

ON TOP OF THE WORLD, DOWN UNDER

Collecting *Austrobaileya scandens* in Tropical Australia

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About 50 years ago, Arboretum botanist Irving Widmer Bailey (1884-1967) led an expedition to collect tropical plants in Queensland, Australia. Among the plants obtained was a previously undescribed woody vine that climbed up to 40 feet and produced showy flowers at its top. Named *Austrobaileya scandens* to honor Bailey, the species was first published in *The Journal of the Arnold Arboretum*. Today, botanists consider *Austrobaileya* to be a remnant of one of the most ancient lineages of flowering plants, offering crucial information for our understanding of how these plants evolved. Last November, staff from the Arboretum returned to Queensland to collect seeds of *A. scandens* as part of Director William (Ned) Friedman's groundbreaking research into the reproductive adaptations of early flowering plants.

For this expedition, Arboretum experts in horticulture and botany joined forces. One of us is a veteran arborist who contributed many years of experience with tree-climbing equipment, skills in scaling large trees in dense and sometimes thorny environments, and an understanding of proper safety measures in the field. The other is a postdoctoral research scientist who coordinated collection protocols and managed preservation procedures for the collected plants. During our two-week trip, we collaborated fully in collecting *Austrobaileya* in Queensland's vast tropical forests and in conducting initial lab work at CSIRO (Commonwealth Scientific and Industrial Research Organisation) in the small town of Atherton, Australia.

With the help of Wendy Cooper, a freelance Australian naturalist, we located 42 vines with flowers or fruits. From these, we collected and prepared more than 140 fixed samples of *Austrobaileya* for lab analysis, and gathered nearly 500 mature seeds, many of which will be used for propagation. Collections included leaves for DNA extraction and flowers and fruits at various developmental stages. The opportunity to collect plants in the field is an experience highly valued by biologists, and one perhaps rarely experienced by an arborist. For both of us, the expedition provided a means to observe how plants grow and reproduce in a rainforest



John Del Rosso

Post-doctoral Fellow Juan Losada in the canopy of a specimen of *Austrobaileya scandens*, holding fruits harvested to extract seed for laboratory analysis and propagation experiments.

environment, providing more information that can assist us in the investigation of their biology.

The diversity of Australia's flora and fauna is incredible and its habitat is rather astonishing. Given that the Arboretum's living collections are almost entirely derived from the Northern Hemisphere, we were excited to encounter the biodiversity that occurs south of the equator. Despite working under somewhat arduous conditions and bearing the rigors of the field, the trip was a success in every respect. From a personal point of view, we each gained a great deal from each other's help and expertise over the course of our journey, and became good friends as well as colleagues.

"This expedition," said Director Ned Friedman, "offers a wonderful reminder of the continued relevance of exploring plants around the world as a part of our mission and legacy. Whether we're collecting plants in their native environments or stewarding their growth in our landscape, the Arnold Arboretum's work to connect people and plants continues to play a critical role in expanding our understanding of botanical diversity and its importance to us all." 🌿