

The Plant Anatomy Data Dictionary

In 1954, a catalog to the entire Swingle Plant Anatomy Reference Collection was prepared by Frank D. Venning, a former undergraduate and later Research Assistant Professor at the University of Miami. Fortunately, this catalog was stored with the collection of microscope slides. The entire contents of the catalog were transcribed into a downloadable excel spreadsheet, The Swingle Plant Anatomy Reference Data, with some taxonomic information added. The Data Dictionary below gives an explanation of the fields in this spreadsheet. **Column headers in the spreadsheet are shown in bold.**

Accession

A unique accession number was assigned to each plant from which material was taken and used to prepare slides. For example, "SV446" refers to a tree of the species *Aegle marmelos* that grew in the Kampong in 1945. It is possible that the same plant was occasionally sampled at different times and given different accession numbers, but this would be difficult to determine.

The entire Swingle collection consists of nine sub-collections, prepared by different people for different ends. Each sub-collection uses a different system of accession numbers.

SV1-SV710	Swingle-Venning numbers, prepared by W. T. Swingle and his assistant F. D. Venning, 1943-1954.
Tillson 8-Tillson 845	Slides made by A. H. Tillson while working for W. T. Swingle between 1937-1942.
C1-C26	"Series C" of economically important fiber plants (jute, kenaf, and ramie) made by F. D. Venning while working for the Cooperative Fiber Commission, American Embassy, Havana, Cuba.
F1-F172	"Series F" of leaf specimens collected in the Miami area by Dr. Robert B. Wylie of the University of Iowa, in 1944. Individual slides in this series are not numbered unlike other series (see below).
R13, R16, R18	"Series R" of miscellaneous fiber plants, prepared by Sr. Leandro Ramos Ledon in 1952.
S1-S51	"Series S" of leaf material from Harvard's Atkins Garden in Soledad, Cuba, prepared by F. D. Venning for R. B. Wylie in 1950.
STV2-STV5	Leaves, flowers, flower buds, and bark from <i>Cinnamomum cassia</i> and <i>C. ceylanicum</i> (cassia bark and cinnamon). Nothing else is listed for the provenance of these specimens, when the slides were prepared or by whom.
Cal. 11-Cal. 13	Leaves, fruit, and seeds of <i>Citrus aurantium</i> . Nothing else is listed for the provenance of these specimens, when the slides were prepared or by whom.
CF3-CF4	Flowers, flower buds and fruit of <i>Euphorbia intisy</i> , an endemic to Madagascar, formerly an important source of rubber but now nearly extinct. Nothing else is listed for the provenance of these specimens, when the slides were prepared or by whom.

Genus, specific epithet, and authority

The complete scientific name of a species has three parts: the genus (a noun), a specific epithet (an adjective modifying the genus), and the authority. Each genus (plural: genera) is unique. However, the same specific epithet can be used to modify more than one genus. The combination of genus plus epithet is unique for each species. The authority is a standardized abbreviation of the name of the person who described the species. Common names of plants, in contrast, are not standardized and are often not unique to species. For example, the common name “jute” refers to several different species. In general, most entries in Venning’s catalog did not include authorities. These were added when possible during transcription of the catalog.

Family

Taxonomic families were added during the transcription of the catalog. Accepted family names have been in flux recently. All names used here follow the continuously updated Angiosperm Phylogeny Website (Stevens, P. F. 2001 onwards. Version 8, June 2007. <http://www.mobot.org/MOBOT/research/APweb/>).

Synonyms

Some of the species names used in Swingle’s catalog are no longer commonly used. In most cases, the most current name is used in the **genus, specific epithet, and authority** columns and the original, out-of-date name is put in the **synonym** column. Misspelled scientific names were also put in the synonym column as well.

Common name

Colloquial name for species, if one exists. Because there are over 300,000 species of plants in the world, most species do not have common names. Common names are not standardized. The same common name may refer to different species. Many of these common names were obtained from Mabberley (1997).

Collector name, origin of plant, and collection date

These columns provide information on the provenance of the plant specimen. Many of the structures used for these slides were collected (i.e., removed from a living plant) by Swingle and his assistants from plants cultivated in botanic gardens, arboreta, and private gardens in Miami, Washington, D.C., and Cuba. Many of the structures used in the SV and Tillson series were removed from existing herbarium specimens. Herbarium specimens are dried pressed plants or parts of plants, that are glued to archival paper for permanent preservation, and housed in herbaria, the equivalent of a museum for plants. They serve as references for plant identification, geographic distribution, morphological and ecological information. Each herbarium specimen can be identified by name of the original collector, a unique collection number, and a standardized abbreviation for the herbarium housing it. Swingle’s use of herbarium specimens allowed him to study plants in far-reaching parts of the world, including many places that he was not able to visit. He was also able to include in his study specimens from plants that lived many years before his birth! **Origin of the plant** usually includes geographic information, though sometimes it refers to a herbarium specimen number or publication where this information can be retrieved.

Slide serials

This is a capital letter followed by a number, for example: A1-44. Each accession number may have several serials (capital letters). Each serial (capital letter) refers to a single structure which has been sectioned or sliced, for example “A” may refer to a flower bud. The structure in question is given in **serial structure**. The numbers, 1-44, refer to glass microscope slides. In this case, the flower bud has been sectioned and the slices have been arranged on 44 glass microscope slides. If the structure is large, there may be only one slice of the structure on a given slide. If it is small, there may be >100 slices per slide.

Some of the miscellaneous accession numbers do not have this information.

Serial structure

Refers to the kind of structure sectioned on the serial. Includes: flower bud, pistil, leaf, petiole, root, stem, cotyledon, fruit, etc.

Type of section

This refers to the plane on which the structure was sectioned. The most common are longitudinal- (l) or cross-section.

Comments on plant

This column ranges from miscellaneous information on the plant. Most often, it refers to general terms about the kind of material that was studied (flowers, flower buds), and notes about how it was preserved (e.g., FAA) which can affect the appearance of the slide. Currently there is a lot of redundancy with column **type of section** and **serial structure**. Sometimes, this includes notes about the provenance of the appearance of the plant (“an abundant forest tree 40’, probably [collected] as part of the Roosevelt expedition”).