



THE INTERNATIONAL PALM SOCIETY

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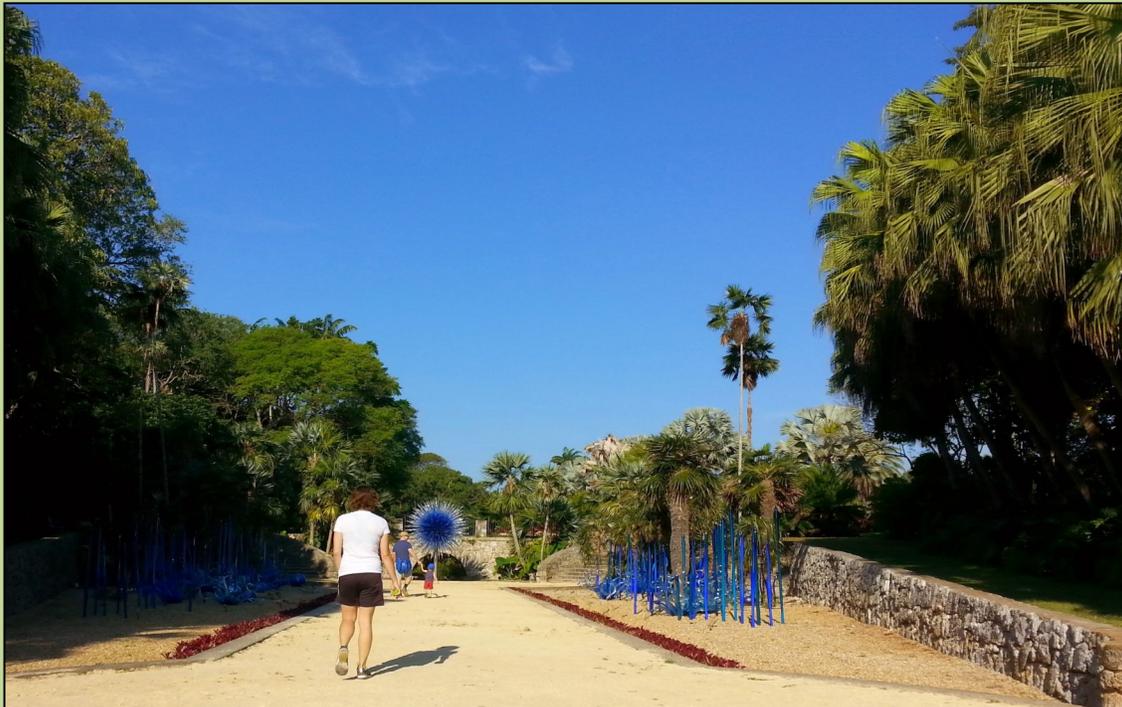
NEWSLETTER

Gardens, whether public or private, are museums: all of them are a part of our cultural and biological heritage. This month we share some comments reminding us of the importance of our gardens.

Threats to the collections!

A tragedy occurred in the National Museum of Brazil on September 2nd, reminding us that collections face threats (in this case, a devastating fire) and that they can be irremediably lost if a major tragedy occurs. Botanical gardens are living museums, and they usually consist of two components: living collections (the garden) and non-living collections (the herbarium and the library). The threats facing the two components are different.

Read more: [Fire Devastates Brazil's Oldest Science Museum](#), Nat. Geographic Soc.



Threats to collections!

Although there are gardens with good greenhouses and other technologies that allow them to grow almost any plant, many gardens were started because local environmental conditions were naturally suitable for their particular collections. These conditions were not expected to change.

Some of the most important palm collections in the world are in Florida, USA. They are threatened not just by the likely increase in frequency and severity of hurricanes, but also by sea-level rise. Both are the expected results of climate change due to global warming.

Dr. Patrick Griffith, Director of the Montgomery Botanical Center (MBC), and co-authors have written an article about the topic and projections for the next 100 years: [Plant Collection “Half-life:” Can Botanic Gardens Weather the Climate?](#)

Water is another necessity for living collections. Changes in environmental and climatic conditions may lead to water shortages in urban areas, where the use of water by humans will likely be prioritized over use by botanic gardens. In the case of MBG, fresh water for irrigating plants is available from just one of three wells, the others being affected by salinization.



Dr. Griffith's model predicts that MBC will lose one third of its area to rising sea by 2117. [Photo](#) in this page by [Deborah Agustin](#) (CC BY 2.0).

Photo cover page: Fairchild Tropical Botanic Garden, FL, USA, by Daniel Meza.

Threats to collections!

Some plants are highly endangered in wild. Ideally they should be preserved in their natural habitats, but until loss of ecosystems is controlled, ex situ conservation of plants in places such as botanical gardens is critical.

Read more: [The biggest palm collection in the nation is in Miami. Can it be saved from sea rise?](#) By Patrick Farrell.

Extreme weather events, such as hurricanes, floods and droughts, are more likely to occur as the climate changes. Below: Lost of Ylang-Ylang tree (*Cananga odorata*) due to Hurricane Irma in 2017, photos © taken from the Griffith et al. article: [Plant Collection “Half-life:” Can Botanic Gardens Weather the Climate?](#)



Threats to collections!

Collections in museums and botanic gardens are not just at the mercy of changing environmental conditions but of institutional changes as well. One ongoing example is the current status of the Caracas Botanical Garden (CBG) in Venezuela.

This garden, as part of the “University City of Caracas,” was declared World Heritage Site by UNESCO in 2000 and for many years housed reference collections of palms and other plants. Amid the general Venezuelan situation, the garden has been hit hard by the crisis, and its collections are at great risk. The main threat is a shortage of water (Caracas has restrictions on water service, and human use is prioritized over plant watering); however, other institutional and financial aspects are also affecting the garden.

The director of the CBG, Dr. Mauricio Krivoy, and his staff, along with volunteers, are working tirelessly to save the garden, but their efforts have not been enough to prevent degradation and the decline of the collections.

One of the most remarkable icons of the CBG, the Avenue of Chaguaramo palms (*Roystonea oleracea*) is almost lost, photo left taken in 2009, photo right in June 2018. [Photo left](#) taken by Daniel Meza. [Photo right](#) © taken in June 2018 by David Clulow.



Threats to collections!

Read more: [Casi la mitad de plantas del Jardín Botánico de Caracas se han marchitado](#) (in Spanish) by Jorge Pérez.

The loss of non-living collections by any incident represents a loss of years of research. Losses of priceless material, as occurred in the Berlin herbarium (B) during WWII, are irrecoverable.

Read more: [History of the Berlin herbarium](#).

Photo right by Daniel Rengel, sample of *Acrocomia aculeata* collected in 1978, at the VEN herbarium, located in CBG (2009.)

Research is usually an important part of botanical gardens. Lack of funding for research at CBG might impede further discoveries in the Venezuelan flora, and by extension, the world. Photo below by Daniel Meza: Herbarium VEN (2009.)



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Ceroxylon quindiuense — Cocora Valley — Colombia
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