University of Georgia Herbarium [GA]
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UNIVERSITY OF GEORGIA HERBARIUM (GA)
Floristic Study Agreement

A herbarium is a "library" of specimens that are references for identification, locations, habitat, abundance, and flowering/fruiting periods. Herbarium specimens are loaned and traded ("exchanged") with other herbaria worldwide. The University of Georgia Herbarium [GA], one of the largest herbaria in the southeastern United States, comprises over 279,000 sheets of vascular plants with emphasis on species from the Southeast, particularly Georgia.

Many areas of the state, however, have been poorly collected. Floristic project collections are essential for expanding our holdings from these underrepresented regions; in addition, duplicates from these studies are a good source for exchange material. Certain procedures are necessary for proper collecting, handling, storing, and labeling the voucher material. Curators of herbaria have the prerogative to reject unsuitable specimens. These guidelines are designed to help our operations run smoothly, to use funds efficiently, and to prevent unnecessary storage of scientifically useless, unlabeled, and unsorted study sets of specimens left behind at GA by graduated students (and other researchers).

VOUCHERS

☒ **Students must have their vouchers properly labeled and sorted before graduating.**

- **Definition**. A voucher -- literally "a piece of evidence" -- is an essential component of the scientific method. *All* published research on organisms should be vouchered. For floristic studies, vouchers are pressed plants deposited in a recognized herbarium for future reference. These specimens are physical proof validating the presence of the plant in a specific locality on a certain date. In addition, voucher specimens cross-reference changes in identifications (and taxonomic judgment) to previous research.
- **Policy.** Students in the Plant Biology Dept. at the University of Georgia are required to deposit a set of their voucher specimens in the GA herbarium. [Although not collecting as extensively as those participating in floristic projects, students undertaking revisionary studies (and who request loans) usually also have their own collections to prepare for deposit in the home herbarium and for exchange to other herbaria. Likewise, students participating in population studies should provide at least one representative specimen from each population.]

PLANT COLLECTING POLICIES

- **Permits.** A variety of regulations pertain to plant collecting -- whether for scientific, commercial, or personal purposes. These laws and regulations may be complex and interpretation of them may vary. Researchers must obtain collecting permits from appropriate agencies *before* beginning a project. Consult the herbarium staff for assistance in contacting the agency responsible your study site.
- **Ethical collecting.** The activities of the collector should not pose a significant threat to the survival of endangered wild species, habitats, or ecosystems (i.e., do not collect a population to extinction).
- **Safety.** Collecting with at least one other person is recommended, especially for remote sites.

SPECIMEN PREPARATION.
For more details and helpful hints on successful specimen preparation, see the Curator and also "Field techniques used by the Missouri Botanical Garden".

- **Field notes.** A field book is an essential component of proper scientific methodology. Notes (see label data below) should be entered in a fieldbook at the time of collection. Each collection (i.e., gathering of a plant specimen) should be assigned a collection number.
- **Pressing.** Specimens are pressed in a plant press, comprising wooden frames, straps, cardboard ventilators, blotters and folded newspaper. A press must be kept tight, and the plants thoroughly dried. For ease in sorting later, the collection number, tentative name of the plant, collector name and date should be written legibly along the vertical right-hand margin on the outside of the newspaper.
- **Plant material.** Ideally, each specimen should consist of a stem (or branch) with attached leaves, and if possible, flowers and/or fruit; herbaceous specimens should also include roots/rootstock. Generally, sterile (nonflowering or -fruiting) specimens are not acceptable. A plant specimen should be pressed flat to fit a herbarium sheet, ca. 11" X 16" -- larger specimens may be folded or cut into sections. To fill a herbarium sheet, press multiples of smaller plants together. If ample material is available, a enough material for a minimum of three herbarium sheets should be pressed for each collection number.
- **Identification** requires a thorough literature review; consult with herbarium personnel for guidance on appropriate references for your region.

LABELS

⌧ **Students must have their vouchers properly labeled and sorted before graduating.**

See the Curator and https://www.floridamuseum.ufl.edu/herbarium/methods/vouchers/for more details on specimen and label preparation.

- **Label data**. A plant specimen is incomplete and scientifically useless without accurate label data. A label should include the following:
  - **Scientific name**. Genus, specific epithet, authority, and infraspecific information.
  - **Detailed location**. Country, state or province, county or municipality, and a description of the locality in reference to roads, road junctions, mile markers, and/or distances from cities and/or towns. Other helpful information: latitude/longitude; section/township/range; elevation; and/or readings with Global Positioning System (GPS).
  - **Habitat and associates**: The type of plant community and associated plant species.
  - **Habit**. Description of the plant form (e.g., mature tree, sprawling shrub, scandent vine, erect herb) and height
  - **Frequency**. Rare, occasional, frequent, common.
  - **Description**. Particularly plant characteristics not evident from the sample (e.g., drooping branches; leaf orientation) or other features possibly lost in drying (e.g., flower and/or fruit color or aroma).
  - **Collector name.**
  - **Collection number.**
  - **Date of collection.**
  - **Other collectors** present with the collector, cited as "with."
  - **Determiner** of the scientific name. Cited as "Det." the name of the person who identified the plant.
- Prepare multiple labels for all duplicate specimens.

Examples of labels: [**DO NOT PUT LINES AROUND THE ACTUAL LABELS!!!**]

Herbarium of the University of Georgia [GA]
Athens, Georgia USA

PLANTS OF GEORGIA

Apios americana Medik.

Clarke Co.: Athens: Along Hwy 10 (Perimeter Loop), on e side of hwy, 0.5 mi. s of exit for Hwy 78/10 Business Route. Alluvial floodplain forest. Plants twining over shrubbery near hwy. Legumes green.

Coll. Wendy B. Zomlefer 1005 8 Oct. 2000
with David E. Giannasi

Voucher for molecular study by Anne Bruneau.

Herbarium of the University of Georgia [GA]
Athens, Georgia USA

CULTIVATED PLANTS OF GEORGIA

Ulmus parviflora Jacq.

CLARKE CO.: Athens; planted on UGA campus, behind Plant Sciences Building. Large tree, DBH ca. 16 inches, branches drooping. Fruits reddish. Voucher for chemical studies.

David E. Giannasi 89-7 19 Oct. 1989

Herbarium of the University of Georgia [GA]
Athens, Georgia USA

CULTIVATED PLANTS OF GEORGIA

Callisia graminea (Small) G.C. Tucker

CLARKE COUNTY: Athens; cultivated at University of Georgia Botany Dept. Greenhouses. Original source: Archbold Biological Station, Sebring, Florida; coll. S. Bergamo.

Stephanie Bergamo 510 20 July 1999
Voucher for molecular study on *Callisia*.

Vascular Plants of Georgia
University of Georgia Herbarium

***Calopogon pallidus* Chapman**
<Orchidaceae>

LIBERTY CO.: Ft. Stewart Military Installation, Grid 245431, E-10 training area, 1.5 mi. w of intersection with Ft. Stewart 7 and Ft. Stewart 10. Margin of cypress stand; sandy loam, last burned Nov. 1993. Associates*: Polygala lutea, Sisyrinchium sp., Lyonia mariana, Lachnocaulon vernus*. Tepals fushia pink.
"Pale grass-pink"
Dorset W. Tapnell 375C 3 May 1994

PLANTS OF BORNEO
SHEET 1 of 3

Artabotrys suaveolens Blume
Det. J.C. Regalado, 1987

Malaysia. Sabah. Tambunan District: Crocker Range, Km 64.5 on Kota Kinabalu - Tambunan Road. 5°46'N, 116°21'E. Elev. 1220 m. Montane dipterocarp forest. Crocker Formation. Woody climber on roadbank.

John H. Beaman 7178 9 October 1983
With: Reed S. Beaman and Teofile E. Beaman

Herbaria of Michigan State University (MSC) and Universiti Kebangsaan Malaysia, Sabah Campus (UKMS)

PROJETO FLORA AMAZÔNIA
Instituto Nacional de Pesquisas de Amazônia
The New York Botanical Garden

Rhabdodendron amaconicum (Spr. ex Benth.) Huber

Mun. Óbidos, Pará. 91 km de Oriximiná nos Campos de Ariramba, entre rio Jaramacaru e Igarapé Mutum. Aprox. 01°10'S, 55°35'W. Campina aberta, solo areno pedregoso. Arbusto de 4 m de altura. Frutos com cálice esverdeados. Fruitos imaturos verdes.
C.A. Cid Ferreira, 9749 04 DEZ 1987

Plantas coletadas com apoio de ENGE-RIO e Mineração Rio Norte, com participação de C.A.C. Ferreira, C. Farney de Sá, G. Martinelli, E. Soares, C.D.A. Mota de E.F. Batista.

SPECIMEN STORAGE AND HANDLING

- **Assigned space.** Specimens collected by graduate students are the property of the University of Georgia Herbarium; storage of personal collections in the herbarium is not allowed. Students are required to store and work on their specimens in the herbarium, not at their home. Specimens will be stored properly, i.e., in an airtight steel herbarium case with proper fumigation. Students and other researchers will be assigned herbarium cabinet space.
- **Protocol**. Unmounted material should be inserted on the cabinet shelf with a piece of cardboard underneath it. Label the shelves in your cabinet (e.g., "Duncan unlabeled vouchers 1617-1630"). Keep herbarium doors closed as much as possible, especially when taking specimens away to a table for examination. Return all material to a cabinet the same day.
- **Insect damage control**. Please report immediately any evidence of insect damage. The specimens should be regularly monitored for infestations

SORTING SPECIMENS INTO SETS

Students must have their vouchers properly labeled and sorted before graduating.

- **Policy**. One full set of specimens for student floristic projects must be deposited in the University of Georgia Herbarium. **Allot ample time for this time-consuming sorting procedure**.
- **Definition**. A set is a representative batch of specimens from a project/collection -- specifically at least one of each species (not one of each collection number).
- **Procedure**. See the Curator for practical ways to sort your specimens (one specimen per newspaper) into sets. The most logical starting point is alphabetically by family, genus, and species. The first set should have at least one representative of each species. However, more than one specimen of the same species may be retained for the first set in the following situations: both flowering and fruiting specimens are represented by separate sheets/collections, various habits; or different counties.
- **Labeling**. Labels should be trimmed and inserted in the specimen newspapers. Every duplicate sheet of a collection number should also have a label. The plant names should be clearly written on the outside margin of the newspapers.
- **Exchange sets**. The first (i.e., best and most complete) set is usually deposited at GA. Additional sets are typically exchanged (traded) with other herbaria. Sometimes certain governmental agencies responsible for the study site require a set for their herbaria. The herbarium staff appreciates suggestions about preferred institutions for the duplicate sets.

ANNOTATION

Researchers using the herbarium for floristic studies are likely to discover incorrectly identified specimens in the collection. We appreciate annotations -- small labels that update the determinations on the label.

- **Definition**. Annotation slips are small labels that update the determinations and/or cite the project for which specimens were examined. Do not write on the specimen sheet, specimen label, or someone else's annotation slip.
- **Composition**. A proper annotation slip is composed of acid-free paper scripted with *permanent ink* (hand- or typewritten). *Do not* use ballpoint pen, felt-tip pen, or pencil (all impermanent). The approximate dimensions are approximately 1" X 4 ¼" but may vary depending on the amount of information.
- **Information**. The annotation slip should include at least the accepted name of the taxon (including the authority), the investigator name, and the date (at least the year) of the identification. Other types of information include: our herbarium acronym (GA) and special comments/additional information about the specimen.

Examples of annotations:

Zigadenus glaberrimus Michx.

Det. Wendy B. Zomlefer, [GA] Aug. 2000

UNIVERSITY OF GEORGIA HERBARIUM [GA]

Lyonia fruticosa (Michaux) G. S. Torrey

Det. Wilbur Duncan 1978

Flora of North America
***Zigadenus glaberrimus* Michx.**

Wendy B. Zomlefer, GA Nov. 2000

- **Placement**. Show the Curator your annotations before you affix them. The annotation slip should be affixed to the herbarium sheet in a blank space as near as possible to the original label or most recent annotation. Standard practice is placement above the label and flush with the right side of the sheet or to the left of the label. If other annotations are present, the new one should be positioned above the most recent, unless it will not fit or the most recent is in a very unusual position. If blank space on the sheet is insufficient, an annotation may be glued only at one end and overlap mounted plant material.
- **Attachment**. A white glue, DucoCement or any other permanent glue should be used to attach the annotation slip. Do not use rubber cement (impermanent). Glue should be applied only to each or one end of the annotation.

PUBLICATIONS

A complimentary copy of all theses, dissertations, and published papers relating to the specimens borrowed should be donated to the University of Georgia Herbarium.

CITATION OF SPECIMENS IN PUBLICATIONS

- **Standard herbarium acronyms**, listed in *Index Herbariorum* [https://sweetgum.nybg.org/science/ih/], are used in specimen citation in publications. The University of Georgia Herbarium is cited as GA.
- **Institutions with multiple herbaria**. Some single institutions actually administer specimens for separate herbaria. Examples: Harvard University Herbaria [Oakes Ames Orchid Herbarium (AMES), Arnold Arboretum (A), Gray Herbarium (GH), the Economic Herbarium of Oakes Ames (ECON), New England Botanical Club (NEBC), and the Farlow Herbarium of Cryptogamic Botany (FH)]; Botanical Research Institute of Texas (BRIT, SMU, VDB), University of Texas (TEX, LL), University of Alabama (ALU, UNA), and California Academy of Sciences (CAS, DS).

Graduate Student Agreement:

☒ **1.** I have read and agree to comply with the University of Georgia Herbarium guidelines outlined in "Synopsis of GA Herbarium Policies" and "Collections Use Policies."

☒ **2.** I agree to obtain proper collecting permits and practice ethical collecting techniques.

☒ **3.** I acknowledge that providing properly prepared vouchers are part of my graduate project, as detailed in the attached "Floristic Study Agreement." I understand that ***I will not be allowed to graduate until all voucher specimens from my study are properly labeled and sorted for deposit at GA***. *Failure to comply will prevent completion of my degree*.

_____
Printed Name

_____ _____
Signature Date

_____ _____
Thesis Advisor Signature Date