University of Florida's Digital Library Center Demonstration Disk from 2001

These pages represent the materials contained on the University of Florida's Digital Library Center Demonstration Disk from 2001. The technology used for that disk is no longer supported, so these files are the best approximation of the content from those files. Like the required "Internet Explorer 5.0 or higher" some of the materials cannot be viewed as they were originally created outside of the technologies for which they were intended.

Thank you for loading
The DIGITAL LIBRARY CENTER's
Demonstration Disk

Requires Internet Explorer 5.0 or higher

Please select one of the following options:

First time?
Load the MrSID Browser PlugIn, then
Load the DjVu Browser Plugin.

Projects of the Digital Library Center
at the University of Florida's Smathers Libraries
FACRL Presentation (October 2001)

Herbarium Specimens
Florida Museum of Natural History. Herbarium.

Antique Florida Maps Collection
Department of Special and Area Studies Collections.

Children's Literature
Department of Special and Area Studies Collections.

Ringling Collection (Theatre)
Belknap Collection for the Performing Arts.

Jackson Henson MacDonald Scapbook
University of Florida Archives.

Antique Maps

TECHNOLOGY FOR IMAGING

Digitization

Antique maps contain significant detail, engraved in fine lines, many no greater than a hair's width. High resolution imaging technology is required to adequately capture this detail.

Early in the history of map digitization, institutions selected among one of two methods. Either they scanned maps in parts, later stitching the images together, or, they created a 105 mm color film surrogate, later digitizing the surrogate. The former produces an image which has noticeable sections. The best way to digitize an oversized image is all at once. And, the latter method, while it produces images of excellent quality, doubles the cost of digitizing maps.

The University of Florida's Digital Library Center now uses a third method, imaging by use of a high resolution digital planetary camera. The Center's camera, a ZBE Satellite (*image to the right*), is to digital photography what the microfilm camera was to analog photography. The camera's optics are provided by a Rodagon 135 mm (f 1:5,6) large format enlarging lens and a PhaseOne PowerPhase FX digital camera-back. Additional Rodagon and Nikon lenses allow high resolution image capture of the tiniest maps as well. The digital camera-back (*image to the left*) has the look and function of a studio-camera's analog camera-back; a charged-couple device (CCD) replaces film. The PowerPhase FX employs a 10,500 x 12,600 pixel CCD chip that enables image captures of 380 MB (24-bit/*true color* sRGB uninterpolated). The resolving power of the PowerPhase FX far exceeds the native hardware capacity of the CCDs found in flat-bed and most film scanners.

Additional hardware and software used to create these images includes:

- MacIntosh Apple G4 for imaging and image calibration;
- Windows 2000 workstation for image transfer and secondary image processing;
- Adobe Photoshop software for image editing,
- JASC Paintshop Pro and Cerious ThumbPlus software for digital restoration; and
- LizardTech MrSID software for image compression.

The digital imaging process generates an uncompressed 24-bit color TIFF electronic master that is archived as imaged. The TIFF master is saved in the sRGB (standardized Red/Green/Blue) color-space, which is optimized for electronic display. Archived images may later be processed into the CMYK (Cyan/Magenta/Yellow/Black) color-space for commercial printing or manipulated using digital restoration techniques.

Distribution

Creating an accurate digital master is only half the battle. Early in the history of large-format digitization, sending a map via the Internet was like putting a freight-train on an Interstate highway. Large files had the capacity to slow all Internet transport along the route to the file's destination. At the file's destination, meanwhile, the wait for a viewable image could stretch into hours. With higher resolution and higher color fidelity (24-bit/*true color*), the size of digital map files has grown. Today, though Internet band-width has grown to meet the shipment of more and larger files, a digitized map still has the capacity to bring the Internet to a crawl.

In the past, files were *downsampled* to the resolution of the user's monitor; file size was reduced accordingly. And, individual files could be sent via the Internet without appreciable delay. While fine for post-card size maps, downsampling reduced average and oversized maps to little more than pretty pictures. The detail that had been so carefully captured had been lost. Using the digital map as the original might have been used was impossible.

COMPARE THE DOWNSAMPLING METHOD WITH THE CENTER'S APPROACH

TRADITIONAL APPROACH

Click to see traditional downsampled presentation

NEW APPROACH

Click to see vector graphics presentation

The Center's new approach uses *vector* rather than *raster* image technology. In lay terms, the traditional approach displays a one-size-fits all image (*raster technology*), usually scaled-down to the common denominator of what the average user can see in one screen image. The new approach, however, displays a zoomable image (*vector technology*), provided in the form of SID images. SID images use a vector compression format that reduces file size by up to 100 times. While some of the TIFF digital master's detail is lost, the loss is fractional. Place names can be read. Every engraver's mark can be seen. And,

the application of color can be studied. Better yet, this enriched version can be downloaded in only slightly more time than required for download of the traditional version.

DIGITAL RESTORATION

Assessment

We don't mind saying that our antique maps show their age in person. Some of their papers have yellowed. Others wear a fine layer of accretion sometimes laid down in finger prints, sometimes transferred from the object upon which they were laid or that rested upon them. Sometimes, the appearance of age is a fold or the discoloration of atmospheric contaminants deposited by humidity's intrusions. Some, even one on this CD, may have been witness to the hardships of war. While in very-good to fine condition and skillfully preserved by conservators, the maps one sees today in the University of Florida's collections have lost the vibrancies of their youth.

Digital technology allows us to restore maps to something their original and intended appearance. Unlike traditional restoration, it does not risk the health and longevity of the original and any technique can easily be reversed or repeated. Digital restoration techniques can be applied easily and quickly. And, both digitally restored and as-found version can be displayed simultaneously, depending upon the researcher's requirements. We have decided to present digitally restored copies on this CD in order to present the maps as they, likely, were intended to be presented.

The Restoration Process

Digital as traditional restoration begins with an understanding no less than three facets:

- Period methods of paper-making, engraving, printing and coloring;
- Current and intended uses of the map; and
- How the map came into its current condition.

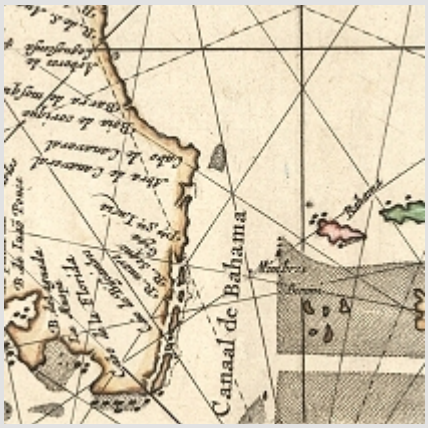
Much of the restoration process involves getting from point A, *period methods*, to point B, *intended uses*, without misrepresenting the original. We have made no attempts to correct imperfections either of the original creation process of condition other than to reverse the effects of aging. Each of the maps in our care has aged. The effects of aging are obvious, if not on first glance, in comparison to restored or pristine papers contemporary to each of the maps. Natural indications of aging are fading, yellowing, and accretion.

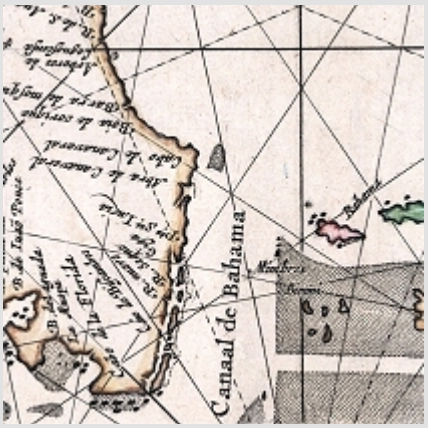
DIGITAL RESTORATION

The Restoration Process
Accretion & Color Balancing

Digital as, again, tradition restoration begins with the removal of accretion, somewhat misleadingly referred to as "*color balancing*" or "*fade correction*" in most image editing software. Examples of the transformation follow.

***AS-FOUND* IMAGE** ***COLOR BALANCED* IMAGE**





While removal of accretion restores original color balance, the process also makes more evident the physical characteristics of the original. In tests using 17th century manuscript maps, *chain lines*, evidence of a traditional hand paper-making process, can be seen clearly. In the example below, color balancing makes more obvious paper-fiber evidence. Such evidence affords researchers who must examine originals the ability to pre-select in advance of travel.

As-Found Image **Color Balanced**

200% enlargement

One of the dangers of color balancing is over-correction. The quality and reflectance of early papers was inconsistent and, at times, uneven. Color balance requires knowledge of how papers originally looked or the amount of light they originally reflected, that is, how white they when printed. It would be inappropriate, for example, to "correct" a map printed on Kraft paper to appear as though it had been printed on bleached cotton paper. Color balancing is fraught with the dangers of assumptions. TIFF (*camera*) masters are reproduced from originals, with balanced lighting and using standardized color targets, and archived without alteration to ensure that errors of judgment may be corrected easily.

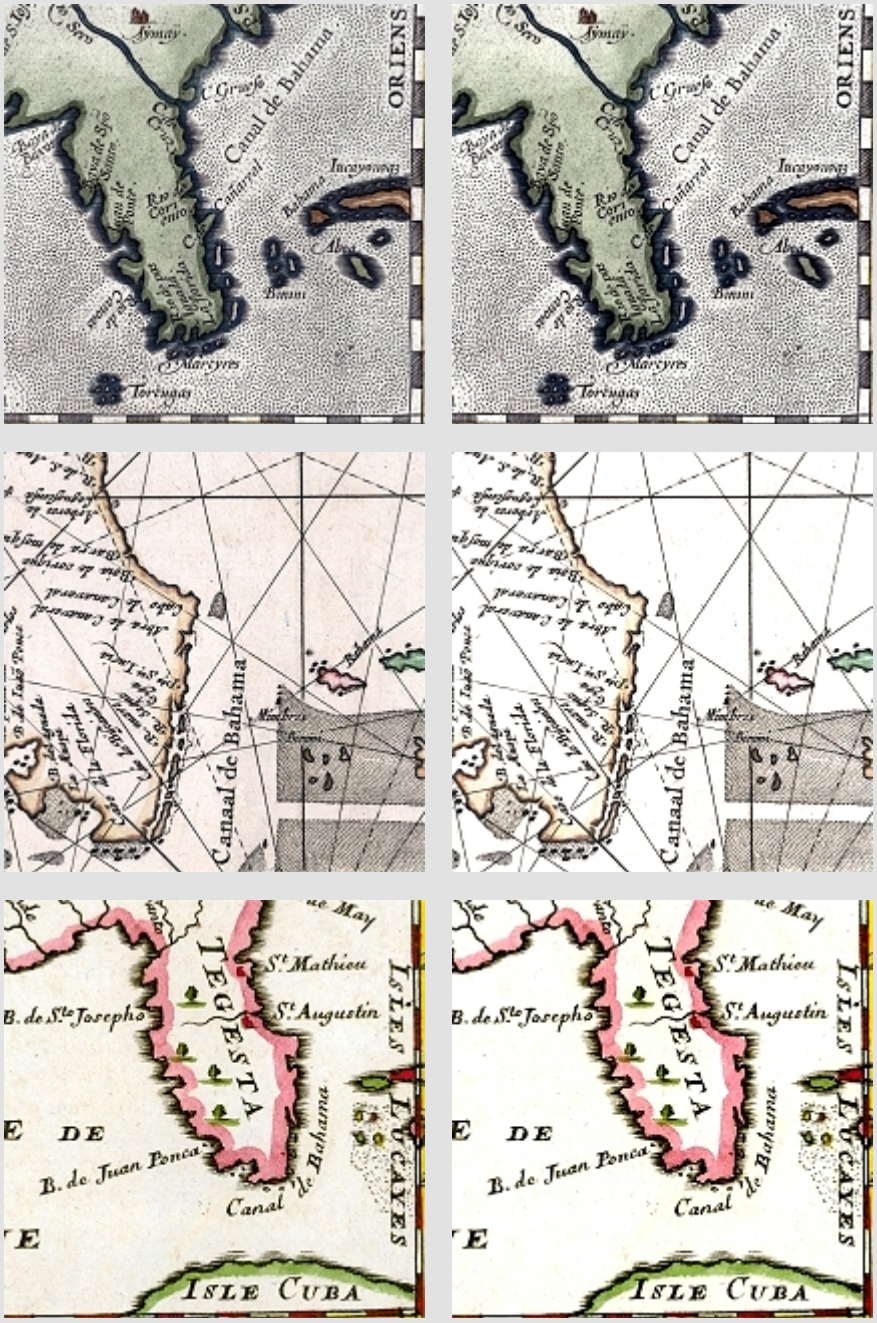
DIGITAL RESTORATION

The Restoration Process

Yellowing & Contrast Correction

To correct the effects of yellowing, digital restoration employs a technique frequently used in microfilming for preservation. Because microfilming is a bi-tonal (i.e., black & white) or gray medium, microfilm photographers think of yellowing an issue of contrast. And, contrast can be enhanced by increasing the amount of light on the object. Remaining discoloration can be further mitigated by increasing the "lightness" of the digital map image. Examples of this transformation follow:

***COLOR BALANCED* IMAGE** ***CONTRAST CORRECTED* IMAGE**



As in microfilming, the danger of this technique is the same. Images given too much light begin to lose detail. The following illustration of the effect of increasing lightness on paper fiber evidence illustrates the danger.

As-Found Image	Color Balanced	+5 Light Gain

Any given map will be appreciated and studied for any of several facets: geographic information; engraving and printing; color and coloring methods; and even paper manufacture. The University of Florida acknowledges that researchers of paper manufacture and similar physical characteristics will ultimately find digitized maps to be inadequate substitutes for the original. Their research will require visual inspection of the original. With regard to the creation of a digital distribution copy, however, the effect of lightness on paper fiber evidence is a kind of miner's canary. Paper fiber evidence, often, is lost just prior to loss of engraver's marks and meaningful color information. The application of the technique rarely exceeds a 5 to 10 point numeric gain. If fade correction is not required, contrast correction through the application of lightness may not be applied.

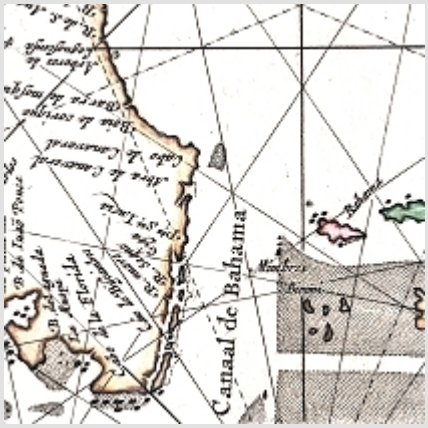
DIGITAL RESTORATION

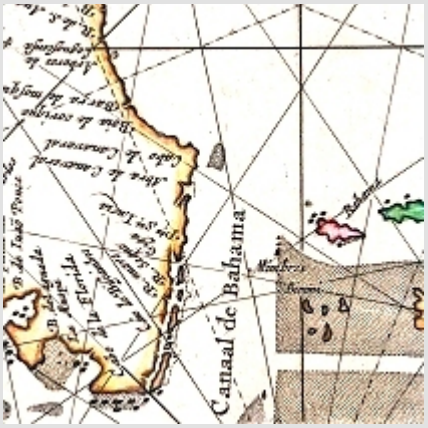
The Restoration Process

Fading & Color Saturation

Colors applied to antique maps at or near the time of printing were vegetable or mineral rather than synthetic chemical dyes. Vegetable dyes, in particular, are not light-fast; they fade with exposure to ultra-violet waves in light. Both vegetable and mineral dyes are sensitive to pH; either the introduction of atmospheric contaminants or the release of acids from papers may offset a map's original pH value and alter the natural hues of colors. Colors effected by these conditions generally become more less vibrant or less saturated. In digital restoration, fading is corrected through moderate changes in hue and color saturation values. Examples of this transformation follow:

***CONTRAST CORRECTED* IMAGE** ***COLOR SATURATED* IMAGE**



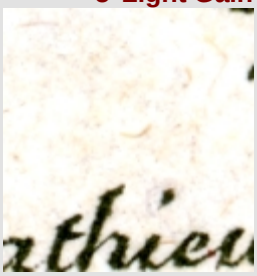


The obvious hazards of this technique are misjudgment of original color values and over-correction. Unintended color shifts is a secondary hazard. In the second example above, increased saturation better defines the Florida peninsula but ink defining the shoals of the Bahamas appear to have taken on the effect of aged black ink; it has become brown. In the first and third examples above, yellowing is reintroduced as the background color is shifted. Background color shift is illustrated using our paper fiber image samples.

***CONTRAST CORRECTED* IMAGE** ***COLOR SATURATED* IMAGE**

Color Balanced


+5 Light Gain




+10 Light Gain


+15 Light Gain


+20 Light Gain


These effects can be mitigated or corrected as illustrated below, but every correction risks moving the image from the map maker's original intent. This technique is applied sparingly.

COLOR SATURATED* IMAGE** ***BACKGROUND CORRECTION

Ortelius, Abraham.
La Florida. Auctore Hieron Chiaves, 1584.
Accession Number: M2.1584.001.1997.0966

Goos, Pieter.

Paskaerte van Westindien de Vaste Kusten en de Eylanen, 1669.
Accession Number: M2.1669.001.1997.1399

Mallet, A. M.
Florida De L'Amerique, 1683.
Accession Number: M1.1683.001.1997.0784

Mount, Richard.
Chart of the Bay of Mexico, 1708.
Accession Number: M2.1708.001.1997.0821

Valck, Gerard.
Insulae Americanae in Oceano Septrentrionali, cum terris adiacentibus, 1710.
Accession Number: M2.1710.001.1997.1928

Aa, Pieter van der
Floride suivant les Nouvelles Observations, 1729.
Accession Number: M1.1729.002.1997.1944

Homann, Johann Baptist

Mapa geographica completens Indiae Occidentalis. Includes d'Anville's Carte des Isles de Amerique, 1740.

Accession Number: M2.1740.001.1997.1952

Delisle, Guillaume

Carta Geografica della Florida, 1750.

Accession Number: M1.1750.001.1997.0152

Homann, Johann Baptist

Amplissimae regionis Mississipi, etc., 1763

Accession Number: M2.1763.001.1997.0165

Homann, Johann Baptist

Regni Mexicana seu Novae Hispaniae, Ludovicianae, No. Agliae, Carolinae, Virginiae, 1763.

Accession Number: M2.1763.002.1997.1909

Romans, Bernard

Seat of War in the Southern British Colonies, 1776.
Accession Number: M2.1776.001.1997.0121

Kitchen, Thomas.
Map of the U.S. in North America with the British, French and Spanish dominions, 1783.
Accession Number: M2.1783.002.1997.1930

The University of Florida HERBARIUM

The University of Florida Herbarium is a unit of the Department of Natural History of the Florida Museum of Natural History. The herbarium is affiliated with the Institute of Food and Agricultural Sciences, Florida Agricultural Experiment Station, Florida Cooperative Extension Service, Department of Botany and the Department of Plant Pathology. Dr. Norris H. Williams is Keeper of the Herbarium.

The herbarium and the associated paleobotanical collection have combined holdings of approximately 1/2 million specimens. The collections include:

- Vascular Plants - Florida, the southeastern United States coastal plain, West Indies, esp. Haiti
- Mycological (Fungi) - Florida fungi, especially agarics and polypores
- Bryophytes and Lichens - Florida and tropical areas, especially Costa Rica, Venezuela and Brazil
- Paleobotany (affiliated collection) - international, ranging from the Proterozoic to the Pleistocene
- Wood - worldwide, especially tropical
- Herbarium Library (search)

The FLAS acronym is the standard international abbreviation for the University of Florida Herbarium. It is derived from the herbarium's early association with the Florida Agricultural Experiment Station.

The following Internet hot links will connect you to the major web pages related to the Herbarium specimen collections as well as to collections with links to Herbarium images:

Type Specimens in the University of Florida Herbarium (A PALMM Collection)

Roving Naturalists' Pilot Project (A PALMM Collection)

Linking Florida's Natural Heritage (A PALMM Collection)

University of Florida Herbarium (FLAS)

Florida Musuem of Natural History

TECHNOLOGY FOR IMAGING

Digitization

Herbarium specimens contain significant detail, much of it no greater than a hair's width. High resolution imaging technology is required to adequately capture this detail.

Early in the history of specimen digitization, institutions selected among one of two methods. Either they used digital cameras, or, they created a 105 mm color film surrogate, later digitizing the surrogate. Images created, but particularly those created using digital cameras, were of poor quality. Digital cameras were placed frequently into the hands of curators who had little or no experience with photography, lighting and exposure methods. But perhaps most detrimental to quality, these early and often hand-held digital cameras lacked the resolution of professional digital cameras. The surrogate method, often contracted to professional photographers, while it produced images of excellent quality, doubled the cost of digitizing specimens.

The University of Florida's Digital Library Center now uses a third method, imaging by use of a high resolution digital planetary camera. The Center's camera, a ZBE Satellite (*image to the right*), is to digital photography what the microfilm camera was to analog photography. The camera's optics are provided by a Rodagon 135 mm (f 1:5,6) large format enlarging lens and a PhaseOne PowerPhase FX digital camera-back. Additional Rodagon and Nikon lenses allow high resolution image capture of the tiniest specimen details as well. The digital camera-back (*image to the left*) has the look and function of a studio-camera's analog camera-back; a charged-couple device (CCD) replaces film. The PowerPhase FX employs a 10,500 x 12,600 pixel CCD chip that enables image captures of 380 MB (24-bit/*true color* sRGB uninterpolated). The resolving power of the PowerPhase FX far exceeds the native hardware capacity of the CCDs found in flat-bed and most film scanners and digital cameras alike.

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sRGB (standardized Red/Green/Blue) color-space, which is optimized for electronic display. Archived images may later be processed into the CMYK (Cyan/Magenta/Yellow/Black) color-space for commercial printing.

Distribution

Creating an accurate digital master is only half the battle. Early in the history of large-format and high resolution digitization, sending a specimen image via the Internet was like putting a freight-train on an Interstate highway. Large files had the capacity to slow all Internet transport along the route to the file's destination. At the file's destination, meanwhile, the wait for a viewable image could stretch into hours. With higher resolution and higher color fidelity (24-bit/*true color*), the size of digital map files has grown. Today, though Internet band-width has grown to meet the shipment of more and larger files, a digitized specimen still has the capacity to bring the Internet to a crawl.

In the past, files were *downsampled* to the resolution of the user's monitor; file size was reduced accordingly. And, individual files could be sent via the Internet without appreciable delay. While fine for post-card size specimens, downsampling reduced average and oversized maps to little more than pretty pictures. The detail that had been so carefully captured had been lost. Using the digital specimen as a surogate for remote close-inspection was impossible.

The Center's new approach uses *vector* rather than *raster* image technology. In lay terms, the traditional approach displays a one-size-fits all image (*raster technology*), usually scaled-down to the common denominator of what the average user can see in one screen image. The new approach, however, displays a zoomable image (*vector technology*), provided in the form of SID images. SID images use a vector compression format that reduces file size by up to 100 times. While some of the TIFF digital master's detail is lost, the loss is fractional. Detail can be *read*, often more clearly than it can be read from the original using 10X magnification. Even the tiniest of veins and hairs can be seen. Better yet, this version can be downloaded in only slightly more time than required for download of the traditional version.

The following resources have been extracted from the University of Florida Herbarium's on-line Herbarium Library and its Type Specimens collection.

Abrus precatorium

Acer rubrum

Agarista villarrealana
(Type Specimen)

Aleurites fordii

Behaima cubensis
(Type Specimen)

Calliandra slaneae
(Type Specimen)

Carya magnifloridana
Common Name: pignut hickory
(Type Specimen)

Chusquea subulata
(Type Specimen)

Citrus aurantium

Clerodendrum aculeatum var. gracile
(Type Specimen)

Cracca corallicola
Common Name: Coral Hoarypea
(Type Specimen)

Crataegus megapulchra
Common Name: Minchaux's Hawthorn
(Type Specimen)

Datura stramonium

Dicerandra immaculata
(Type Specimen)

Dicerandra linearifolia var. robustior
(Type Specimen)

Digitaria x umfolozi
(Type Specimen)

Eucharis cyaneosperma
(Type Specimen)

Eucharis formosa
(Type Specimen)

Eucharis plicata subsp. Brevidentata
(Type Specimen)

Eucharis plicata subsp. Plicata
(Type Specimen)

Euphorbia apocynifolia
(Type Specimen)

Euphorbia gracilior
Common Name: Scrub lupine
(Type Specimen)

Gongora tridentata
(Type Specimen)

Hicoria austrina
Common Name: Pignut Hickory
(Type Specimen)

Houstonia floridana
(Type Specimen)

Houstonia pulvinata
(Type Specimen)

Hydrangea macrophylla

Hypericum exile
Common Name: Florida Sands St. Johnswort
(Type Specimen)

Hypericum lissophloeus
Common Name: smoothbark St. Johnswort
(Type Specimen)

Illicium parviflorum

Liatris provincialis
(Type Specimen)

Liquidambar styraciflua

Lobelia hotteana
(Type Specimen)

Lupinus aridorum
Common Name: Scrub lupine
(Type Specimen)

Lyonia truncata var. proctorii
(Type Specimen)

Meriania brevipedunculata
(Type Specimen)

Meriania parviflora
(Type Specimen)

Micropholis polita
(Type Specimen)

Monotropa brittonii
(Type Specimen)

Mouriri crassisepala
(Type Specimen)

Nerium oleander

Nolina atopocarpa
Common Name: Florida beargrass
(Type Specimen)

Nympahea odorata var. godfreyi
Common Name: American White Waterlily
(Type Specimen)

Onosmodium floridanum
(Type Specimen)

Panicum longiaristatum
(Type Specimen)

Phaedranassa glauciflora

(Type Specimen)

Pinguicula ionantha
(Type Specimen)

Pinus elliottii var. densa
Common Name: Florida slash pine, South Florida slash pine
(Type Specimen)


1
.01984
centimeters

Rhodopsis lowdenii
(Type Specimen)

Rubus idaeus var. eucyclus
(Type Specimen)

Sabal palmetto

Sabaza liebmanii var. ovatifolia
(Type Specimen)

Salix longipes
Common Name: Carolina Willow; Coastalplain Willow
(Type Specimen)

Sorghastrum apalachicolense
Common Name: Slender Indiangrass
(Type Specimen

Stanhopea panamensis
(Type Specimen)

Stylosanthes calcicola
Common Name: Everglade Key pencilflower
(Type Specimen)

Theobroma cacao
Common Name: Cocoa, Chocolate Tree

Theobroma cacao L.
Common Name: Cocoa, Chocolate Tree

Theobroma obovatum Kl.
Common Name: Cacau, Cabeca-de-uruba (Brazil)

Theobroma speciousum Willd. Ex Sprengel
Common Name: Cacaui (Brazil), Cacaurana

Trillium decipiens **(Type Specimen)**
Common Name: Chattahoochee River wakerobin

Vaccinium corymbosum

Vaccinium fuscatum

Vicia ocalensis (Type Specimen)
Common Name: Chattahoochee River wakerobin

Wallenia formonensis
(Type Specimen)

Zephyranthes insularum
Common Name: Puerto Rico zephyrlily
(Type Specimen)

Zizyphus celata
(Type Specimen)

PUBLICATION OF ARCHIVAL, LIBRARY & MUSEUM MATERIALS

RINGLING COLLECTION

Images of 19th Century Actors and Actresses

The Ringling Collection is comprised of cabinet cards, postcards and photographs of 19th Century American and British actors and actresses. The Collection is one of several housed in the Belknap Collection for the Performing Arts in the Smathers Libraries' Department of Special Collections on the campus to the University of Florida (Gainesville, FL).

The Ringling Collection is important not simply for its images of the idols of a bye-gone era but for its depictions of period clothing and hair styles. Aside from clothing and hair styles, something of the period's social mores and attitudes can be seen among the poses taken; those taken by men can be distinguished from those taken by women and, alternately, by children.