

## CINC Herbarium Operations Manual

The CINC Herbarium is a collection of preserved vascular plant, fungal, algal, bryophyte, and lichen specimens organized via modern taxonomic standards. It serves as an invaluable information center, research tool, and basis for botanical education. The collection is available to UC students, faculty, and other qualified visitors, pending prior notification and consent of curator, Dr. Eric Tepe. Effective herbarium operation and proper usage of the collection ensures the collection's enduring value. Therefore, it is important that all herbarium visitors respectfully follow the institution's operational guidelines.

### Herbarium Policies

**Public Access**—The herbarium is open by appointment to any member of the research community or the general public. The herbarium is in the process of databasing the collection, and all databased specimen data and specimen images (where available) are accessible via the following portals:

- Bryophytes: [Consortium of North American Bryophyte Herbaria](#)
- Fungi: [Mycology Collections Portal](#)
- Lichens: [Consortium of North American Lichen Herbaria](#)
- Vascular Plants: [Consortium of Midwest Herbaria](#)
- Greater Cincinnati Flora: [Flora Finder](#)
- All records: [iDigBio](#)

**Herbarium visitors**—Visitors to the herbarium are welcome, and should schedule their visit with the curator. All visitors must follow the following guidelines:

1. Sign the appropriate guestbook (UC or non-UC) upon entering the herbarium. Multi-day visitors should sign the book once per day.
2. Herbaria contain scientific, cultural, and historical data in the form of unique, irreplaceable herbarium specimens. As such, specimens must be treated with extreme care. Do not flip specimens upside down, and do not slide specimens across each other. When handling mounted specimens, never hold a sheet unsupported, nor turn it as a page in a book. Do not bend or tear the folders or mounting sheets containing specimens.
3. No food of any kind is permitted inside the herbarium. Drinks are permitted in designated areas, and must be in covered containers. Drinks in any kind of container are never to be set on any bench or counter with specimens.
4. Do not bring any live or fresh plant material into the herbarium. The only exception is filled plant presses, which must be immediately placed inside the drying cabinet until the specimen is completely dry. All other incoming specimens, whether carried in by visitors or removed from a press, must be put

- into the ultra-cold freezer (-80°C) for a minimum of three days. This temperature kills any insect eggs, larvae, or adults that may be present on incoming specimens.
5. Keep the doors of the specimen cabinets securely closed except when removing or returning specimens.
  6. Report any live insects, insect damage, or insect excrement found in the collection to any member of the herbarium staff.
  7. Creative use of herbarium specimens (DNA extraction, chemical analysis, etc.) is encouraged, but destructive sampling (e.g. removal of any plant tissue from a specimen) may only be conducted with explicit permission by, and under supervision of the curator. Permission for destructive sampling of loaned material may be granted following written description of the project, how much material will be needed, and specifically what the researchers wish to remove.
  8. Do not attempt to file specimens without assistance. A specimen that is misfiled is a specimen that is lost!
  9. Specimens and reference books may not be removed from the herbarium unless given permission by the curator.
  10. Notify the curator of any specimens in need of repair.

**Loans**—Loans are made to institutions, not to individuals and are available to professionals and students at other institutional herbaria, and to non-institutional herbaria at the discretion of the curator. Loan requests must be made by the curator of the herbarium. Loan requests should include name and position of the researcher, a description and goals of the research, a list of taxa requested (including synonyms), and the geographic focus of the study. Loans are granted for the period of one year, and may be extended via written request to the curator. Material on loan should be treated with utmost care and should be stored under safe conditions in standard herbarium cabinets, and may not be removed from the receiving institution without express permission of the curator of CINC. Upon receipt of loaned material, specimens should be counted, and the “Return This Copy to the Curator” copy of the loan paperwork should be sent to CINC, including any discrepancies in number of specimens or any apparent damage that may have occurred during shipment.

Specimens should be annotated prior to their return to CINC; specimens that cannot be identified with certainty should be annotated as far as possible, and annotations may include qualifiers (e.g., ‘cf.’, ‘aff.’ ‘similar to...’, etc. or notes (e.g., ‘...similar to xxx, but differing in xxx character...’).

Requests for destructive sampling are encouraged, and may be permitted at the discretion of the curator. Requests for destructive sampling should include a description of the project, including goals of the sampling, methods, and detailed description of the

type and quantity of material to be removed. All sampled specimens must be annotated with the type and purpose of the material removed and, if available, with a reference to the data or published results of the sampling.

Loans should be carefully and securely packaged for return to minimize the possibility of damage to specimens during shipment. When possible, use the same packaging in which the loan arrived. Paperwork for the return shipment should be included in the package, as well as sent separately via mail or email.

***Specimen Acquisition and Accessioning***—Herbaria grow in size and value through the acquisition of new specimens. In order for the herbarium to serve as an accurate scientific tool, it is important for this growth to broaden the depth and breadth of the collection. Specimens are obtained through gifts, purchases, or exchanges; exchange of specimens occurs between two research institutions with the goal of enriching each institutions' collection. Specimens received as gifts frequently come from student or faculty collections; gifts are encouraged by collectors as long as the specimens are accompanied by accurate label data. Specimens may be added to the collection with consent of the curator, and specimens are considered accessioned when properly mounted on archival sheets or contained in an archival packet with an affixed label complete with the minimal required information (see “Specimen Processing” below), and once it is registered by the curator. Collectors are encouraged to consult with the curator prior to making collections.

***Specimen Processing***—Processing describes the method by which a specimen is prepared for addition to the CINC herbarium collection. Accessioning is the recorded addition of a new specimen into the collection; each specimen within the collection is assigned a unique accession number (a CINC barcode), and barcode numbers are assigned sequentially, so accessioning serves to maintain an accurate count of the specimens in the collection. Once accessioned, specimens are the property of the University of Cincinnati.

A label must accompany every specimen in the herbarium. The label contains the name of the specimen and information relating to its collection. This information is recorded by the collector in the field and is later typed onto a permanent label. A specimen without its associated label data is worthless. Due to the variation of type and quantity of observations made by the collector at the time of collection, there is no set format for labels. However, minimum requirements include the locality (country, state, county, address/landmark, etc.), collector's name, and collection date. Additional, and preferred, data may include specimen name (genus, specific epithet, author), locality, habitat, collector, associated collectors, date, collection number, determiner (the individual who positively identified the specimen), and acknowledgement of expedition, project, or funding that made the collection possible. The common name or family of the specimen may also be noted. Thorough collectors may also include information not apparent from the preserved specimen itself, such as observations concerning abundance, altitude, size, color, odor, or associated species in the habitat. Older specimens may require updated label information when changes have been made to the genus and/or specific epithet. In this case, it is necessary to include an annotation label containing information such as the updated name, date of the amendment, and the name of the

individual who determined the correct revision. Such labels are attached to the specimen sheet by the researcher who makes the change, or by the curator.

A useful specimen must be properly dried and rid of any potential pest before it may be prepared for addition to the collection. Vascular plants and macro-algae are mounted on 11.5” x 16.5” sheets of archival mounting paper. Non-vascular plants, including algae, bryophytes (hornworts, liverworts , and mosses), fungi, and lichens, are stored in archival paper packets or small boxes.

***Permitting***—The herbarium expects that all specimens entering the collection to have been collected legally. As such, all collectors working with the herbarium should have permits granted by the appropriate authority, whether collections are made domestically or internationally, whenever and wherever permits are required. Copies of permits should accompany deposition of species, which will be permanently kept on file in the herbarium. CINC does not issue permits, nor does it have the resources to assist collectors with acquiring permits.

***Deaccessioning***—Specimens may be deaccessioned by the curator if they are determined to be too damaged or of insufficient quality to be scientifically useful, or if they represent redundant, low-quality collections of a given taxon from a single locality. All deaccessioned specimens must be registered by the curator.