NYBG

Press Release

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NYBG Scientist and Colleagues Discover Seven New Plant Species in the Highly Threatened Cloud Forests of the Andes Mountains in Peru

Because of Their Scarcity and Threatened Habitats, All of the Species Should be Considered Endangered or Critically Endangered, the Researchers Warn

An NYBG scientist and his colleagues who discovered seven new plant species in Peru believe that three should be classified as Critically Endangered: (left to right) *Blakea pavida*, *Blakea quinta*, and *Blakea yumi*. (Photos by Robin Fernandez-Hilario)

Bronx, NY—An international team of researchers, including a scientist at The New York Botanical Garden (NYBG), has documented and described seven rare new plant species with brightly colored flowers that are only found in highly threatened forests of the Andes Mountains in Peru. Using internationally accepted conservation status categories, the researchers believe that four of the new species should be classified as Endangered and three as Critically Endangered, a status only one step away from being extinct in natural habitats.

The species all belong to a single genus—a group of closely related species—in the Melastomataceae family of tropical plants, a large and diverse family about two-thirds of whose species are found in the New World tropics. The researchers describe the new species in "Taxonomic and chorological novelties in *Blakea* (Melastomataceae: Pyxidantheae) from Peru with a list of species for the country," published recently in the peer-reviewed journal *Phytotaxa*. Previously, 24 species in the genus *Blakea* had been documented in Peru. The

discovery of seven new *Blakea* species in the country represents a significant increase in science's understanding of the country's plant life and emphasizes the urgency of protecting the forests where they are found.

"This research adds greatly to our knowledge of the biodiversity in the Andes," said Fabián Michelangeli, Ph.D., Abess Curator of Tropical Botany and Director of the Institute of Systematic Botany at The New York Botanical Garden. "The fact that we can increase the number of species in a country for a genus with very showy flowers by almost 30 percent in a single publication is further evidence of the need to document the species of poorly known ecosystems."

The new species that are described and illustrated in the paper are *Blakea eden*, *Blakea quinta*, *Blakea wilderi* and *Blakea yumi* from Peru's Department of Amazonas, *Blakea pavida* and *Blakea rojasiae* from the Departments of Amazonas and Cajamarca, and *Blakea leoniae* from the Departments of Amazonas and San Martin. Most of the new species have been documented in only three or four locations, and researchers found one (*Blakea yumi*) in only one location within a protected area. Many of the high-altitude cloud forests in which the species grow are under increasing threat of being cut down as agriculture and livestock operations encroach on unprotected natural areas.

These forests are known for their high levels of endemic species—that is, species that can be found nowhere else. Most of the forests where the new species are found are outside government parks and conservation areas, and they are all threatened. Cloud forests are especially important ecosystems because the headwaters of many rivers used for irrigation, drinking water, or other uses are found there.

Using the criteria of the International Union for Conservation of Nature, which maintains the Red List of the world's threatened plant, fungal, and animal species, Dr. Michelangeli and his colleagues believe that *Blakea pavida*, *Blakea quinta*, and *Blakea yumi* should be recognized as Critically Endangered, meaning the species are at severe risk of going extinct in their wild habitats. The remaining four species should be considered Endangered, they say.

The researchers used plants collected during field trips and dried, preserved herbarium specimens to distinguish new from existing species. As part of the research, Dr. Michelangeli, a leading authority on the Melastomataceae family, used the scanning electron microscope at NYBG's Pfizer Plant Research Laboratory to study detailed aspects of plant specimens that allowed the researchers to further distinguish the species from close relatives.

In the paper, lead author Robin Fernandez-Hilario, a Ph.D. candidate at the Federal University of Paraná in Curitiba, Brazil, and co-authors note that in the last 30 years, a considerable number of new Melastomataceae species have been documented in Peru, but the genus *Blakea* has been underrepresented in these discoveries. Among the reasons they cite for this gap is the fact that *Blakea* species tend to be epiphytic plants—meaning they grow on other plants—that can be difficult to find in high canopy forests. Also, exploration and collection in highly diverse areas such as the Andean forests has been lacking.

In addition to NYBG and the Federal University of Paraná, the research team was drawn from institutions in Peru and China.

"Taxonomic and chorological novelties in *Blakea* (Melastomataceae: Pyxidantheae) from Peru with a list of species for the country," is available at this link: https://doi.org/10.11646/phytotaxa.635.1.1

About The New York Botanical Garden

The New York Botanical Garden (NYBG) has been a connective hub among people, plants, and the shared planet since 1891. For more than 130 years, NYBG has been rooted in the cultural fabric of New York City, in the heart of the Bronx, its greenest borough. NYBG has invited millions of visitors to make the Garden a part of their lives, exploring the joy, beauty, and respite of nature. NYBG's 250 acres are home to renowned exhibitions, immersive botanical experiences, art and music, and events with some of the most influential figures in plant and fungal science, horticulture, and the humanities. NYBG is also a steward of globally significant research collections, from the LuEsther T. Mertz Library collection to the plant and fungal specimens in the William and Lynda Steere Herbarium, the largest such collection in the Western Hemisphere.

The plant people of NYBG—dedicated horticulturists, enthusiastic educators, and scientific adventurers—are committed to helping nature thrive so that humanity can thrive. They believe in their ability to make things better, teaching tens of thousands of kids and families each year about the importance of safeguarding the environment and healthy eating. Expert scientists work across the city, the nation, and the globe to document the plants and fungi of the world—and find actionable, nature-based solutions to the planet's dual climate and biodiversity crises. With eyes always looking forward, they train the next generation of botanists, gardeners, landscape designers, and environmental stewards, ensuring a green future for all. At NYBG, it's nature—or nowhere.

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The New York Botanical Garden is located at 2900 Southern Boulevard, Bronx, New York 10458. For more information, visit nybg.org

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