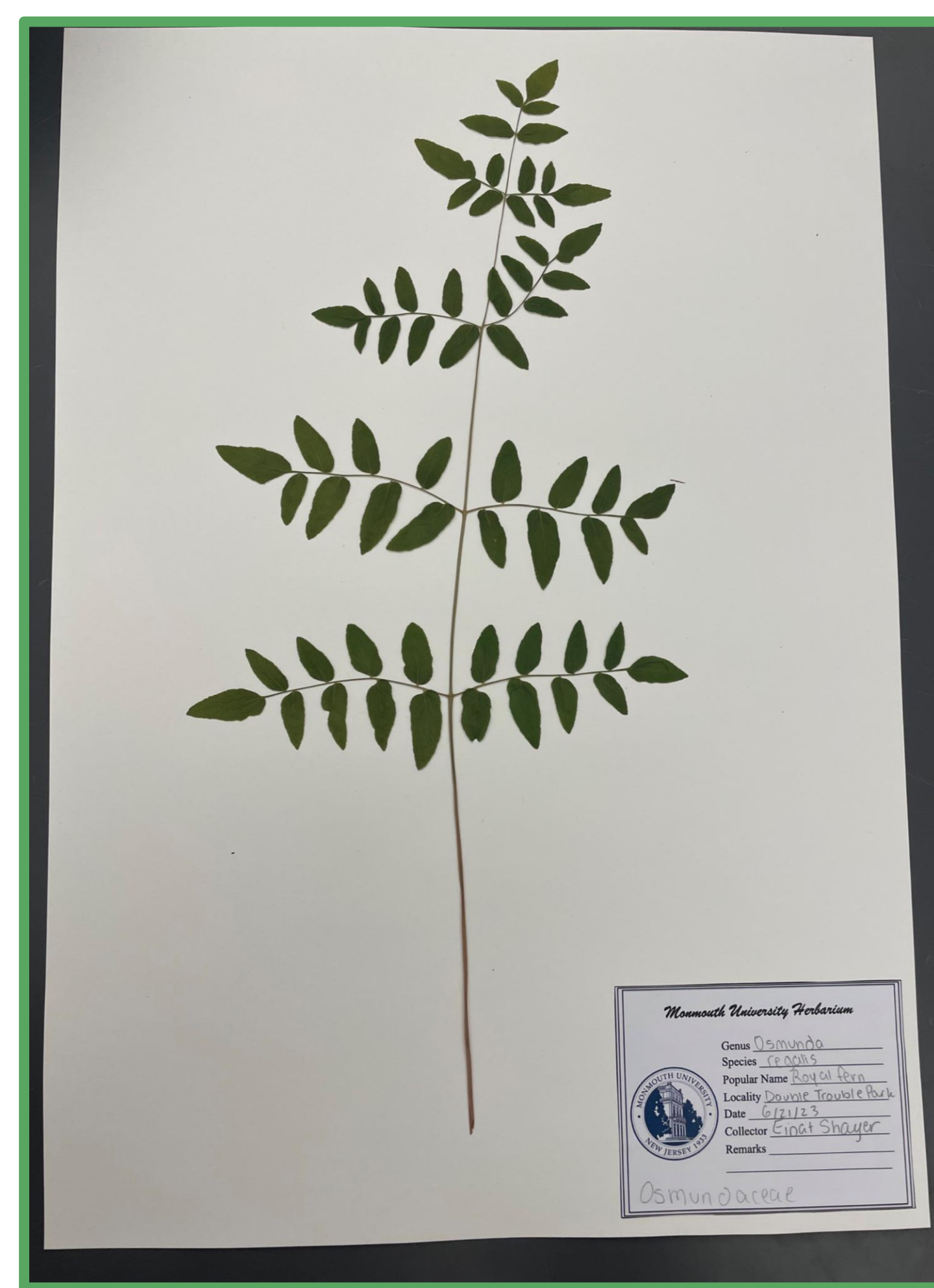
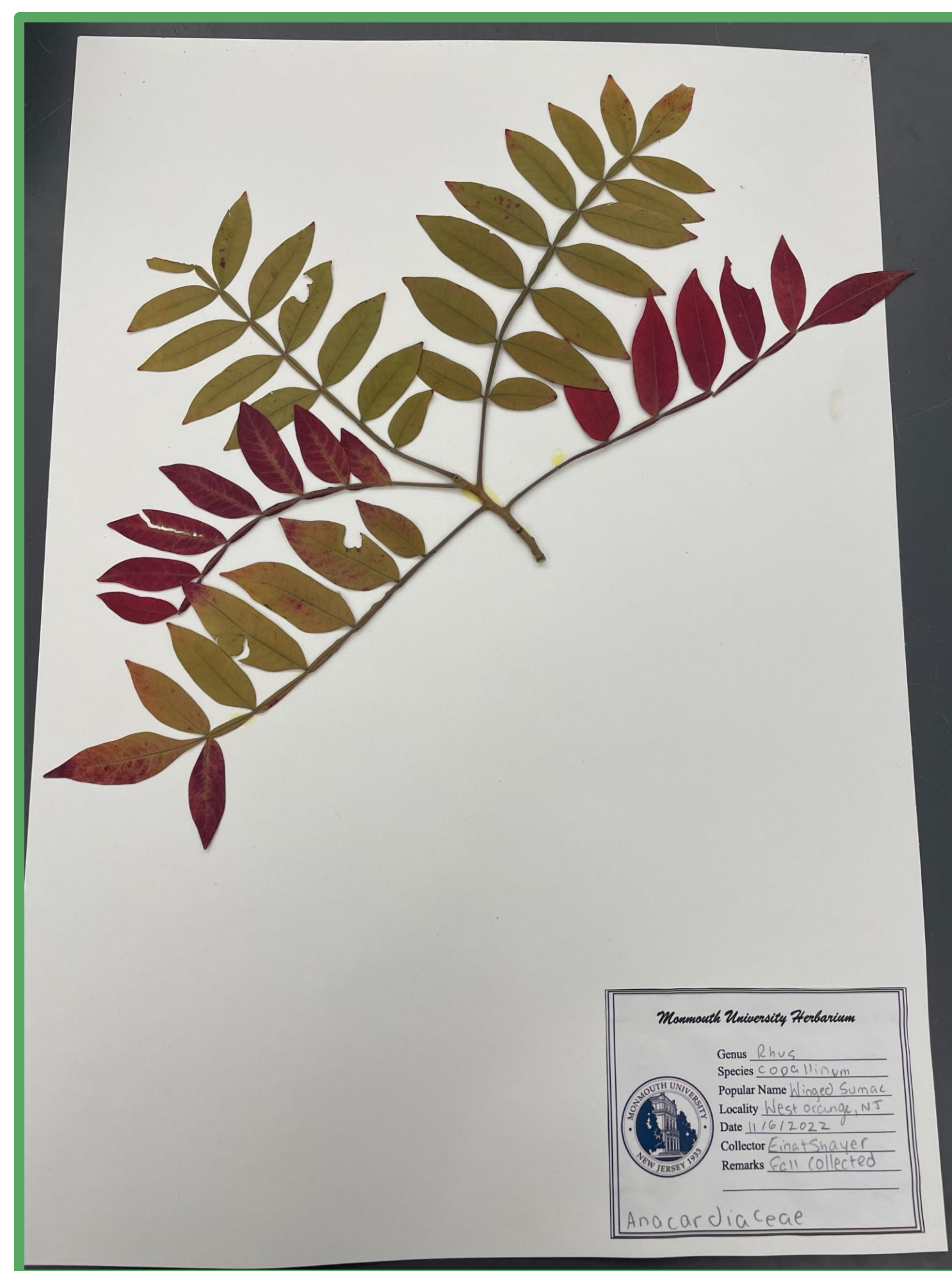


Developing the First Monmouth County Herbarium

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Purpose

The purpose of this project is to develop the first herbarium of all vascular plants found in Monmouth County. I aim to collect native plant species found locally, press, mount and identify them as part of the overall goal of creating a plant database and archive online via a website. This project is a continuation of an Independent Study that began in the Fall semester of 2022. There are nearly a thousand species found just in Monmouth County alone. This diversity is due to the several types of ecosystems found in the county including pinelands, wetlands like marshes and bogs, mixed forests, maritime forests and other associated dune communities. Collecting plant species in Monmouth County is significant in order to understand what plants reside in our native county and what the potential threats are to these plants from climate change and invasive species.



Methods

Three days of the week was used to go to the field and collect plant samples. The following steps were used to collect samples during field days:

- A list of native plants was created and used as a guide as to which plants were going to be taken in the field.
- A clipping of a desired plant was taken using pruning shears. A proper clipping would have a clear view of leaf arrangement, the shape of the leaf, and flowers if applicable to the plant.
- The clipping is then immediately put in a pressing machine for up to two weeks.
- After two weeks, the pressed plant would be mounted onto a sheet of paper and identified. The label of the plant has the common and scientific name, the date and location collected, the name of the collector, and any notes about the pressing (i.e seasonal coloration)

After a plant sample has been pressed and identified, the plant was recorded to an excel database and added to the herbarium collection.



Results/Discussion

As of March 2024, over two hundred and forty native Monmouth County plants have been pressed and recorded into the excel database. A significant portion of the plant samples collected consist of hardwoods and shrub species. The majority of the plant species collected come from maritime forests, deciduous forests, and the New Jersey Pine Barrens. More species from wetlands and salt marshes must be collected for the Monmouth County Herbarium. The most difficult type of plant species to sample and press are grasses and sedges; the most convenient type of plant species to sample and press are hardwoods such as oak trees. Grasses and sedges are the most difficult to identify due to similarities among each species and showing the leaf arrangement and venation is also difficult when pressing them. Hardwood leaves are simpler to press as their leaves are large enough to see the arrangement and venation. It was easier to find more samples in deciduous forests because the field conditions and substrate were easier to work in than a salt marsh or wetland. In a salt marsh or wetland, the field conditions are more difficult to work in due to unstable substrate and tidal changes.

Future goals for the Monmouth County Herbarium include developing a website to catalog every native plant with a photo and information provided for each species. This website can be used as reference for scientific studies that focus on New Jersey conservation and restoration and effects of climate change in New Jersey forests and coastal environments. The final product can also be used for the public as information on what plants are vulnerable and common in their area and what plants can be used as ornamental decorations while being environmentally conscious.

Acknowledgements

A special thank you to the  PERL lab team, the Monmouth University Provost Summer Scholar Program, and the Department of Biology.