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What's growing on
at the Garden!

MISSOURI BOTANICAL GARDEN RESEARCHER DISCOVERS NEW GENUS *Finding New Genus Rare in Modern Plant Taxonomy*

(ST. LOUIS): An article published in the October issue of the *Annals of the Missouri Botanical Garden* describes a new genus of tree of the Aptandraceae family, a group that is related to the sandalwoods (order Santalales). The genus, which has been given the name *Hondurodendron*, is endemic to Honduras and means “tree of Honduras.”

In the article, “*Hondurodendron*, a New Monotypic Genus of Aptandraceae from Honduras,” lead author Dr. Carmen Ulloa, associate curator at the Missouri Botanical Garden, and co-authors Dr. Daniel L. Nickrent, Southern Illinois University-Carbondale, Dr. Caroline Whitefoord, The Natural History Museum in London, and Dr. Daniel L. Kelly, Trinity College in Dublin, describe the genus as a tree about 40-feet-tall, with minute male and female flowers less than 2 mm (1/8 inch) wide, borne respectively on separate plants. The tiny stamens have rather unusual anthers opening by three valves. The fruit measures 2 cm (1 inch) across; it is tightly wrapped by the calyx which enlarges greatly as the fruit matures and eventually may even project beyond as a flared limb. The authors named the single species known of this genus as *Hondurodendron urceolatum* with the Latin specific epithet meaning “shaped like a pitcher or urn” because of the striking form of the fruit. The first specimens of this genus were collected by Kelly and a team of researchers and students during a plot-based survey of the forest vegetation of Parque Nacional El Cusuco in northwest Honduras in 2004 and 2006.

The fruit of *Hondurodendron* is known by local people as “guayaba” because of its superficial resemblance to guava, *Psidium guajava*. However, the fruit is not succulent, but functionally a nut, eaten by small mammals.

Garden researchers publish more than a hundred new plant species each year. In 2009, Garden

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scientists published an estimated 145 new species, but only a few of them represented new genera.

“Although many botanists describe numerous species as part of our scientific work, to describe a new genus is perhaps a once in a lifetime experience,” said Ulloa. “This mysterious tree was brought to my attention in May of 2007 and involved morphological and molecular work from four researchers from four institutions in three countries to solve and finally show that this was not only a species new to science, but also a new genus of the family Aptandraceae.”

Hondurodendron is only known from Parque El Cusuco, located west of San Pedro Sula, Cortés Province, in northwestern Honduras. It appears to be widely, but sparsely distributed within the park. It's found mainly as an understory tree, growing under a high forest canopy, also occurring in forests disturbed by natural tree-falls and alongside trails; it grows in well-drained soils, on slopes and ridgetops.

Hondurodendron is known only from scattered populations within a single mountain range, a forested area that is largely surrounded by agriculture lands. Because logging and grazing by livestock occur within the bounds of the national park, the authors assigned the species a provisional conservation status of Endangered following the International Union for Conservation of Nature (IUCN) guidelines.

Compared with other Central American countries, Honduras is poorly known botanically and has no modern published flora. When the specimens were first discovered, Ulloa and her team compared the plant to the country's checklist and the new Catálogo de las Plantas Vasculares de Honduras (the Catalogue of Vascular Plants of Honduras), but did not find a match nor could assign it to any previously known Central American plant genus or family. A molecular analysis based on four genes ultimately made it possible to detect its relationships accurately and the authors placed the genus in the family Aptandraceae.

With scientists working on six continents in 38 countries around the globe, the Garden has one of the three largest plant science programs in the world, along with The New York Botanical Garden and the Royal Botanic Gardens, Kew (outside London). The Garden focuses its work on areas that are rich in biodiversity yet threatened by habitat destruction, and operates the world's most active research and training program in tropical botany. Scientific study at the Garden focuses on the exploration of selected tropical regions, which encompass Earth's least known, most diverse, and

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most rapidly vanishing ecosystems. Because of the speed with which irreversible changes occur in tropical regions, the Garden has made a long-term commitment and assumed a leadership role in the study and conservation of these imperiled habitats.

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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, 151 years after opening, the Missouri Botanical Garden is a National Historic Landmark and a center for science, conservation, education and horticultural display.