

Working out *Butia* Puzzles from Paraguay to Argentina

By Larry Noblick
MBC Palm Biologist

Why *Butia*? In *An Encyclopedia of Cultivated Palms*, Robert Riffle and Paul Craft describe the genus *Butia* as being “one of the most cold hardy of all of the pinnate palms” and worth considering as a potentially valuable landscape palm for the U.S. and, therefore, worthy of further study.

Many palms in this genus have gracefully arching, bluish leaves and distinctly rounded crowns, making them wonderfully attractive. The genus’s only real drawback is that most are slow growing and, with some exceptions, do not have the most attractive looking trunk, especially when young.

As a palm scientist, the main reason I am attracted to this genus is that I like puzzles, and there are so many interesting questions surrounding this genus. For example, it was initially believed that *Butia* was the ancestral genus to the more abundant *Syagrus* genus, but research recently uncovered that it’s more likely *Butia* evolved from *Syagrus* species rather than giving birth

to them. The concentration of all species in southern Brazil, Paraguay, Uruguay and northeastern Argentina indicates a more recent origin or radiation of the species.

The Hunt for *Butia Yatay* in Paraguay

Argentina and Paraguay is home to several species of *Butia*—and a lot of *Butia* taxonomic confusion. One problem centers around *Butia yatay*, one of the most robust and I think the most attractive species of the genus. Originally described by Martius from Argentina where *B. yatay* is abundant, it has often been confused with *Butia paraguayensis*. This is a puzzle I was determined to solve. But first I had to determine if *Butia yatay* truly existed in Paraguay.

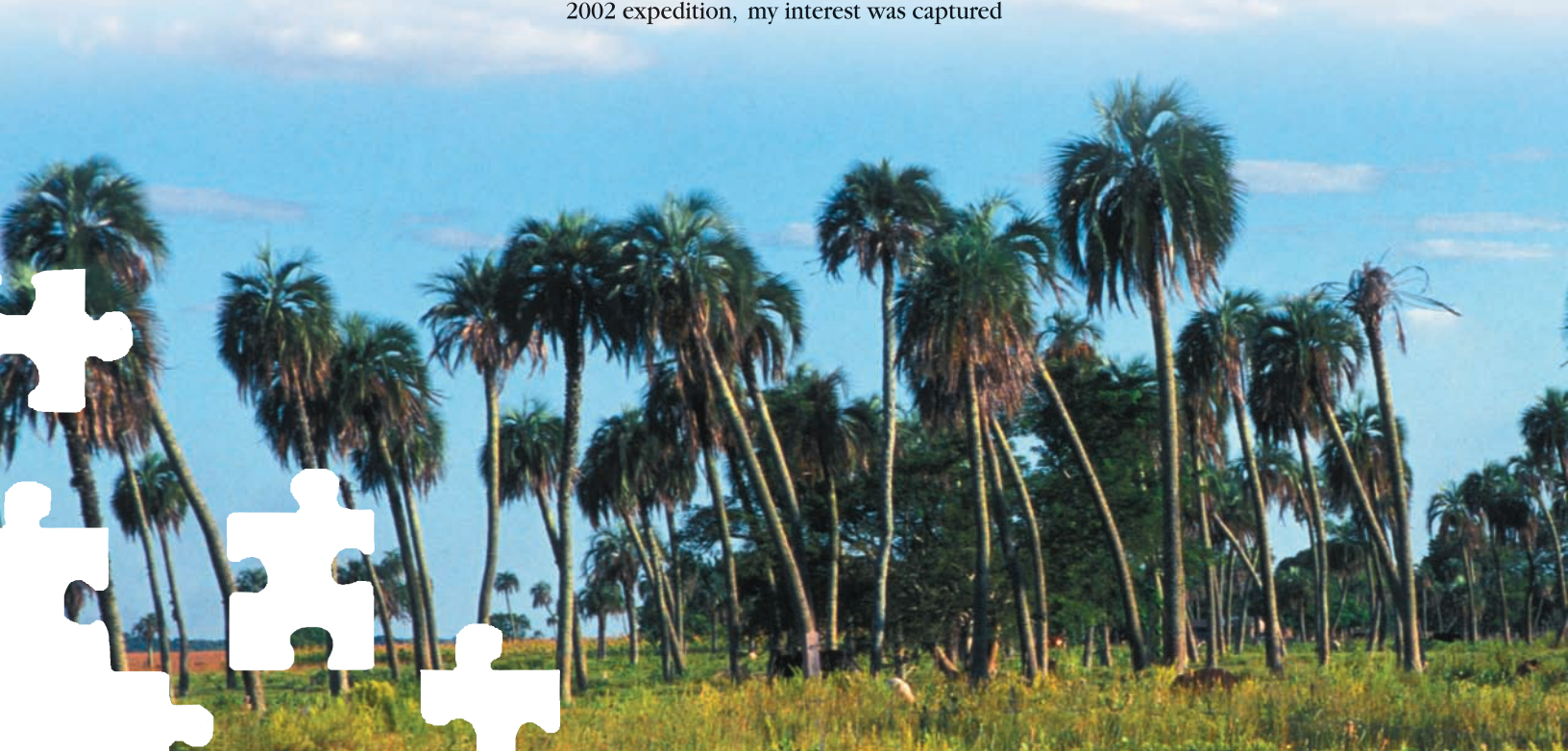
I could not find evidence from available herbarium material that a genuine *Butia yatay* has ever been collected in Paraguay, though there are reports of population sightings. On the last day of a 2002 expedition, my interest was captured

as a Paraguayan palm enthusiast talked about populations of a robust *Butia* in the swampy southern state of Neembuco, an area I had not yet explored. I also stumbled upon a statement made by the Paraguayan ecologist, Michalowski, in a 1958 article in *Principes*, who wrote of large *campos palmares* of *Butia yatay* in the southern Paraguayan state of Misiones (adjacent to Neembuco).

Anxious to investigate both states, I led an expedition to Argentina and Paraguay in 2004 thanks to a grant from the International Palm Society. During that trip, I discovered that the “robust *Butia*” (or, as I found, not so robust) from Neembuco was not *B. yatay* at all but is likely an unrecognized, yet distinct, Lower Parana River form of *Butia*, which I am in the process of trying to adequately describe.

Next, I headed for Misiones to investigate Michalowski’s 1958 statement. I came upon some of the largest and most robust *Butia* specimens ever seen in Paraguay. I also found Michalowski at least partially correct when I found a *campos palmares* in Ayolas, Misiones in Paraguay to be genuine *Butia yatay*.

While examining a sample of their inflorescence I could compare it to a now mature population growing at MBC that was propagated from seeds collected in this area during a 1996 MBC expedition, as well as to numerous herbarium specimens of *B. yatay* from Argentina. The wild population in Ayolas produced the same characteristic branches with densely congested flowering clusters that are typical of inflo-



rescences of this species. I could, therefore, conclude that Paraguay is home to genuine *Butia yatay*.

Investigating Across Two Borders

When first attempting to come to terms with variations seen in the *Butia yatay*/*Butia paraguayensis* complex, I found great difficulty making any determination from sketchy herbarium specimens. The only way to resolve it was to intensely collect from the populations in southern Paraguay and northern Argentina.

Glassman (1979) suggested that *B. paraguayensis* may only be a smaller variety of *B. yatay* since the species is complex and extremely variable. After spending field time with both buteas, I found evidence that disagrees with Glassman's theory. I found both species are distinct in their own right. Hybridization, though, is still a possibility with crosses and back crosses between the two species or with other *Butia* forms that I am in the process of describing. In order to understand this questionable "hybridization," I needed to first understand both parents.

Putting it All Together at MBC

Fortunately I was able to collect seeds from populations over a broad range to introduce into MBC's collection for further research. Together with the observations I carefully documented in the field and new herbarium specimens I made, I have everything I need to finally piece together the scientific picture of this intriguing palm puzzle. Look for my results in an upcoming research paper in 200__.

Exploring Western Panama

Jody Haynes
MBC Cycad Biologist

When I was hired as MBC's Cycad Biologist in 2003, I quickly came to understand the importance of choosing expedition destinations carefully and meticulously planning them several years in advance. Ironically, the two MBC expeditions I have undertaken to date have also convinced me that it is important to take advantage of opportunities that arise serendipitously.

My most recent trip to Panama in 2004 came about after a friend sent me digital images of some unusual Panamanian cycads. Because MBC had undertaken several expeditions to Panama in the past, I didn't place any priority on these plants until I showed the photos to one of my cycad-savvy friends. He was shocked to learn of cycads growing on beaches near saltwater, and encouraged me to contact the original photographer to obtain more information about the plants.

It turned out that the person who originally discovered and photographed the plants, Gregg Hamann, was an avid cycad enthusiast. To my surprise, he was willing to fund and assist on a 10-day expedition to Panama to document and collect seeds of this intriguing plant for MBC's Cycad Collection. With considerable additional help from Dr. Alberto Taylor, cycad researcher at the University of Panama and long-time MBC collaborator, and cycad horticulturist, Greg Holzman, the expedition was planned in record time. In September 2004 we headed off to investigate the islands and the mainland of Bocas del Toro in western Panama for the reported cycads and collect ripe seeds from both palm and cycad populations.

This was my first trip to Panama and I was amazed at the rich plant diversity packed into such a small country—and how much we could accomplish in such a short time. For palms, we collected 259 seeds representing six taxa and seven new accessions, including *Colpothrinax cookii*, a new taxon for MBC. But it was the cycads that gave us our most exciting find.

We located, as Gregg's original photos promised, a beautiful "groove-leafed" *Zamia* cycad species, not only thriving on salt-laden beaches but also inland in a very different habitat. With that discovery came a lot of taxonomic confusion. We could confidently identify a mainland population of *Zamia skinneri* and found one that resembled *Z. neurophyllidia*, but there were other populations with significant differences. At least undescribed species are present that I working with my fellow collaborators to describe. We were able to document and collect from four island populations and two mainland populations including the plant's pollinator beetles.

Panama, I learned, is world famous for its biodiversity—one of the richest in the Americas with over 10,000 vascular plant species. I was thrilled from having experienced just fraction of it. They say that a Panama experience can only be surpassed if you come back, and I am very much looking forward to it.



Jody digitally captures his colleagues, (front to back) Gregg Hamann, Greg Holzman, and the guide, Rogelio as they stow herbarium specimens of the "groove" *Zamias*.

