



Date: October 17, 2008

What's growing on
at the Garden!

**MISSOURI BOTANICAL GARDEN MOUNTS MILESTONE
SIX MILLIONTH HERBARIUM SPECIMEN**
Collection is Among the World's Largest

(ST. LOUIS): The Missouri Botanical Garden in St. Louis operates one of the largest and fastest growing herbaria in the world, and the second largest in the western hemisphere. With the addition of a specimen of *Anthurium centimillesimum*, a gigantic new aroid species from Ecuador, the Garden's permanent collection of pressed and dried plant specimens has reached a milestone of **six million** specimens.

A herbarium is essentially a "library" of plant specimens. The Garden's herbarium includes about five-and-a-half-million vascular plants (flowering plants, ferns and conifers) and 500,000 bryophytes (mosses, liverworts and hornworts). The bryophyte collection is also one of the largest of its kind in the world.

"The importance of these 'libraries' of plants cannot be overstated," said Vice President, Science and Conservation, Dr. Robert Magill. "There are an estimated 300,000 recognized, named species of plants, with perhaps an additional 100,000 species still to be discovered. Herbaria are vital resources that allow botanists to organize information about this enormous diversity of plant life. Without a system of documentation that includes actual samples of the plants, it would be nearly impossible to make conclusions about the roles and relationships of plants, or to even verify the discovery of a species new to science."

Plant specimens are collected in the wild, pressed in newspaper folds, and dried in a wooden-framed plant press before being sent to the Garden's herbarium for study and identification. At the

(over)

ADD ONE: Six million

Garden, newly received specimens are counted, recorded, and treated by freezing to kill insects that might eat them. Permanent labels are prepared from the collector's field catalog for each specimen. The label contains information on where and when the specimen was gathered, by whom, and any features about the plant that are not readily apparent from the pressed specimen. The specimens are then studied by plant taxonomists with specialized knowledge of the group to which the plant in question belongs. Taxonomists will either identify the specimens, or recognize them as new to science. One specimen from each collection is mounted and added to the Garden's herbarium. Any duplicates are distributed to other herbaria in exchange for specimens from their areas of activity; the Garden exchanges specimens with about 400 other herbaria worldwide.

The Missouri Botanical Garden's six millionth herbarium specimen was collected in late 2007 by Dr. Thomas Croat, P. A. Schulz Curator of Botany. Croat discovered *Anthurium centimillesimum* while on a collecting trip in Ecuador's Pichincha province, in an area of tropical premontane rain forest. The giant plant was found growing on a steep bank next to a pasture.

"At first I considered it impossible that this species was new, simply because the area was previously well collected," said Croat. "Still, after returning to the Garden, I went through all the existing species and none came close to this *Anthurium*."

Croat has been collecting plant specimens in the wild for over 41 years as part of the Garden's science and conservation team. *Anthurium centimillesimum* is the 100,000th collection made by Croat, making him the fourth most prolific plant collector in the history of botany. Of his vast collections, all but 4,500 have been deposited at the Garden.

The new *Anthurium* is a member of the aroid or Araceae family, also known as the Philodendron family. Aroids make up the largest group of ornamental pot plants, and more aroid species are counted among the top dozen plants in North American sales than any other plant family. The Missouri Botanical Garden is a major center of aroid research, with one of the largest living collections in the world. In some cases, it is unknown whether the species are still found in nature, or whether the Garden's plants are the only survivors.

Garden scientists conduct field research in 36 countries and six continents around the globe in an effort to collect, identify, and preserve plant specimens. Staff focus their efforts on areas of high biological diversity, with the goal of characterizing and grouping the plant life they discover.

The expansiveness of the Garden's science and conservation programs allows the institution to coordinate in-house editorial activity through MBG Press, the Garden's publishing arm. Plants

(more)

ADD TWO: Six million

collected in the wild and accessioned to the herbarium form the basis of scholarly publications, including floras, which document the known information about the plant species found in a particular geographic region. These taxonomic tools allow the Garden's wealth of plant information to be readily accessed by a wide variety of users throughout the worldwide scientific community.

"A fundamental part of our mission is to characterize, describe, and name the patterns of diversity found in the plant world," said Dr. James Solomon, herbarium curator. "We then build the tools that allow people to learn about, understand, and communicate about that diversity. In order to find medicines or sustainably manage lands, you have to be able to recognize and know the species involved. Our work is helping to synthesize knowledge from around the globe to make this possible."

For more information on the Missouri Botanical Garden's science and conservation work, visit www.mobot.org/plantscience.

By the Numbers – Missouri Botanical Garden Herbarium

- In 1857, the Missouri Botanical Garden's herbarium had 62,000 specimens. To date in 2008, the herbarium totals more than 6,000,000 mounted specimens.
- The Garden's herbarium includes over 5,500,000 vascular plants and over 500,000 bryophytes.
- The Garden's six millionth specimen was so large that it required seven sheets of standard-sized herbarium paper to mount a single leaf and inflorescence.
- There are approximately 3,200 herbaria in the world. The average size is 100,000 specimens.
- Over the last five years, the Garden has added an average of 123,000 mounted specimens to the herbarium collection each year.
- The Garden's herbarium includes specimens collected by Charles Darwin on his voyage with the *H.M.S. Beagle* (1831-36) and by Joseph Banks and Daniel Solander, who were on Captain James Cook's first voyage around the world (1768-71).
- The Garden began numbering its herbarium specimens in 1913, when the collection already contained about 630,000 specimens.
- The Garden loans an average of 27,000 herbarium specimens each year to researchers around the world, and borrows an average 24,000 specimens from other institutions.
- The Garden's two millionth herbarium specimen was added on Jul. 1, 1970; the three millionth on Apr. 20, 1983; the four millionth on May 20, 1992; and the five millionth on Nov. 11, 1999.
- The Missouri Botanical Garden's plant "library" has over one million more mounted specimens than the St. Louis Public Library has books.

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NOTE: A digital color image is available by request. Check the online Media Room for downloadable news releases and images at www.mobot.org/press.

The Missouri Botanical Garden's mission is "to discover and share knowledge about plants and their environment, in order to preserve and enrich life." Today, 149 years after opening, the Missouri Botanical Garden is a National Historic Landmark and a center for science, conservation, education and horticultural display.