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News from The New York Botanical Garden’s Plant Science Program Demonstrates the Institution’s Foundational Work in Addressing the Dual Biodiversity and Climate Crises

Recent Developments Include New Species Discoveries, an Artificial Intelligence Collaboration, New Publications by NYBG Scientists, and More



The state-of-the-art Pfizer Plant Research Laboratory at The New York Botanical Garden (NYBG Photo)

Bronx, NY—The New York Botanical Garden (NYBG) is home to one of the greatest plant science research programs in the world. The work of NYBG scientists takes them near and far, from studying plant DNA in our state-of-the-art laboratory to exploring ecosystems in dozens of other countries. NYBG’s collections, including the William and Lynda Steere Herbarium and LuEsther T. Merz Library, comprise one of the most significant holdings of botanical knowledge in the world. The research of NYBG scientists is foundational to addressing the dual climate and biodiversity crises, and plants and fungi offer solutions that the world needs *right now*. NYBG’s scientists and science staff are featured in this recent brief video: <https://youtu.be/g0n2dtsyWYc?si=ZxDfA1Sno7Y5DhtY>

Below are new and noteworthy developments involving NYBG’s plant science program and its researchers, including new plant species discoveries, an exciting artificial intelligence collaboration, spotlights on NYBG’s research collections, recent publications by NYBG scientists, and more.

Botanical Breakthroughs

Learn about new discoveries and innovations in plant science and how they serve as the foundation for understanding biodiversity.

- **NYBG 2023 New Species Review**

In 2023, NYBG scientists described 22 species of plants and five genera—groups of closely related species—that were new to Western science. Matthew Pace, Ph.D., Assistant Curator of the Steere Herbarium, summarized the discoveries in this post on the Herbarium’s blog *The Hand Lens*:

<https://sweetgum.nybg.org/science/the-hand-lens/explore/narratives-details/?irn=7731>

- **NYBG’s Collaboration with Break Through Tech**

NYBG is currently collaborating on an artificial intelligence project with Break Through Tech, an initiative of Cornell Tech that fosters gender equity in the tech industry, to use machine learning to classify a dataset of nearly 123,000 images, including many digitized images of the Herbarium’s preserved plant specimens. Learn more about the collaboration here:

<https://www.nybg.org/planttalk/plant-science-meets-artificial-intelligence/>

Science in Action

Conserving and restoring plants and nature is an investment for all. Two NYBG scientists show how ecosystems are not only important in and of themselves but also for the benefits they can provide.

- **Super Forests: Protecting Mangroves Protects Everyone**

Only one type of forest directly connects land use to oceans: mangroves. Associate Curator Brad Oberle, Ph.D., explains why mangroves contribute disproportionately to climate change resilience and why conserving and restoring these threatened habitats is more important than ever.

<https://www.nybg.org/planttalk/super-forests-protecting-mangroves-protects-everyone/>

- **A No-Brainer for Climate Action: Nature Your City**

It may seem ironic, but the best way to make bigger, more efficient, more livable cities is to restore some of the nature that predates the metropolis. NYBG Vice President for Urban Conservation Eric Sanderson, Ph.D., and Urban Conservation Assistant Lucinda Royte describe NYBG’s four approaches to urban conservation.

<https://www.nybg.org/planttalk/a-no-brainer-for-climate-action-nature-your-city/>

NYBG Collections

Meet the Director of the William and Lynda Steere Herbarium and learn about the fascinating history behind one of collections in the LuEsther T. Mertz Library.

- **Scientist Spotlight: Emily Sessa, Ph.D.**

Emily Sessa, Ph.D., is the Patricia K. Holmgren Director of the Steere Herbarium, the largest research collection of preserved plant specimens in the Western Hemisphere. As this profile on NYBG's *Plant Talk* blog explains, she's also a dedicated researcher who wants to discover more about a critically important group of plants: the ferns. <https://www.nybg.org/planttalk/how-ferns-inspired-dr-emily-sessas-lifelong-career/>

- **Erasmus Darwin and the Wedgwood Medallion**

Erasmus Darwin, grandfather of Charles Darwin, was an important 18th century British philosopher, poet, physician, botanist—and abolitionist. Read about the anti-slavery significance of an illustration in his book-length poem *The Botanic Garden*, part of the Mertz Library's large collection of Darwin-related material. <https://www.nybg.org/planttalk/erasmus-darwin-and-the-wedgwood-medallion/>

Recent Publications by NYBG Scientists

NYBG researchers advance science's understanding of biodiversity by publishing their work in some of the world's leading scientific journals. Here are two recent examples.

- ***Science*: “The global distribution of plants used by humans”**

In a study that was featured on the cover of the prestigious journal *Science*, Mauricio Diazgranados, Ph.D., NYBG's Chief Science Officer and Dean of the International Plant Science Center, joined with colleagues to examine the distribution of nearly 36,000 plant species used by humans and the implications for conserving not only those species but also the biocultural knowledge of the humans who rely on them. <https://www.science.org/doi/10.1126/science.adg8028>

- ***Phytotaxa*: “Taxonomic and chorological novelties in *Blakea* (Melastomataceae: Pyxidanthae) from Peru with a list of species for the country”**

Fabián Michelangeli, Ph.D., NYBG's Abess Curator of Tropical Botany and Director of the Institute of Systematic Botany, and his colleagues described seven rare new plant species found only in highly threatened forests of the Andes Mountains in Peru. The researchers believe the new species should be classified as either Endangered or Critically Endangered, one step away from being extinct in the wild. <https://phytotaxa.mapress.com/pt/article/view/phytotaxa.635.1.1#title-0>

A press release about the seven new species and their significance is available here: https://www.nybg.org/content/uploads/2024/03/NYBG-Scientist-and-Colleagues-Discover-Seven-New-Peruvian-Plant-Species_ADA.pdf

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](https://www.nybg.org)

The New York Botanical Garden is located on property owned in full by the City of New York, and its operation is made possible in part by public funds provided through the New York City Department of Cultural Affairs. A portion of the Garden's general operating funds is provided by The New York City Council and The New York State Office of Parks, Recreation, and Historic Preservation. The Bronx Borough President and Bronx elected representatives in the City Council and State Legislature provide leadership funding.

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