

# Curso Botánica Tropical

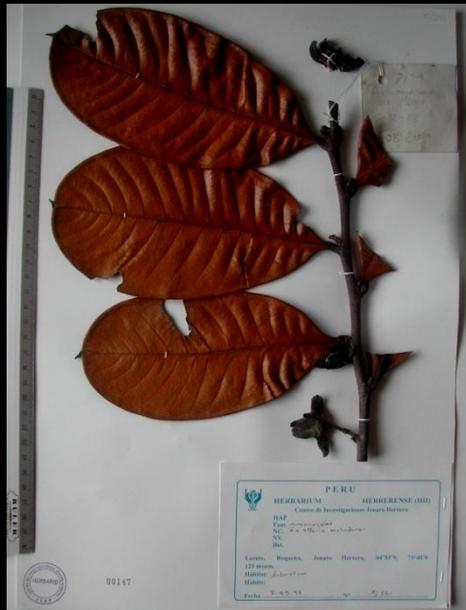
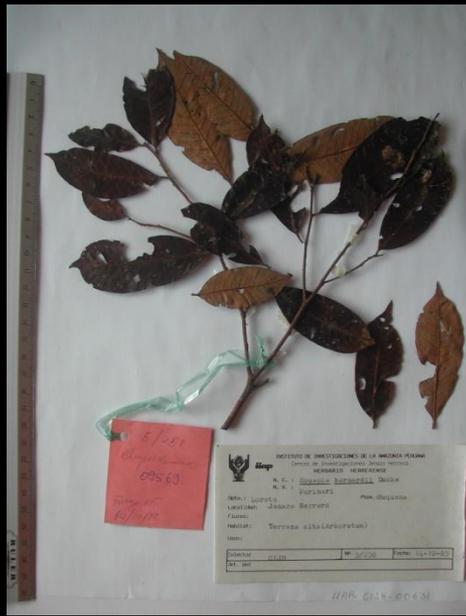
Jenaro Herrera

19 de julio al 8 de agosto de 2008

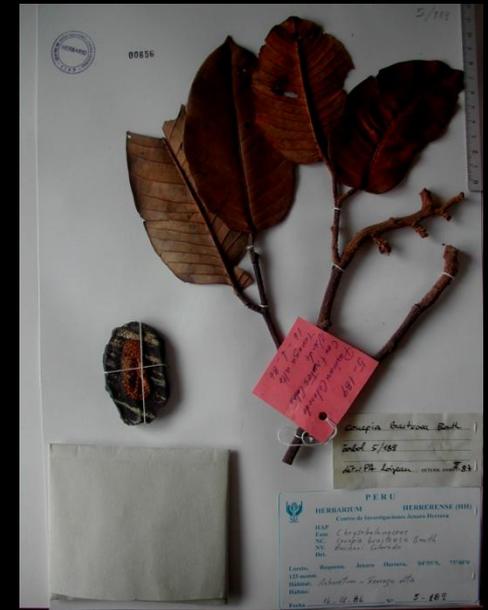
Tema 5:

## Manejo de herbarios





Manejo de  
muestras botánicas  
(exsiccátas)  
=  
Identificación de  
muestras



# Uso de claves taxonómicas

# Clave dicotómica

“Arreglo artificial de las características jerárquicas taxonómicas que permite identificar a que jerarquía pertenece un determinado espécimen”.

# Clave dicotómica indentada

## KEY TO THE SPECIES

- a. Areoles nearly all without included veinlets:
  - b. Fronds usually less than 10 cm. broad, and nearly always bearing proliferous buds in some of the pinna – axils: . . . . . 1. *T. coriandrifolia*
  - b. Mature fronds normally much more than 10 cm. broad and lacking proliferous buds:
    - c. Tissue and vascular parts glandular-puberulous throughout on both sides; blades 1-pinnate-pinnatifid; indusium minute or apparently absent: . . . . . 2. *T. cicutaria*
    - c. Tissue glabrous throughout on both sides, the main vascular parts minutely puberulous above and in axils beneath; blades 2-pinnate-pinnatifid; sori protected by large roundish-reniform indusia: . . . . . 3. *T. apiifolia*
- a. Areoles mostly with included free veinlets:
  - d. Indusium roundish-reniform, attached at the sinus; pinnae in 3–8 pairs: . . . . . 4. *T. incisa*
  - d. Indusium peltate, attached centrally; blades usually trifoliolate or occasionally with 2 pairs of pinnae: . . . . . 5. *T. heracleifolia*

# Clave dicotómica paralela

## Humiriaceae: *Vantanea*

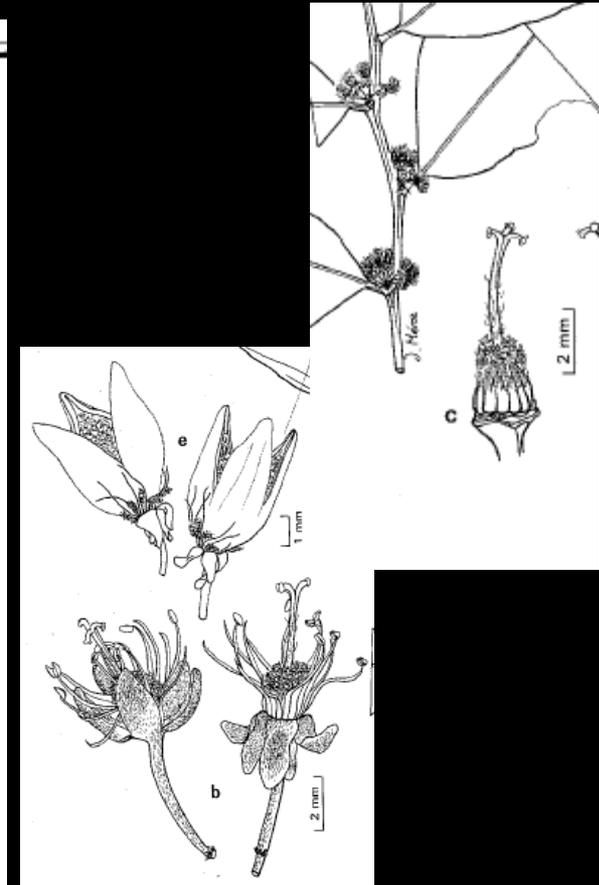
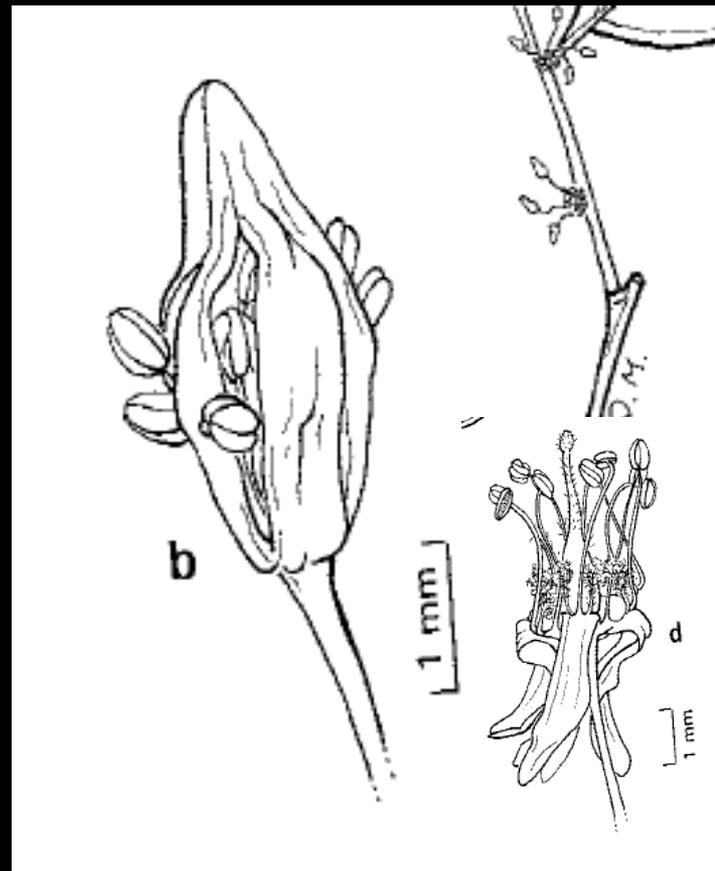
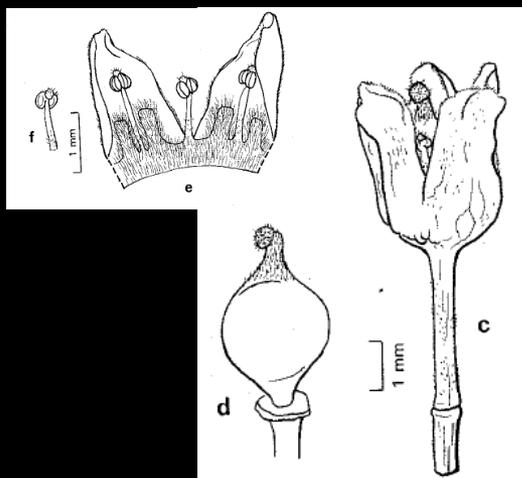
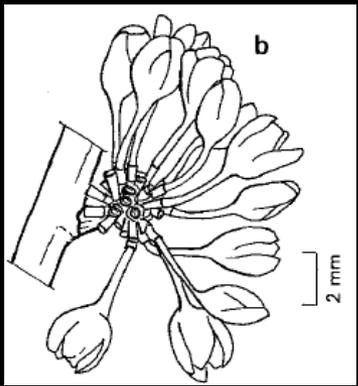
### Clave de las especies según los caracteres vegetativos

1. Hojas membranáceas a subcoriáceas, elípticas y acuminadas..... *V. guianensis*
- 1a. Hojas coriáceas o muy coriáceas, obovales y retusas u obtusas a un poco agudas ..... 2
2. Limbo de 3-10 cm de longitud..... 3
- 2a. Limbo de 10-18 cm de longitud..... 4
3. Pecíolo de 0.3 cm de largo..... *V. peruviana*
- 3a. Pecíolo de 1.5-2 cm de largo..... *V. parviflora*
4. Retículo un poco prominente en el envés..... *V. spichigeri*
- 4a. Retículo casi plano en ambas caras..... *V. paraensis*

Fuente: Spichiger et al. 1990.

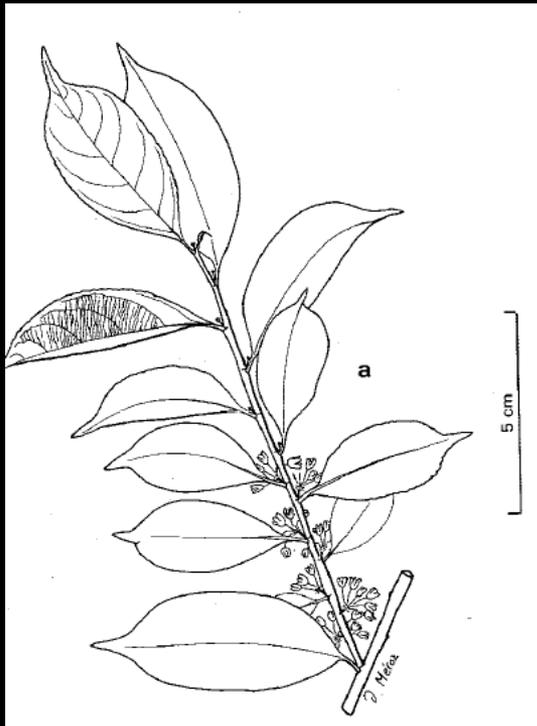
Clave de las especies

- 1. Fascículos pedunculados. Estambres con una glándula en la cumbre del conectivo.. ***C. arborea***
- 1a. Fascículos sésiles. Estambres sin glándula ..... 2
- 2. Estigma capitado, pubescente. Estambres 10..... ***C. decandra***
- 2a. Estigma tripartido, glabro. Estambres 13-16 ..... ***C. javitensis***



Clave de las especies según las hojas

1. Limbo de 16-27 X 5-11 cm; base anchamente cuneiforme a redondeada. Nervios terciarios oblicuos decrecientes..... **C. javitensis**
- 1a. Limbo de 5-11 x 2-4 cm de base cuneiforme o aguda ..... 2
2. Limbo oboval a oblongo, más o menos abruptamente acuminado; 6-7 pares de nervios secundarios..... **C. arborea**
- 2a. Limbo elíptico a estrechamente elíptico o elíptico-oval, gradual y largamente acuminado; 3-5 pares de nervios secundarios. Hojas deciduas..... **C. decandra**





Flores con pétalos rojos

Flores rojas, pétalos truncados,  
hojas acuminadas

Pétalos no blancos

Ápice de la hoja nunca agudo

Hojas no reducidas hacia la  
base



Pétalos rojos

Flores rojas; pétalos truncados;  
hojas acuminadas

Pétalos azules o rojos

Ápice de la hoja obtuso

Hojas de base ancha

## Las alternativas deben ser paralelas...



1 Flores rojas, zigomorfas

1' Corolas 5-lobado, blancas, actinomorfas



1 Hojas 5-10 cm de ancho, aserradas

1' Hojas más anchas en la base, trilobadas

## ... y mutuamente exclusivas...



1 Flores rojas

1' Flores blancas o azules



1 Hojas 10-30 cm de largo

1' Hojas de más de 40 cm de largo

# Curación de un herbario

# Curación

Identificación y actualización de las determinaciones de los especímenes de un herbario.

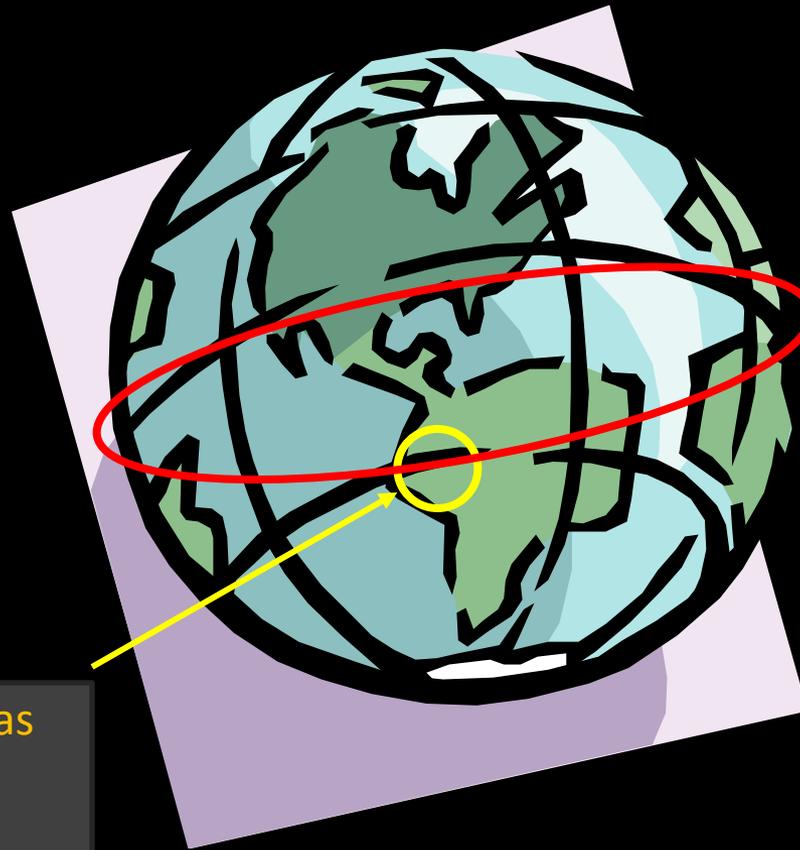


Puede ser realizada por:

- 1) Los **especialistas** (taxónomos, curadores).
- 2) Personas capacitadas (manejadores de colecciones) en el uso de **publicaciones taxonómicas** (monografías, revisiones).

# Publicaciones taxonómicas

Estudios de la nomenclatura de una o varias especies, géneros o familias a diferentes escalas.



## 2. Floras o flóruas

Flora del Perú  
Contribución a la  
flora de la Amazonía  
Peruana

## 1. Monografías y revisiones

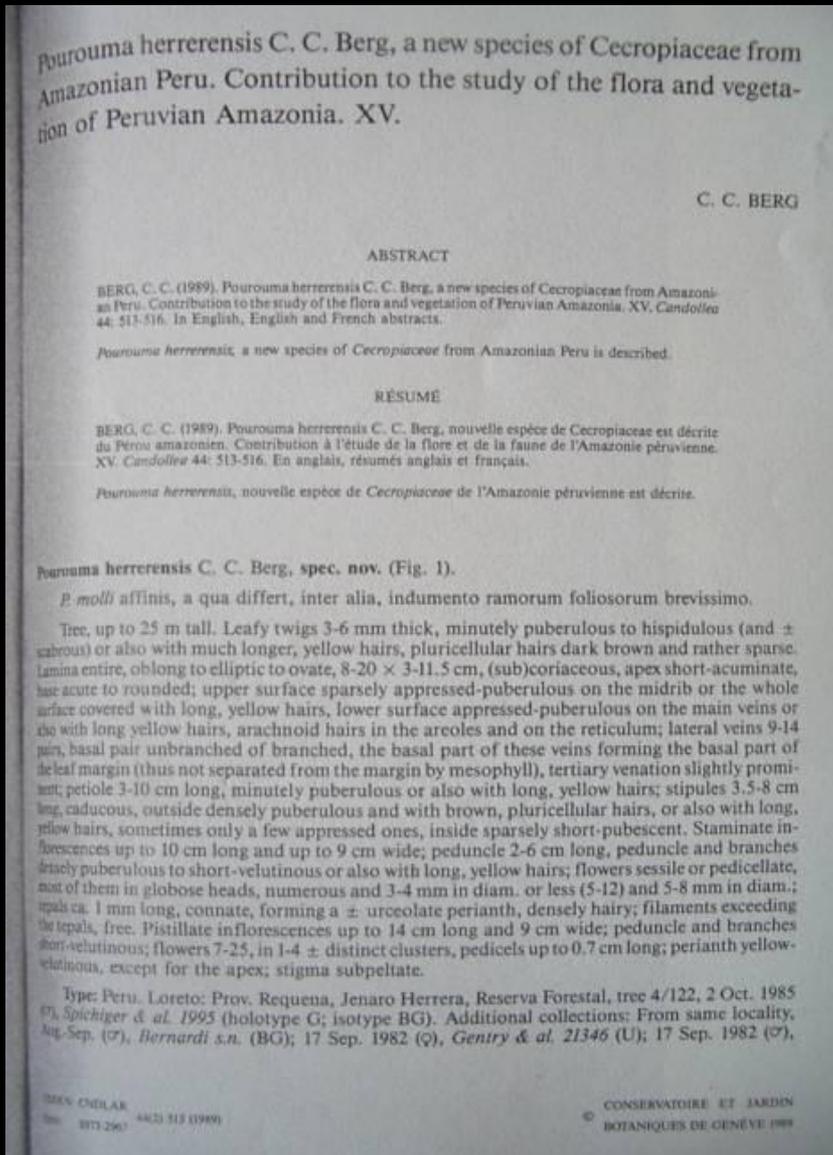
Flora Neotrópica  
El Género Inga

Annals of the Missouri  
Botanical Garden,  
Boissiera, Brittonia,  
Candollea, Kew Bulletin,  
Novon, etc.

## 3. Catálogo o lista de especies

Catálogo de Gimnospermas y  
Angiospermas del Perú  
World checklist and bibliography of  
Sapotaceae

# Monografías y revisiones: Estudio de una o varias especies, géneros o familias en una región.



← Título

← Resumen

← Nombre científico

← Descripción de la especie

Distribución

Claves de identificación

← Especímenes

botánicos consultados

↑ Dibujo de la especie



# Floras y flóruilas: Estudio de las especies de un país.

- ✓ Titulo
- ✓ Introducción
- ✓ Descripciones a nivel de familia, género y especie
- ✓ Claves de identificación
- ✓ Nombres científicos
- ✓ Lista de sinónimos
- ✓ Hábito, hábitat, área geográfica de las especies
- ✓ Dibujo de la especie

Fuente: Vásquez (1997)  
Flóruila de las Reservas  
Biológicas de Iquitos, Perú.  
Monogr. Syst. Bot. MO 63: 1-  
1046.

## CHRYSOBALANACEAE

Arbustos o árboles, sin látex (con exudación rojiza). Hojas simples, alternas, enteras, a veces con glándulas, frecuentemente con indumento lanuginoso en el envés, a veces con mirmecodomacios; estípulas 2, caducas o persistentes. Flores en racimos, panículas o cimas axilares o terminales, bracteadas y bracteoladas, actinomorfas o zigomorfas, bisexuales (unisexuales y las plantas polígamas), periginas; receptáculo *-hipanto-* de tamaño y forma variable, corto o prolongado, generalmente giboso en la base; sépalos 5, erguidos o reflexos, imbricados; pétalos 0 ó (4)5, imbricados, deciduos, a veces unguiculados; disco en forma de un forro dentro del receptáculo; estambres 2–100(300), insertos en el margen del disco, unilaterales o en círculo completo, todos fértiles o algunos reducidos a pequeños estaminodios, libres o unidos en la base, inmersos o exertos, anteras 2-tecadas, glabras o ligeramente pilosas, dehiscencia longitudinal; pistilo 1, súpero, 1–2(3)-locular, inserto en la base o cerca a la desembocadura del receptáculo, sésil o sobre un ginóforo corto, pubescente o veloso, óvulos 1–2 por lóculo, estilo filiforme, ginobásico, estigma truncado a 3-lobulado. Fruto drupa seca o carnosa, el interior a veces pubescente o fibroso, a veces con líneas de dehiscencia.

### CLAVE DE LOS GÉNEROS

1. Perianto generalmente actinomorfo; pistilo inserto en o cerca a la base del receptáculo..... **Licania**
- 1'. Perianto generalmente zigomorfo; pistilo inserto lateralmente en la desembocadura o la mitad del receptáculo.
  2. Pistilo 2-locular, fruto 2-locular con generalmente solo un lóculo desarrollado..... **Parinari**
  - 2'. Pistilo y fruto 1-loculares.
    3. Estambres (10)14–300; fruto sin líneas de dehiscencia, con endocarpo grueso y generalmente frágil..... **Couepia**
    - 3'. Estambres 3–9(10); fruto con 4–7 líneas débiles de dehiscencia, con endocarpo delgado y duro..... **Hirtella**

### **Couepia** Aubl.

Hojas con haz nítida y glabra, envés glabro o densamente aracnoide-lanuginoso (hirsuto). Flores en racimos o panículas, 7–40 mm de largo; receptáculo cilíndrico a turbinado, hueco, con la base glabra (pilosa), con tricomas deflexos en la desembocadura; sépalos generalmente reflexos; estambres (10)14–100 (300 en *C. macrophylla*), insertos en círculo completo o unilaterales con estaminodios opuestos a los fértiles, exertos; pistilo 1(3)-locular, inserto lateralmente en la desembocadura del receptáculo, óvulos 1 por lóculo. Drupa con endocarpo grueso, frágil.

1. Inflorescencias en racimos.
  2. Hojas con el envés cinéreo-lanuginoso pero en las venas hirtulo, con venación terciaria separada por 2–4 mm entre sí y retículo conspicuamente emergente..... **C. parillo**
  - 2'. Hojas con el envés lanuginoso a adpreso-pubescente o glabrato por todo, con venación terciaria separada por menos de 1 mm entre sí y retículo plano a más o menos emergente, a veces inconspicuo.
    3. Estambres 16–23.

### **Hirtella racemosa** Lam. var. **racemosa**

LÁMINA 25 B

Arbolitos hasta 10 m; ramitas glabras o pubérulas a tomentulosas o hispídas disperso. Hojas elípticas a oblongas, 3.5–16.5(19.5) × 1.5–7 cm, ápice acuminado, base subcordada a cuneada, haz glabra, envés glabro o adpreso-pubescente disperso; venas secundarias 6–10 pares, vena colectora poco conspicua; estípulas lineares, eglandulares, glabras o pubérulas, persistentes, 1.5–5 mm de largo. Racimos terminales o axilares, 5–29 cm de largo, raquis pubérulo a glabrescente; flores 3.5–6 mm de largo; brácteas y bractéolas 0.5–3 mm de largo, persistentes, adpreso-pubescentes, eglandulares o con glándulas sésiles; receptáculo campanulado, pubérulo disperso a glabrescente por fuera; sépalos agudos; pétalos rosados, glabros; estambres 5–7, insertos unilateralmente, glabros o disperso-hirsutos en la base; pistilo piloso-tomentuloso, inserto en la desembocadura del receptáculo. Drupas subglobosas, epicarpo liso, glabro, mesocarpo delgado, carnoso. **H:** en tierra firme, bosque primario, sobre suelos (ALL-M, SUC, YAN).

# Catálogos o listas de especies:

Listado de especies de un taxón, país o región.

- ✓ Título
- ✓ Introducción
- ✓ Lista de especies ordenadas generalmente por familia alfabéticamente
- ✓ Nombres científicos
- ✓ Lista de sinónimos\*
- ✓ Especímenes botánicos consultados
- ✓ Hábito, hábitat, área geográfica, altitud de las especies
- ✓ **NO** descripción de especies

Fuente: Brako & Zarucchi (1993) Catalogue of the flowering plants and gymnosperms of Peru. Monogr. Syst. Bot. MO 45.

Chrysobalanaceae / 349

## **Hirtella bullata** Benth

Syn. *Hirtella aureohirsuta* Pilger

Ref. Prance, 1972a: 288.

Shrub or tree. Amazonian, Andean I: forests, riversides. 0-1000 m.

Voucher: Woytkowski 5787 (MO!)

Depts.: AM, JU, LO, MD, SM

## **Hirtella burchellii** Britton

Syn. *Hirtella plumbea* Pilger

Ref. Prance, 1972a: 338.

Tree. Amazonian: terra firme forests. 0-500 m.

Note: Reported in Flora of Peru under synonym *H. plumbea*.

Voucher: Núñez 5828 (MO!)

Depts.: MD

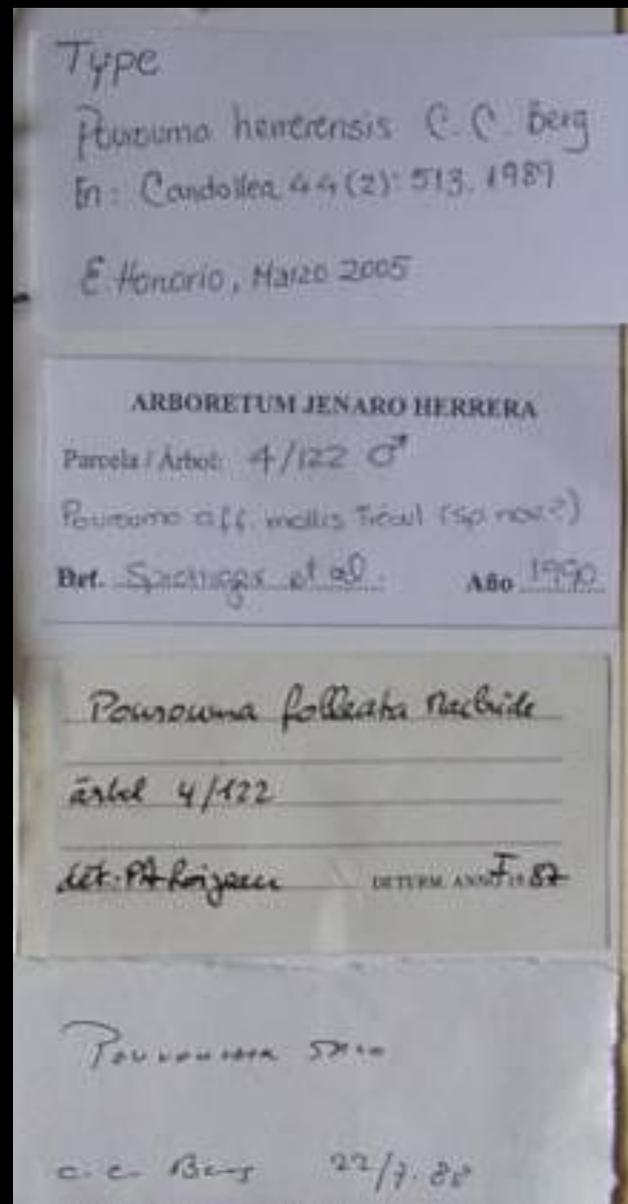
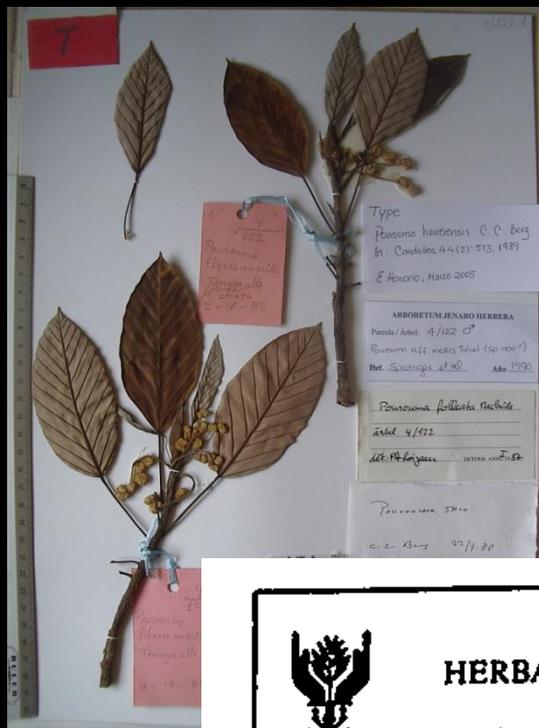
*Hirtella cosmibuena* Lamarck = *Hirtella triandra* subsp. *triandra*

Ref. FP 13(2/3) 1938: 1079; Prance, 1972a: 302.

**CECROPIACEAE**

*Pourouma herrerensis* C.C. Berg

Fuente: Candollea 44(2): 513. 1989



**PERU**

**HERBARIUM HERRERENSE (HH)**  
 Centro de Investigaciones Jenaro Herrera  
 IIAP COTESU

Fam. *cecropiaceae*.  
 NC. *Pourouma* aff. *mollis* Trécul.  
 NV. *Sacha uvilla*  
 Det. C.B.G.

Loreto, Requena, Jenaro Herrera, 04°55'S, 73°40'O  
 125 msnm.  
 Hábitat: Terraza alta (Arboretum)  
 Hábito: Yema 2/10-85 # 4/122 ♂

Fecha.....N°.....

Type: Peru. Loreto: Prov. Requena, Jenaro Herrera, Reserva Forestal, tree 4/122, 2 Oct. 1985 (♂), Spichiger & al. 1995 (holotype G; isotype BG). Additional collections: From same locality, Aug-Sep. (♂), Bernardi s.n. (BG); 17 Sep. 1982 (♀), Gentry & al. 21346 (U); 17 Sep. 1982 (♂),

## LAURACEAE

### *Pleurothyrium acuminatum* van der Werff

*Collections studied.* BRAZIL. AMAZONAS: São Paulo de Olivença, *Ducke RB25676* (RB). PERU. LORETO: Requena, Arboretum of Jenaro Herrera, ? (MO), ? s.n. (MO), *Castillo 50* (F, MO), *van der Werff 9967* (AAU, AMAZ, BR, C, F, G, HBG, K, MEXU, MO, NY, QRS, S, U, US, USM).

*Pleurothyrium acuminatum* is only known from a few collections from the Arboretum Jenaro Herrera in Amazonian Peru and one collection from Amazonian Brazil. It is included and illustrated in Spichiger et al. (1989) as *Ocotea undulata* (Meisner) Mez, a species that I place in *Pleurothyrium* and which is closely related to *P. acuminatum*. The erect tepals at anthesis, the relatively small (for *Pleurothyrium*) glands, the shape of the pistil and tepals, and the weakly loop-connected lateral veins all point to the group of species with reflexed margins of tepals as the closest relatives of *P. acuminatum*, even though the margins of the tepals are plane in this species. The other main group of *Pleurothyrium*, characterized among others by rotate flowers, has much broader tepals and usually

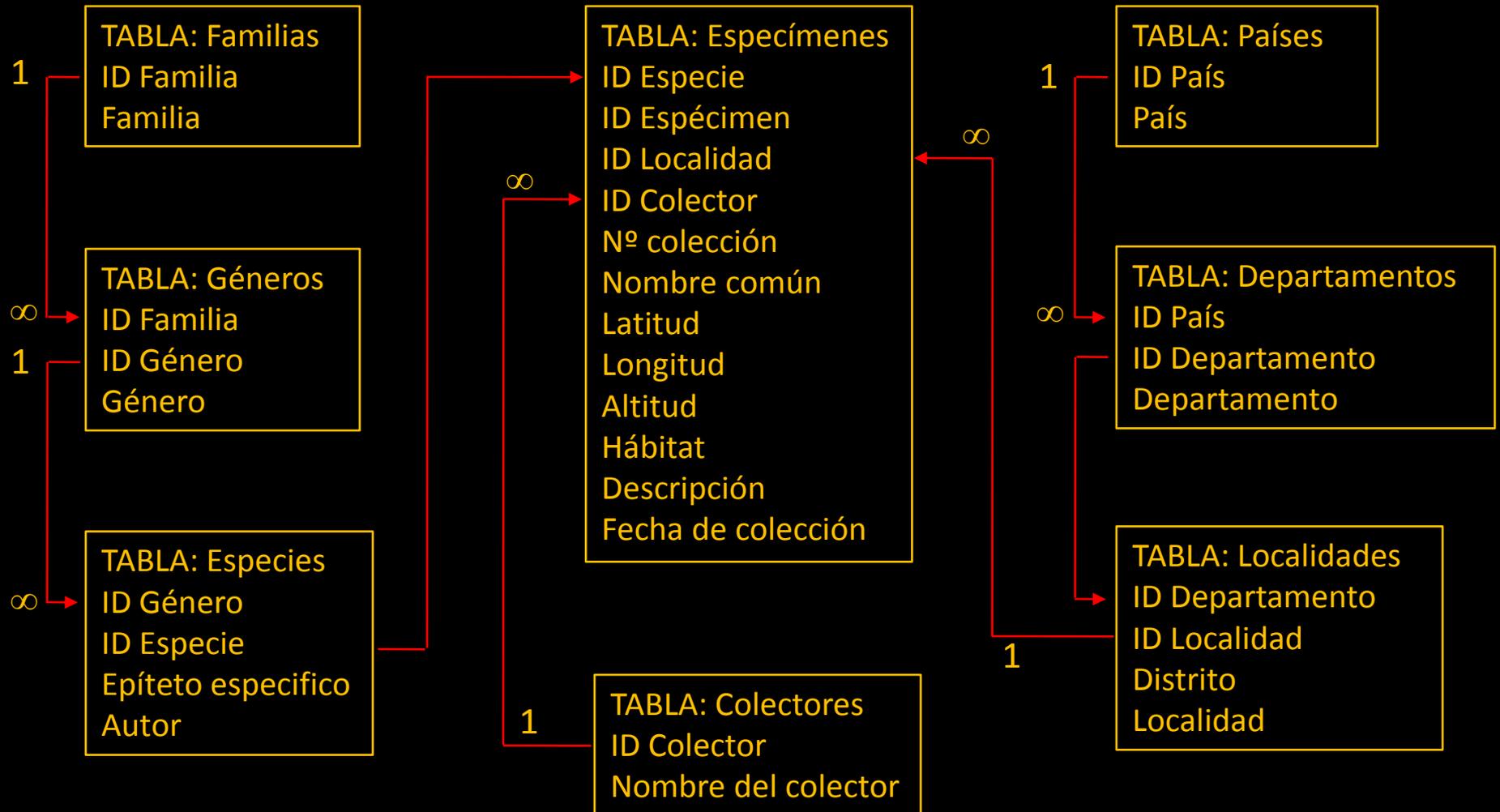
*Pleurothyrium acuminatum* van der Werff  
En: *Annals of the Missouri Botanical Garden* 80 (1): 54. 1993  
E. Honorio, Marzo 2005.

*Ocotea undulata* Mez  
Det. R. Englem. 12. 02. 05

Herbarium "Herrerense" (H. H.)  
Parl. - J. Herrera - Loreto  
Tall. *Jenaro* Dpto. Forestal 19/2/2001 4-72  
N. C. *Neelandsia* *obovata* Meisner  
N. v. *Mocia* *amarilla*  
HABITAT: H. H. T.  
Provincia: *provincia* *Jenaro Herrera*  
Prov. *Figueras* *van Loreto*  
Herbario: *M. B. G. 2001* *19. 11. 2001*  
*Bernhard* (s.n.)

Base de datos

# Base de datos



# Base de datos

Darwin Core 2 Element Definitions v1.31 (2005-03-16, superceded)

[http://darwincore.calacademy.org/Documentation/DarwinCore2Draft\\_v1-31\\_HTML](http://darwincore.calacademy.org/Documentation/DarwinCore2Draft_v1-31_HTML)

## *Record-level Elements*

GlobalUniquelIdentifier

DateLastModified

BasisOfRecord

InstitutionCode

CollectionCode

CatalogNumber

## *References Elements*

ImageURL

RelatedInformation

## *Taxonomic Elements*

ScientificName

HigherTaxon

Kingdom

Phylum

Class

Order

Family

Genus

SpecificEpithet

InfraspecificRank

InfraspecificEpithet

ScientificNameAuthorYear

IdentificationQualifier

# Base de datos

## *Locality Elements*

HigherGeography

Continent

WaterBody

IslandGroup

Island

Country

StateProvince

County

Locality

MinimumElevationInMeters

MaximumElevationInMeters

MinimumDepthInMeters

MaximumDepthInMeters

## *Geospatial Elements*

DecimalLatitude

DecimalLongitude

GeodeticDatum

CoordinateUncertaintyInMeters

Collecting Event Elements

YearCollected

MonthCollected

DayCollected

TimeCollected

JulianDay

Collector

## *Biological Elements*

Sex

LifeStage

# Herramientas taxonómicas en la web

The International Plant Names Index - home page - Windows Internet Explorer

http://www.ipni.org/

hp Y! Search Web Mail My Yahoo! News Games Music Answers Sports Sign In

The International Plant Names Index - home page

Norton 360 Fraud monitoring is on

## The International Plant Names Index

Search Plant Names  Search Authors  Search Publications ←

### IPNI Overview

- About the Index
- Information for authors
- Understanding the data
- FAQs
- Statistics
- Standardization
- Charts
- Errors Table
- Mission Statement

### Search the Data

- Plant Names
- Authors
- Publications
- By additional terms

### Search Tools

- Install browser plugin

## About IPNI

The International Plant Names Index (IPNI) is a database of the names and associated basic bibliographical details of seed plants, ferns and fern allies. Its goal is to eliminate the need for repeated reference to primary sources for basic bibliographic information about plant names. The data are freely available and are gradually being standardized and checked. IPNI will be a dynamic resource, depending on direct contributions by all members of the botanical community.

IPNI is the product of a collaboration between [The Royal Botanic Gardens, Kew](#), [The Harvard University Herbaria](#), and the [Australian National Herbarium](#)

## NEWS - July 2008

- New search tool available. Add IPNI quick search to your browser's list of search engines. Works with Firefox or IE7 and is simple to install. [Learn more](#) about it. Click [here](#) to install.
- New page containing background and [information for plant name authors](#) on how to create the standard form of a personal name.
- Standardization of authors and publication titles continues. [See how it's going](#).

Internet | Protected Mode: On 100%

Tropicos - Home - Windows Internet Explorer

http://www.tropicos.org/

Search Web | Mail | My Yahoo! | News | Games | Music | Answers | Sports | Sign In

Tropicos - Home

Norton 360 | Fraud monitoring is on

**Tropicos** Home Names Specimens References Images More

MOBOT Sign In | Login

TROPICOS was originally created for internal research but has since been made available to the world's scientific community. All of the nomenclatural, bibliographic, and specimen data accumulated in MBG's electronic databases during the past 25 years are publicly available here. This system has over one million scientific names, 3.4 million specimen records, 111,000 bibliographic citations, and more than 70,000 images of living plants and specimens.

Please continue to use the feedback link (Send feedback) at the bottom of the pages to submit suggestions, bug reports, and feature requests. We are not able to personally respond to all of the messages, but we do read them all, and incorporate as many as we can.

Quick Name Search:  Search Search Exact

Tropicos News  
New features added  
Launch of www.tropicos.org  
Release candidate available

Other Links:  
Research  
Botanicus digital library  
Bryological Research  
eFloras



Caption: Type Specimen  
Name: *Columnea aurantia*  
Wiehler  
Specimen: Wiehler, Hans Joachim - 8018

Cite this page: Tropicos.org. Missouri Botanical Garden. 17 Jul 2008 <http://www.tropicos.org>.

© 2008 Missouri Botanical Garden - 4344 Shaw Boulevard - Saint Louis, Missouri 63110

Send feedback | Linking to Tropicos | View in classic Tropicos

Internet | Protected Mode: On | 100%

Neotropical Herbarium Specimens - Windows Internet Explorer

http://fm1.fieldmuseum.org/vrrc/

Search Web | Mail | My Yahoo! | News | Ga

Norton 360 | No fraud detected

## Neotropical Herbarium Specimens

SEARCH FOR SPECIMENS

Family begins with:

Genus begins with:

Species begins with:

No. per page: 25

**BEGIN SEARCH** ▶

Collection Country(ies): all countries, ANTIGUA, ARGENTINA, BAHAMAS

Specific Localities: Brasil: MYRTACEAE-Sudeste Mata Atlântica, Panama: Barro Colorado Island

[Family List](#)  
[Genus List](#)  
[Country List](#)

Introduction:

This site is being made to speed up the general identification of dried specimens of Neotropical plants. It will be most useful to professional biologists and others doing species inventories of natural areas, ecology, and ethnobotany. It will be useful for identifying families, genera or plant species in regions for which comprehensive field guides are not available, or where manuals depend on the use of technical floral or fruit characters absent in the voucher specimens. It will even be useful to paleobotanists and others with interest in comparative morphology of tropical plants.

To this end we are providing a desktop reference set of high-quality images of dried herbarium specimens for comparison. These will represent a broad range of Neotropical genera and common species. The underlying strategy is to have just a few examples of each species, specimens that are typical or illustrative of that species. Preference is given to specimens that have a good set of leaves as well as flowers or fruit, and to specimens with an authoritative identification. Specimens of juveniles will be included when available and when significantly different in appearance from adults.

At this point, the species selection has been uneven and eclectic with a bias toward Peruvian species. We continue to add more species and will provide a wider representation of genera and common species. We expect to add other selectable fields that will help restrict the number of choices, e.g. life-form, and countries and field stations in which the species is known (rather than just the country of the representative specimen).

These scanned images are viewable larger ("View Max") than the actual size of the specimens, but the size varies according to your monitor settings and browser. To review many specimens at once we have also created smaller images. After selecting a family, one can

Done, but with errors on page.

Tropical Plant Guides - Windows Internet Explorer

http://fm2.fieldmuseum.org/plantguides/

hp Y! Search Web Mail My M

Tropical Plant Guides

Norton 360 No

www.fieldmuseum.org search site map help

Environmental and Conservation Programs  
Tropical Plant Guides

Welcome to the Tropical Plant Guides home page [Español](#)

 **Rapid Color Guides**  
(See what is available to order, or **DOWNLOAD FREE** any guides to your computer) (Tropical Animal Guides are at: [www.fmnh.org/animalguides/](http://www.fmnh.org/animalguides/))

 **Neotropical Live Plant Photos**  
(Still under development)

 **Neotropical Herbarium Specimens**  
(Scroll through high-quality specimen scans)

 **Micro-Herbaria**  
(Several books in stock)



Done

NYBG.org: Virtual Herbarium - Windows Internet Explorer

http://sciweb.nybg.org/science2/vii2.asp

NYBG.org: Virtual Herbarium

Norton 360

Fraud monitoring is on

## THE NEW YORK BOTANICAL GARDEN

Science Home ... Virtual Herbarium



### Search All Catalogs

The New York Botanical Garden catalogs specimens as part of specific projects. These are described in detail in the Summary of Databasing Projects page.

In 2004 the Virtual Herbarium adopted a new software platform, KE Software's KE EMu. In addition to providing a more modern system for data entry and storage, the EMu system permits many improvements to our web presentation of data. We are able to make a greater range of data available for searching, new records are posted instantly, users are able to download data, and georeferenced specimens can be mapped.

To see a selection of records that demonstrate the features of the new interface, see our [Specimen Showcase](#)

To search for specimens by plant name (division, family, genus, species, or subspecies), author, collector, collector number, barcode number, or type status, use the Quick Search box below. To search one or more specific fields in the database, use the Detailed Search.

### Basic Search

←

### Advanced Search

<b>Division</b>	<input type="text"/>
<b>Family</b> (most recent determination)	<input type="text"/>
<b>Scientific Name</b>	<input type="text"/>

Searches the genus, species, infraspecies, and

### Comments

We are interested in comments from users about the new interface and any additional features that would be helpful.

Please send these comments to:

Virtual Herbarium  
[vhnybg@nybg.org](mailto:vhnybg@nybg.org)

(3 items remaining) Downloading picture http://sciweb.nybg.org/science2/images/InternationalPlantScienceCenter\_Banner.gif...

Internet | Protected Mode: On 100%

National Herbarium Nederland | On-line Collections - Windows Internet Explorer

http://145.18.162.53:81/c8

Search Web | Mail | My Yahoo! | News | Games | Music | Answers | Sports | Sign In

Norton 360 | Fraud monitoring is on

## Nationaal Herbarium Nederland

[home]

**-On-line Collections-**  
[General information](#)  
[All Collections](#)  
*Special Collections*  
[Carpologica](#)  
[Seed](#)  
[Spirit](#)  
[Wood](#)  
*Historical Collections*  
[De Gorter](#)  
[Meerburgh](#)  
[Persoon](#)  
[Schomburgk](#)  
[Von Siebold](#)

### All Collections

**Types only**

**Family:**

**Genus:**

**Species:**

**Infraspecific Epithet:**

**Author:**

**Collector:**

**Additional Collector:**

**Prefix; Number; Suffix:**

**Year:**

**Country:** -- All --

**Locality:**

**Vernacular:**

Display  records per screen

### Search Help

The following wildcards can be used in all fields:

- \* for any number of characters
- ? for any single character

Fields left blank assume "all" values.  
For help on any of the fields, click the field title.

Searching the whole database or types requires at least one search criteria specified, unless the number of records are smaller than 1000.

---

Label data, with images of types, of the collections in L, U, and WAG.  
The database comprises c.5 % of all collections.  
378739 records exist in the collection, among them 49978 type(s).

Internet | Protected Mode: On

# Smithsonian National Museum of Natural History

<http://nhb-acsmith2.si.edu/emuwebbotweb/pages/nmnh/bot/Query.php>

Search the NMNH Department of Botany - Windows Internet Explorer

http://nhb-acsmith2.si.edu/emuwebbotweb/pages/nmnh/bot/Query.php

hp Y! Search Web Mail My Yahoo! News Games

Search the NMNH Department of Botany

Norton 360 Fraud monitoring is on

## Department of Botany

Smithsonian  
National Museum of Natural History

### Search the Botany Collections



#### Botany Collections

The plant collections of the Smithsonian Institution began with the acquisition of specimens collected by the United States Exploring Expedition (1838-1842). These formed the foundation of a national herbarium which today numbers 4.8 million historical plant records, placing it among the world's largest and most important.

Nearly 800,000 specimen records (including over 90,000 type specimens) are currently available in this online catalog. Images for the type specimens are available in our [Type Specimen Register](#).

#### Search the Botany Collections

Key word searches on selected fields can be performed in the search box below. [Detailed Searches](#) on values on specific fields are available through the link below. If you don't know what you want to see, you may want to look at the sample records in the 'Quick Browse' section to the right. Searches are limited to 2000 records and the results are sorted by taxonomic group. If you need to retrieve a larger record set, contact the Department of Botany's [Collections Manager](#).

#### Quick Search

Find:  anywhere

#### Quick Browse



Sample Records from the Botanical Type Register



Sample Records from the Wilkes Expedition



# International Legume Database & Information Service

<http://www.ildis.org/LegumeWeb/>

ILDIS LegumeWeb (version 10) - Windows Internet Explorer

http://www.ildis.org/LegumeWeb/

hp Y! Search Web Mail My Yahoo! News Games Music Answers Sports Sign In

ILDIS LegumeWeb (version 10)

Norton 360 Fraud monitoring is on Options

## International Legume Database & Information Service

**LEGUME WEB**



[LegumeWeb](#) is a service to search the [ILDIS](#) World Database of Legumes. This page accesses version 10 of the database.

If you have any comments or suggestions, please let us know. Contact details are given at the bottom of the page.

Scientific name

You can enter one word (a genus name), two words (a binomial: genus and species) or three words (a trinomial). One or more asterisks ("\*") may be used to match all or part of a word.

When you have specified your search, click on this button:

the name field to blank

- [Latest and other versions](#) of the ILDIS World Database of Legumes

Internet | Protected Mode: On 100%

http://www.gbif.org/

Search Web | Mail | My Yahoo! | News | Games | Music | Answers | Sports | Sign

GBIF portal: Home

Norton 360 | Fraud monitoring is on

HOME | DATA | NEWS | EVENTS | ARTICLES | NODES | PREFERENCES | HELP | ABOUT | PRESS | SITE MAP



## GLOBAL BIODIVERSITY INFORMATION FACILITY

SITE SEARCH:

- GBIF DATA
  - Browse
  - Search
  - How to search
  - Providers
  - Data policy
- ABOUT GBIF
  - Press
  - GBIF Q&A
  - GBIF Data Sharing
  - GBIF Symposia, etc.
  - Ebbe Nielsen Prize
  - GBIF Publications
  - GBIF Documents
  - GBIF Membership
  - GBIF Nodes
  - GBIF Directory
- TOOLS AND SERVICES
  - Newsletters
  - Mailing lists
  - Wiki
  - UDDI registry
  - Standards
  - CIRCA
  - GBIF tools download

### HOME

#### Latest news [ More... ]

- GBIF bids farewell to Meredith Lane - The GBIF Public and Scientific Liaison Officer ... - posted on 2008-07-08
- GBIF seeks Java developers - The GBIF Secretariat seeks two Java Software ... - posted on 2008-07-07
- GBIF seeks Head of Participation - The GBIF Secretariat seeks an experienced and ... - posted on 2008-07-02
- Bibliographies of GBIF citations accessible at EditGrid.com - MOST RECENT UPDATE: 19 June 2008 - posted on 2007-12-10

#### Latest articles [ More... ]

#### Upcoming events [ More... ]

- 20th International Congress of Zoology [Tuesday, 2008-08-26 00:00 - 2008-08-29 00:00] - Paris  
GBIF will be presented at this Congress by Anne-Sophie Archambeau of GBIF-France and by David ...
- EDIT Summer School 2008 [Sunday, 2008-08-31 09:00 - 2008-09-14 17:00] - French/Italian alpine nature reserves  
The aim of the Summer School is to train students in "Best Practices" of field sampling and various ...

#### Latest uploads [ More... ]

- GBIF Documents - modified on 2008-06-27
- GBIF Nodes - modified on 2008-06-27
- GBIF Publications - modified on 2008-06-20
- GBIF Data Sharing - modified on 2008-06-27
- NODES Committee Chairpersons - modified on 2008-03-31
- BBIE Pacific Biodiversity Information Forum - modified on 2008-03-24

#### Calendar of events

← July 2008 →

S	M	T	W	T	F	S	
			1	2	3	4	5
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

#### GBIF UDDI Registry

- \* registration
- \* update information

Data Providers	256
Datasets	2960
Searchable Records	141,500,888

#### Personalised news channels

GBIF CIRCA - MOST POPULAR ITEMS

# Angiosperm Phylogeny Website

<http://www.mobot.org/MOBOT/research/APweb/>

Angiosperm Phylogeny Website - Windows Internet Explorer

http://www.mobot.org/MOBOT/research/APweb/

Search Web | Mail | My My Yahoo! | News | Games | Music | Answers | Sports | Sign In

Angiosperm Phylogeny Website

Norton 360 | Fraud monitoring is on | Options

HOME TREES APOMORPHIES ORDERS FAMILIES CHARACTERS SEARCH LINKS  
STATISTICS STUDENTS **Angiosperm Phylogeny Website** REFERENCES GLOSSARY

Click here for Abbreviations

- Angiosperms
- Embryophytes
- Ferns s.l.
- Gymnosperms
- Seed Plants

- Acorales
- Alismatales
- Amborellales
- Apiales
- Aquifoliales
- Arecales
- Asparagales
- Asterales
- Austrobaileyales
- Berberidopsidales
- Brassicales
- Buxales
- Canellales
- Caryophyllales
- Celastrales
- Ceratophyllales
- Chloranthales
- Commelinales
- Cornales
- Crossosomatales
- Cucurbitales
- Cycadales
- Dilleniales
- Dioscoreales
- Dipsacales
- Ericales
- Fabales
- Fagales
- Garryales
- Gentianales

Introductory.

On classifications in general, and this classification in particular.

On forming clade characterizations (and thinking about apomorphies).

On the organization and design of the site.

On the interpretation of the text, abbreviations, etc.

Important - Warning to All Users!

History of the site.

The Future.

Thanks.

---

If you want to cite this site, "Stevens, P. F. (2001 onwards). Angiosperm Phylogeny Website. Version 9, June 2008 [and more or less continuously updated since]." will do. <http://www.mobot.org/MOBOT/research/APweb/>.

[peter.stevens@mobot.org](mailto:peter.stevens@mobot.org) (Missouri Botanical Garden), or [stevensp@umsl.edu](mailto:stevensp@umsl.edu) (University of Missouri, St Louis)

Website developed and maintained by Hilary Davis: [hilary.davis@mobot.org](mailto:hilary.davis@mobot.org)

Page last updated: 06/27/2008 16:20:51

---

**INTRODUCTORY**

Internet | Protected Mode: On | 100%