WVA Herbarium Newsletter

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Grant Projects Progress Ongoing: *Invasive Plants and Fern Digitization*

In spring 2020, the COVID shutdown moved both of the WVU Herbarium's multi-year funded projects to remote work, which is continuing into 2021. Student workers supported by a U.S. Forest Service contract for invasive plant research had previously compiled world-wide label information from WVU Herbarium specimens for seven species. Subsequent study narrowed the focus to four non-native plants: Jointed Grass (*Arthraxon hispidus)*, Ground-Ivy *(Glechoma hederacea)*, Asiatic Water Pepper (*Persicaria longiseta)*, and Common Chickweed (*Stellaria media)*.

The summer 2020 field season was limited by travel restrictions, but the next step of gathering additional data for these invasives from national and regional herbarium portals advanced from offsite. Results show oldest presence was by both European species: *Glechoma* in Delaware (1748) and *Stellaria* from Massachusetts (1824). The Asian *Arthraxon* had its first introduction in Maryland (1916), based on 801 specimens from 27 states. *Persicaria* initially appeared in Pennsylvania (1923), based on 545 specimens from 20 states.

The other project, a 3-year NSF Pteridophyte Collections Consortium (PCC) grant, is nearing completion. The award has funded digitization of fern herbarium specimens and fossils from 39 institutions. WVU Herbarium material from outside the southeastern U.S. (2,700 specimens) was barcoded and shipped for processing to University of North Carolina, Chapel Hill. More than 8,900 WVU Herbarium fern collections have now been imaged, with specimen label information transcribed and posted at the PCC online portal.

Closer to home, the WVU Herbarium is partnering with WVU Libraries to share digitized specimens (images and label data) online, as featured in their Fall 2020 *Ex Libris* magazine. This will facilitate remote use of the Herbarium, which is especially helpful during the pandemic. At present, West Virginia ferns and a sample of Appalachian flora specimens are accessible at researchrepository.wvu.edu.

COVID-19 Impacts

Dr. Ford-Werntz's WVU faculty job went virtual at spring break, with course teaching completed remotely. Her Herbarium duties moved to home assignment, and all six other workers were excluded from the facility. Visitors were prohibited until campus reopened for summer research.

On the bright side, student worker Matthew Sheik received third place for his poster presentation 'WVU Herbarium Digitization Projects' at the April 2020 virtual WVU Undergraduate Research Symposium. The curator's summer conferences converted to webinar format (so long Scotland trip), and all meetings went online (hello Zoom fatigue).

In August, Dr. Ford-Werntz's contract decreased to 80% (a pre-pandemic plan), which limits her tasks to herbarium curation and two ongoing grant projects (see above). Herbarium activities are expected to resume throughout 2021.

Big Tree Champions

Two West Virginia Downy Serviceberries (*Amelanchier arborea)* were recently designated as national co-champions with 163 Big Tree Points each (based on trunk size, plant height, and crown spread). Both trees, one in Pocahontas County and the other in Upshur County, are now listed in the American Forests 2020 National Register of Big Trees.

The champions achieved their equal scores via very different growth forms. The Pocahontas County tree is shorter (44 feet tall) and broader (54 feet crown spread), with trunk circumference of 105 inches. The Upshur County tree is twice as tall (88 feet) and more slender (36 feet crown spread). Its trunk circumference is 66 inches.

West Virginia Big Tree Coordinator, Bob Hannah, and other WV Division of Forestry staff measured and certified each tree. They provided photographs and collections (at multiple seasons and appropriate stages) for WVU Herbarium voucher specimens. These were shared with Chris Frye, of Maryland Division of Natural Resources, who provided expert identification. For more details and images, search this species on the National Register of Big Trees at www.americanforests.org.

WVU Historic Trees Documented

Last spring, WVU announced that five historic campus trees were determined to be safety hazards and would be removed. The WVU Herbarium was able to preserve the plants for posterity with photos and plant collections. The first two trees, both dating from late 1800, were removed in March 2020: a Black Maple (*Acer nigrum*) near Chitwood Hall and a Red Oak (*Quercus rubra*) south of E. Moore Hall.

Removal of the final three trees took place in December 2020. The most notable loss was the iconic 1819 Sycamore (*Platanus occidentalis*) in front of E. Moore Hall. The other pair was an American Elm (*Ulmus americana*) near Martin Hall and a Sweetgum (*Liquidambar styraciflua*) by Purinton House.

WVU Arborist Josh Pritts and Core Arboretum manager Zach Fowler assisted with obtaining material for the herbarium vouchers, including fruit. WVU hopes to repurpose the timber into wood products and has undertaken new tree plantings as part of its Tree Campus program. Two historic trees (marked by bronze plaques) remain on the downtown campus, while WVU Herbarium specimens will honor memories of the departed trees.