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# **Bromeliads Along the ACEER Canopy Walkway in Amazonian Peru**

**Donald Murray,<sup>1</sup> Margaret Lowman,<sup>2</sup> Philip Wittman<sup>3</sup>**

**Photography by Margaret Lowman**

**P**eru has 17 genera and 420 species of bromeliads of which 239 are endemic (Brako and Zarucchi 1993). The list presented in this paper all occur along or near the aerial walkway at the Amazon Center for Environmental Education and Research (ACEER) in northern Peru. The ACEER is located on the Amazon Biosphere Reserve which encompasses two hundred and fifty thousand acres of primary rain forest within the upper Amazon Basin. The ACEER is approximately 4 hours by boat from Iquitos, down the Amazon River and up the Napo River to the Sucasari tributary. Iquitos is served by weekly direct flights from Miami, Florida and daily flights from Lima, Peru.

One of the outstanding features of the ACEER is its 1200 foot long canopy walkway that leads the visitor from ground level to a height of 118 feet. This multilevel system of aerial platforms and suspension bridges allows easy access for both scientists and eco-tourists to observe the rain forest canopy and its diverse community of epiphytes (figure 2).

## **ACEER AND THE CANOPY WALKWAY**

The non-profit ACEER foundation was created in 1991 by International Expeditions, Inc. (Helena, Alabama, USA) in cooperation with Conservación de la Naturaleza Amazonica del Peru A.C. (CONAPAC) (Iquitos, Peru) with the full support of the Peruvian Ministry for the Environment. Since its opening, the ACEER has hosted many workshops for both educators and children, in addition to encouraging research by scientists from around the world. Eco-tourists who visit the ACEER reserve and its canopy walkway can observe biological research firsthand, as well as appreciate the architectural features of the forest canopy (figure 3).

The ACEER facility is located in northeastern Peru (latitude 3° 15' S, longitude 72° 54' W) within pristine lowland (70.1 meters/230 feet above sea level) tropical rain forest near the Sucasari tributary of the Napo River, which is itself a tributary of the Amazon River. The average temperature is 85-90° F, and it can rain up to 2 inches per day during wet periods.

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<sup>1</sup> Research Intern, Marie Selby Botanical Gardens

<sup>2</sup> Director of Research and Conservation, Marie Selby Botanical Gardens

<sup>3</sup> Research Associate, Marie Selby Botanical Gardens

## BROMELIADS FOUND ALONG THE CANOPY WALKWAY

During 1994-6, we spent several months observing and identifying the epiphytes along the ACEER walkway (figure 4). This project represents part of the research mission of Selby Botanical Gardens, as well as serves to assist in the interpretation of the walkway for the ACEER foundation. The following species have been confirmed to date:

*Aechmea beeriana* L.B. Smith & M.A. Spencer (Synonym *Streptocalyx poeppigii* Beer).

A relatively uncommon bromeliad along the walkway. Flowering shoot 30–40 cm high, inflorescence-axis and bracts rose-pink. Leaves numerous and as long as 1–2 m in length. Prefers a semi-shade environment (individuals were marked at a height of 24 m on tree trunks, and observed to receive no more than 1 hour of full sun each day). Relatively rare at ACEER, but common in Colombia, Ecuador and Brazil at middle latitudes of 25–1200 m. Mainly epiphytic but sometimes terrestrial or saxicolous.

*Aechmea chantinii* (Carriere) Baker.

Common along the ACEER walkway, usually green with transverse white bands on both sides. Flowering stem erect and longer than the leaves. Inflorescence varies in color from deep purple to red-orange. Found mainly in the shade of the inner canopy, in clumps ranging from 2 to 16 individual rosettes. Distributed throughout Amazonian South America.

*Aechmea chantinii* forma *amazonica* (Ule) H. Luther.

Leaves plain green or reddish and concolorous. Distribution ranges from Colombia, Brazil, Ecuador and Peru.

*Aechmea contracta* (Martius ex Schultes f.) Baker.

Situated in the deep shade only 2 meters up a tree trunk at ACEER. Leaves number 5-10, subfasciculate, and up to 85 cm in length. Inflorescence simple or with 2–4 spikes, 7–25 cm long. Fairly uncommon to the ACEER area.

*Aechmea hoppii* (Harms) L.B. Smith.

Leaves 60–100 cm long. Inflorescence cylindrical, densely bipinnate, 12–30 cm long with up to 20–30 spikes. Primary bracts red and up to 1 cm in length. Found in the shade of the inner canopy 18–26 m high. Distribution includes Colombia, Ecuador and Peru.

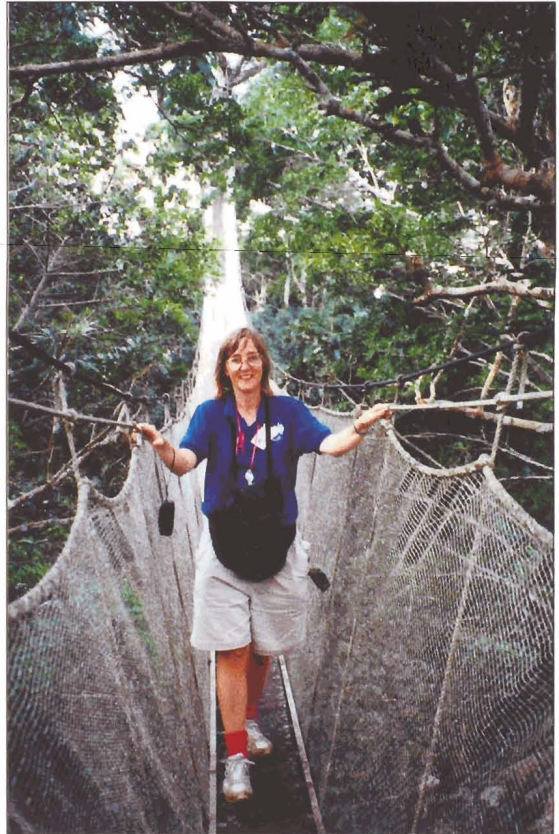
*Aechmea mertensii* (G. Meyer) Schultes f.

One small clump found at a height of 25 m along ACEER walkway in the outermost canopy in full sun. Rosette-forming green leaves 20–40 cm long. Scape short and slender, red-orange in color. Wide distribution within South America.



*Figure 2.*

Aerial view of the extensive canopy walkway through lowland tropical rain forest at the ACEER site in Peru.



*Figure 3.*

Visitor on the ACEER canopy walkway in Peru.

*Aechmea nallyii* L.B. Smith.

Very common along ACEER walkway, mainly located within lower and inner canopy but sometimes in the outer canopy. As many as 60 individuals of *Aechmea nallyii* can be counted on one tree, from heights of 16–36 m. Approximately 10 leaves in a funnel-form rosette, 45 cm long. Scape straight, slender and distinctly exceeds the leaves. Endemic to Amazonian Peru. (See Lowman *et al.* 1996).

*Aechmea nidularioides* L.B. Smith.

Uncommon bromeliad along the walkway but distributed from southern Colombia to northern Peru. Leaves pale green to rusty-red and up to 1 m long. Inflorescence bipinnate up to 15 cm long. Flower head elongated globe shape. Has been observed with a poison dart frog within its tank.

*Billbergia* cf. *decora* Poeppig & Endlicher.

Found fairly close to the walkway, and visible with its large carmine pink-red inflorescence bracts. Leaves narrow-elliptical and about 10 to 20 cm long. Common to Amazonian Peru, Bolivia, Brazil and Ecuador.

*Guzmania calothyrsus* Mez.

Found near to the walkway, growing in a shady region. Leaves 40–50 cm long and 3–4 cm wide, long-tapered and green. Inflorescence simple, cylindrical, with flowers situated all the way to the tip. Distributed throughout Peru, Bolivia, Brazil and Colombia.

*Guzmania vittata* (Martius ex Schult. f.) Mez.

Decorative foliage, stemless, green leaves 35–55 cm long with broad dark latitudinal bands. Inflorescence comprised of a tall green spike ending in a small round head of greenish bracts, edged with dark purple, and white flowers. Fairly uncommon to the ACEER area, with one individual observed on a tree trunk at 16 meters in semi-shade.

*Neoregelia eleutheropetala* (Ule) L.B. Smith.

Fairly common along the walkway, usually in full sun. A stoloniferous plant with leaves 50–70 cm long, mainly green in color with white or pale violet on the innermost leaf bases. Inflorescence 6–8 cm in diameter, composed of many white flowers surrounded by short mucronate outer bracts. Distributed in northern Peru through Colombia to Brazil.

*Neoregelia* cf. *rosea* L.B. Smith.

Several clumps visible along the walkway in full sun. Leaves rosulate, 50–60 cm long. Inflorescence approximately 5 cm in diameter and sunk in the center of the rosette, compound and many-flowered. Known from Peru only.

*Neoregelia mooreana* L.B. Smith.

Small bromeliad found commonly along the walkway. Leaves form a dense rosette, 30 cm long. Inflorescence sunk in the center of the rosette, simple with few-flowered floral bracts (about 3 cm long). Found 20 m up on a branch overhanging the walkway. Known from Peru and Ecuador.

*Neoregelia myrmecophila* (Ule) L.B. Smith.

Uncommon to the ACEER walkway. Leaves up to 70 cm long in a rosette, green or reddish. Scape short, up to 1 cm in diameter. Inflorescence compound and digitate, 3–6 cm in diameter. Ants appear to like this bromeliad. Distributed in Ecuador, Brazil and Peru.

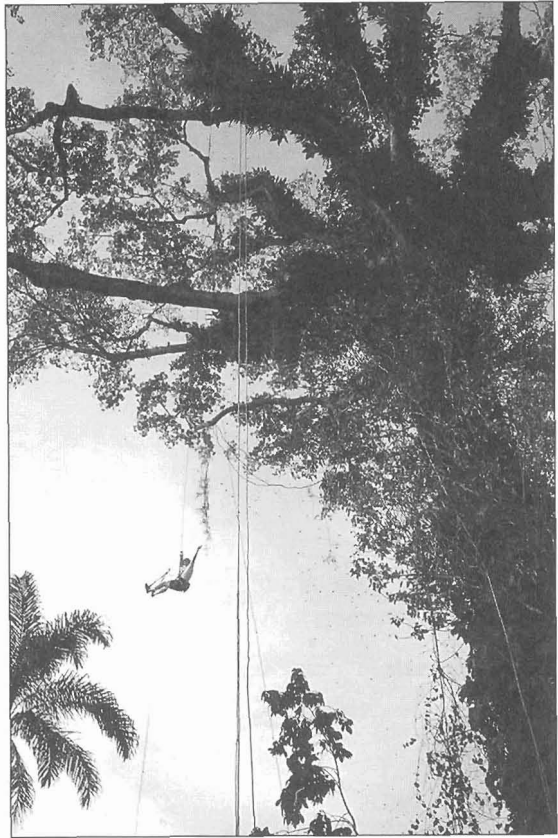


Figure 4.  
Technical climbing to examine epiphytes  
near ACEER, Peru

*Neoregelia* cf. *margaretae* L.B. Smith.

Stemless plant found on a tree trunk close to walkway, 23 m high, in semi-shade. Leaves green to red and over 30 cm long, comprising a dense rosette. Inflorescence sunk in the center of the leafy rosette, with small white petals about 1 cm long. Distribution Brazil and Peru.

*Werauhia gigantea* (Martius ex. Schultes f.) J.R. Grant. (Synonym: *Vriesea amazonica* Baker) Mez in Martius.

Found near walkway on a tree trunk at 1 m height. Leaves 50 to 80 cm long, pale green on both sides, deltoid at apex. Spike over 30 cm long. Fairly uncommon to ACEER. Distributed in Venezuela, Trinidad, French Guyana, Amazonian Brazil and Peru.

## AN EPIPHYTE DIVERSITY AND ABUNDANCE STUDY

A study of the abundance and diversity of epiphytes within a Peruvian forest canopy is currently in progress by one of us (DM), while measurements of their herbivory are also being recorded (ML). These studies represent the first epiphyte community studies within the upper Peruvian Amazon and the first to be carried out from the ACEER canopy walkway system. Many of the above bromeliads were found within a 50 by 50 meter plot along one of the walkway spans. Results of these field projects will be reported in upcoming publications.

We highly recommend the thrilling experience of visiting the ACEER walkway, for both the bromeliad enthusiast as well as anyone who appreciates the wonders of the rain forest canopy. Anyone interested in staying with the ACEER facility in Peru should contact: The ACEER Foundation, 10 Environs Park, Helena, Alabama, USA, 35080. Telephone 1 (800) 255-8206.

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*Marie Selby Botanical Gardens  
Sarasota, Florida*