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West Virginia Herbaria: Status, Updates, and Plans

The West Virginia (U.S.A.) Herbarium Curators met on December 1st, 2021 (Fig. 1), with the intent of sharing updates on the collections, fostering collaboration, learning from each other's experiences, and identifying priorities for the collections towards the future. This article presents a summary of the herbaria that were represented in this meeting.

West Virginia University Herbarium (WVA)

The WVA Herbarium is located in the basement of the Life Sciences Building in the main campus of West Virginia University in Morgantown, West Virginia. It is the largest herbarium in the state with approximately 190,000 specimens of vascular plants. Founded around 1889, the WVA Herbarium is a National Resource Collection and the best collection of plants for the state of West Virginia and the Central Appalachia region.

In addition to vascular plants, the Herbarium also houses the Earl L. Core Botanical Slide Collection (over 25,000 color photographic slides), the Elizabeth A. Bartholomew Seed Collection (over 2,000 seed collections), and ca. 30,000 specimens of non-vascular plants (mosses, liverworts, and lichens). The latter are located in a room on the top floor level of the same building at WVU.

The West Virginia University Herbarium was involved in the NSF grant that funded the digitization efforts of Southeastern Herbaria in the United States that resulted in the creation of the Southeast Regional Network of Expertise and Collections (SERNEC) portal, <https://sernecportal.org>. About 95,000 specimens from WVA were digitized as part of this grant and are available in the portal.

All West Virginia label information from the WVA vascular plant collection has been transcribed to an in-situ database and is available upon request, by emailing the curator (dford2@wvu.edu). This dataset served as the



Fig. 1. Meeting of West Virginia Herbarium Curators, online due to COVID-19.

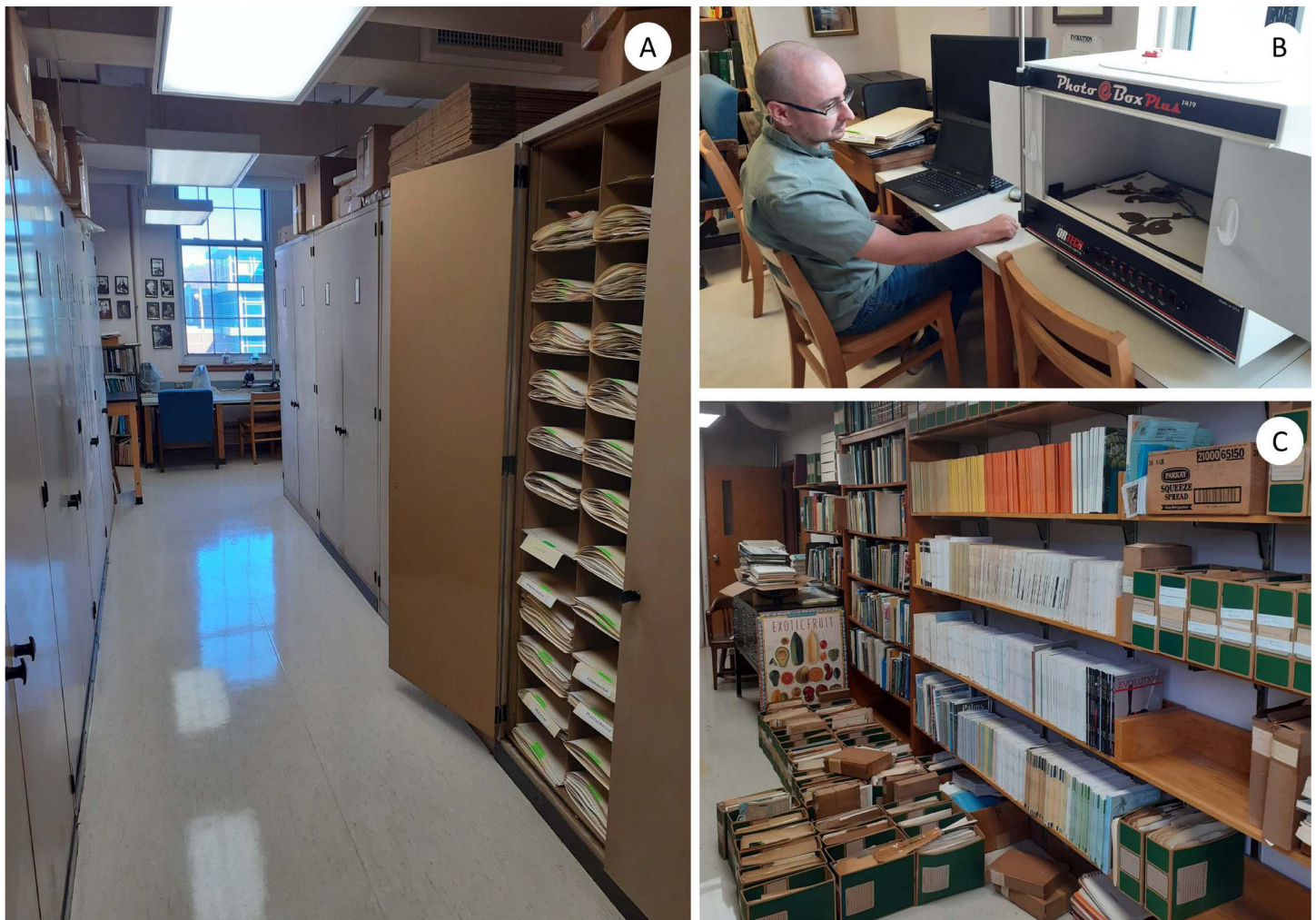


Fig. 2. (A) Marshall University Herbarium, detail of one of the cabinets. (B) Graduate student working at the digitization station. (C) Ongoing organization of the Herbarium library. Photos: Pamela Puppo.

foundation for the Checklist and Atlas of the Vascular Flora of West Virginia published by Harmon et al. in 2006. WVA is a fast-growing herbarium mainly due to collections by the West Virginia Division of Natural Resources (WV DNR), and the West Virginia Native Plant Society.

Marshall University Herbarium (MUHW)

The Marshall Herbarium (MUHW) is located on the third floor of the Science Building in the main campus of the University in Huntington, West Virginia. Founded in 1930 by Frank A. Gilbert, it is the second largest collection in the state of West Virginia with about 42,000 vascular plants (Fig. 2). MUHW also has small collections of mosses, lichens, algae, fungi, fossils, and some ethnobotanical artifacts brought from Ecuador by one of the former curators, Dan Evans (1974–2012).

Almost the entire vascular plant collection was digitized as part of the SERNEC project referenced above and is available at the SERNEC portal (<https://sernecportal.org>). This digitization was conducted by former curator Emily Gillespie (2012–2018), who was one of the Principal Investigators of that grant.

Current efforts in the Herbarium include processing its manuscript collection (see Puppo and Thompson 2021) and organizing the Herbarium library with the help of a student worker, so that it can be a space used by students.

George B. Rossbach Herbarium (WVW)

WVW is located in the Department of Biology, Christopher Hall of Science at West Virginia Wesleyan College in Buckhannon, West Virginia. The Herbarium was founded in 1949 by George Rossbach and is the third largest herbarium in the state, with 25,557 specimens databased, imaged, and online (Fig. 3). From these, ca. 90% are collections from the USA; 36% of the total are from West Virginia. Nearly 65% of all specimens were collected by Rossbach. Other important collectors include M.L. Fernald, Ruth M. Peabody, and W.L. Jepson. The Herbarium also houses Rossbach's childhood herbarium books comprised of about 1,500 specimens.

Almost the entire collection of the George B. Rossbach Herbarium is available online at Wesleyan's Pages in Time (<https://cdm16111.contentdm.oclc.org/digital/collection/p15135coll5>). This digitization effort was funded by a grant awarded by the West Virginia Division of Science in 2011 (see Gregg 2011). The expectation is that the remaining collections will be online in 2022. A floristics study of a site in SE Upshur County is currently underway, and collections will be digitized and uploaded as they are made.

Fairmont State University Herbarium (FWVA)

The Herbarium at Fairmont State University (FWVA) is composed of ca. 5,000 specimens, of which 3,500 are vascular plants and most of the rest are slime molds collected by mycologist and former curator Steve Stephenson (1973–2003). Most of the vascular plant collection is comprised of West Virginia native plants, and since Fairmont is a primarily undergraduate institution, the majority of the new collections come from what students collect as part of their botany classes.

Most of the vascular plants have been digitized and labels have been transcribed. This information is housed in an in-situ database that is available upon request by emailing the curator (Rcook11@fairmontstate.edu). This effort was made possible with the help of student workers.



Fig. 3. (A) Dr. Katharine Gregg at the George B. Rossbach Herbarium. (B) Student worker and Dr. Gregg working at the digitization station. (C) Student worker processing specimens in the work room. Photos: Katharine Gregg.

Davis and Elkins College Herbarium (DEWV)

The DEWV Herbarium is located in the Biology Department of the Davis and Elkins College in Elkins, West Virginia. It houses the West Virginia State collection of Macrofungi which comprises over 10,800 specimens, almost all from West Virginia. The vascular plant collection is composed of 2,000–3,000 specimens and is mostly used for teaching purposes.

The Macrofungi collection is fully digitized and available at the Mycology Collections data Portal (MyCoPortal), <https://mycoportal.org/>.

West Virginia Natural Heritage Program Herbarium (WVHP)

The WVHP Herbarium is located at the West Virginia Division of Natural Resources office in Elkins and is comprised of ca. 3,500 accessioned specimens (Fig. 4). It is a small herbarium with a focus on rare plants and taxonomically challenging groups. Most of these collections come from Natural Heritage Program botanists and ecologists who maintain databases on locations of rare species and habitats in the state. The Herbarium also houses many specimens collected across West Virginia by the late Dr. Eugene Hutton, a local physician and amateur botanist. In addition to accessioned collections, the Herbarium has a large backlog of vascular and non-vascular collections in need of identification or curation.

Information on accessioned plant collections is housed in an in-situ database which is available upon request by emailing the curator (james.p.vanderhorst@wv.gov).

Recent projects in the Herbarium include reporting new plant species for the state (Vanderhorst et al. 2013, 2019), and into the future, updating the Checklist and Atlas of the Vascular Flora of West Virginia (Harmon et al. 2006).



Fig. 4. Staff working at the West Virginia Natural Heritage Program Herbarium. Photo: James Vanderhorst.

Glennville State College Herbarium (GSC)

The Glennville State Herbarium (GSC) is located on the first floor of Science Hall at Glennville State College. The Herbarium was established in 2016 to bring together specimens collected by previous faculty and students. GSC collections are primarily from Gilmer County and surrounding areas in West Virginia and southern Ohio. The total collection is around 1,000 mounted specimens and over 2,000 unmounted specimens from around the state (Fig. 5).

The staff continues to work toward mounting, databasing, and digitizing the entire collection. The collection contains type and voucher material from species described by the current curator, Dr. Keene. In addition, the Herbarium maintains an active relationship with South American and Asian researchers and holds an extensive collection of Gesneriaceae seeds.

Current challenges and plans

Perhaps the main challenge to our collections is that most herbaria in our state do not have dedicated staff, only a curator who often has teaching and/or research responsibilities as well. This means that the time we can dedicate to curation activities is often limited. A second challenge that stems from this lack of time is the amount of backlog specimens in the collections that needs to be processed. This is an issue that has worsened since last year due to the COVID-19 pandemic because most of our institutions have been closed to the public, including to volunteers or students that helped with specimen mounting and processing.

Two main conclusions were drawn from this meeting. First, we need to get accurate estimates of the numbers of specimens in our collections, especially those of non-vascular plants, which in many cases is unknown. Second, we discussed the need to continue with digitization efforts so that we can make our collections accessible to a broader set of users. Some of our institutions already have a digitization station funded by a former grant that we can lend to a smaller herbarium, or smaller herbaria can have such specimens sent to a larger herbarium to be digitized.

Large databases such as SERNEC or MyCoPortal are extremely important to increase the visibility and availability of herbaria collections, but meetings at state-level are also very relevant to identify common problems and to work together on finding solutions. We are planning an in-person meeting for 2022.

Other Herbaria listed for West Virginia

There are five other herbaria listed in Index Herbariorum (Thiers, 2021) for the state of West Virginia, but we do not know the status of these collections. These are:

- Parasitic Seed Plants Herbarium (PSP), Burlington. No contact information is available for the curator of this collection, if it still exists.
- Institute of Technology Herbarium (WVIT), West Virginia University, Beckley. Former curator Lisa Ferrara retired in May 2021, and we have not been able to get in contact with the new curator.
- University of Charleston Herbarium (MVC), Charleston. Former curator, Merewyn Meadors, passed away in 2019 and we have not been able to locate the new curator.
- Salem International University Herbarium (SAWV), Salem. Former curator, Suzanne Rogers, passed away in 2018 and we have not been able to locate the new curator.



Fig. 5. Glennville State Herbarium. Photo: Jeremy Keene.

- Coopers Cove Herbarium (BCWS), Burgundy Center for Wildlife Studies, Capon Bridge. Two curators are listed for this Herbarium, Lavinia Schoene and Susan Hepler. We have not been able to contact them.

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The Vasculum 15.2
(August 2020)

The Vasculum 15.1
(January 2020)

The Vasculum 14.2
(August 2019)

The Vasculum 14.1
(January 2019)

The Vasculum 13.2
(August 2018)

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