

Hidden Inca treasure: Remarkable new tree genus discovered in the Andes

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New canopy tree genus *Incadendron esseri* shown in this altitudinal transect of Manu National Park in Peru. Credit: Wake Forest University

Hidden in plain sight - that's how researchers describe their discovery of a new genus of large forest tree commonly found, yet previously scientifically unknown, in the tropical Andes.

Researchers from the Smithsonian and Wake Forest University detailed their findings in a study just released in the journal *PhytoKeys*.

Named *Incadendron esseri* (literally "Esser's tree of the Inca"), the tree is a new genus and species commonly found along an ancient Inca path in Peru, the Trocha Unión. Its association with the land of the Inca empire inspired its scientific name.

So how could a canopy tree stretching up to 100 feet tall and spanning nearly two feet in diameter go undetected until now?

"Incadendron tells us a lot about how little we understand life on our planet. Here is a tree that ranges from southern Peru to Ecuador, that is abundant on the landscape, and yet it was unknown. Finding this tree isn't like finding another species of oak or another species of hickory—it's like finding oak or hickory in the first place," said Miles Silman, the Andrew Sabin Family Foundation Presidential Chair in Conservation Biology at Wake Forest.

"This tree perplexed researchers for several years before being named as new. It just goes to show that so much biodiversity is unknown and that obvious new species are awaiting discovery everywhere - in remote ecological plots, as well as in our own backyards," said Kenneth Wurdack, a botanist with the Smithsonian's National Museum of Natural History.



Fruits and leaves of *Incadendron esseri*, new tree genus found in Peru and Ecuador. Credit: Jason Houston

The tree belongs to the spurge family, Euphorbiaceae - best known for rubber [trees](#), cassava, and poinsettias - and like many of its relatives, when damaged also bleeds white sap, known as latex, that serves to protect it from insects and diseases.

Its ecological success in a difficult environment suggests more study is needed to find the hidden secrets that are often inherent in newly discovered and poorly known biodiversity.

Currently the *Incadendron* is common in several research plots under intensive study as part of the Andes Biodiversity and Ecosystem

Research Group, an international Andes-to-Amazon ecology program co-founded by Silman.

For nearly 25 years, Silman has worked to gain greater understanding of Andean species distributions, biodiversity, and the response of forest ecosystems to climate and land use changes over time.



Incadendron esseri branch. Credit: Wake Forest University

"While *Incadendron* has a broad range along the Andes, it is susceptible to climate change because it lives in a narrow band of temperatures. As temperatures rise, the tree populations have to move up to cooler temperatures," said Silman.

One of the study's co-authors, William Farfan-Rios, is a Wake Forest graduate student researching tropical forest dynamics and responses to changing environments along the Andes-to-Amazon elevational gradient. Discovering the *Incadendron* hits particularly close to home for the Cusco, Peru-native. Not only is the [new genus](#) vulnerable to climate change, but it is also threatened by deforestation in nearby areas.

"It highlights the imperative role of parks and protected areas where it grows, such as Manu National Park and the Yanachaga-Chemillén National Park," he said. "Hopefully our ongoing study of the *Incadendron* and the intensive long-term forest monitoring will contribute to best practices in reforestation and [forest](#) management."

More information: Kenneth J. Wurdack et al, *Incadendron* : a new genus of Euphorbiaceae tribe Hippomaneae from the sub-Andean cordilleras of Ecuador and Peru, *PhytoKeys* (2017). [DOI: 10.3897/phytokeys.85.14757](#)

Provided by Wake Forest University

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