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From Inches To Yards: Costa Rica's Simple-leaved Palms and More

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Though only 185 miles across at its widest point, and covering a mere 20,000 square miles, Costa Rica possesses geographical, cultural, and ecological diversity unmatched by countries 10 times its size. From breathtaking beaches to active volcanoes and lush rain forests, from high elevation cloud forests to dry tropical forests and mangroves, Costa Rica's ecological diversity is great enough to support tens of thousands of plant and animal species. Although home to about 9,000 species of plants, countless more are yet undiscovered. About a hundred species of palms are native to Costa Rica, and their diversity is particularly impressive.

Perhaps the most striking difference is illustrated by comparing two simple-leaved palms, *Chamaedorea minima* and *Bactris militaris*. The bifid leaves of the endangered *Chamaedorea minima* are but a few centimeters long and among the smallest in the palm family, while those of the spiny, rare *Bactris militaris* are over three meters long and among the largest. These were just two of the palms we hoped to see on our two-week trip to Costa Rica in November, 1994.

Mark had worked at the Jardín Botánico Robert y Catherine Wilson (commonly known as simply the Wilson Garden) in the summer of 1993, cleaning, labeling, and adding to their famous palm collection. Mark designed and implemented a *Chamaedorea* collection and accompanying database. The latter was designed to provide cultural information and accession data on each species added to the collection. In honor of his contributions, the Jardín's director, Luis Diego Gomez, bestowed upon Mark the title of Honorary *Chamaedorea* Curator. Prior to Mark's work there, he and Don had discussed Costa Rica's palms, particularly chamaedoreas. Don asked Mark to look for several

species of *Chamaedorea* during his 10-week stay in Costa Rica that might be new to science (see accompanying article about new Costa Rican *Chamaedorea*), were thought to be extinct (*C. minima*, *C. stenocarpa*), or were little known in the Costa Rican forests (*C. pygmaea*, *C. sullivianorum*, *C. tenella*, *C. zamorae*). Mark was successful in finding all that Don had asked, and even more. Thus, we were off to Costa Rica in late 1994 to investigate the chamaedoreas Mark had tracked down in 1993 as well as others Don wanted to see. Another object of our trip was to locate and document *Bactris militaris* at its type locality in the Golfo Dulce region of southeastern Costa Rica. Seen only once in the wild since it was discovered and named over 50 years ago, we hoped to collect leaves and flowers for several herbaria as well as seeds for botanical gardens.

We divided our two-week stay in Costa Rica in half, spending the first week in the northwest, the second week in the southeast, and a few days in between exploring around the capital San José and visiting La Selva Biological Reserve and Field Station in the Atlantic lowlands.

The Northwest

Our two objectives in the northwest were to locate simple-leaved forms of *Chamaedorea dammeriana* and a large *Chamaedorea* with nearly simple leaves, which bore a resemblance to two pinnate-leaved species, *C. selvae* from the Costa Rican Atlantic lowlands and *C. lucidifrons* known only from Panamá. Accompanying us on the first part of our trip was Gerardo Herrera, collector *extraordinaire* for the Costa Rican National Museum and Herbarium in San José.

We left San José for the north full of antici-

pation but under cloudy, threatening skies. By the time we had reached our first destination in the Tilarán mountain range, the skies had parted and it was pouring rain, a deluge that would stay with us for a good part of our two-week stay. In fact, the two weeks turned out to be one of the rainiest periods in Costa Rican history. Apparently, two tropical waves or depressions had settled over Costa Rica, one on the Atlantic and the other on the Pacific, pummeling the country with nearly nonstop rain. We had never been so sweaty, muddy, and wet; we were like pigs in the forest, wallowing in the mud and water. Despite the adverse conditions we were successful in locating the various chamaedoreas, and several added bonuses, too, although picture taking in the pouring rain required patience and a companion with an untiring, steady arm to hold the umbrella.

Our first stop was to locate the simple-leaved form of *Chamaedorea dammeriana*. Although Don had collected and photographed pinnate-leaved forms of this highly variable species in the eastern Atlantic lowlands of Costa Rica, he wanted to see the simple-leaved form since they were so striking with their compact crown of up to 15, broadly spreading, simple leaves. Unfortunately, our first stop produced no *C. dammeriana*, but we did find some unexpected treasures. Upon entering the forest the first palm we saw was the beautiful *C. amabilis* (Fig. 1). Close by grew another beautiful, dwarf, simple-leaved species, *C. pumila* (Fig. 3). Perhaps the highlight of this stop, though, was finding *C. scheryi* (Fig. 4) and *C. undulatifolia* (Fig. 2) growing side by side. Several palm researchers had raised doubts about the differences between *C. scheryi* and *C. undulatifolia*, so it was comforting for Don to find them both growing together and easily distinguishable with no intermediate forms present. Additional exploration produced the attractive *Calyptrogyne trichospadix* and *Chamaedorea deckeriana*.

We descended farther into a large valley and, as the day was drawing to a close, succeeded in locating the stunning, simple-leaved form of *Chamaedorea dammeriana* (Fig. 5). Growing with the simple-leaved form was, to our surprise, a pinnate-leaved form of the same species (Fig. 6). Here was a case where each of the two forms of the same species was so distinct that, to the untrained eye, they could easily be described as two different species. One may ask if they are so distinct why they are not considered two species. The answer lies in the simple-leaved nature is a variable feature.

Simple and pinnate leaves are found on the same individual and there is a wide spectrum of intermediate forms between the two extremes; there are no differences between inflorescences, flowers, and fruits of the leaf forms, characters much more important in distinguishing species.

Our experience with the two leaf forms of *Chamaedorea dammeriana* set the tone and was a recurrent theme for much the remainder of our trip, especially with three other species we had yet to encounter, *C. lucidifrons*, *C. pittieri*, and *C. pygmaea*. The lesson was to learn to appreciate variability, especially that of a vegetative nature, when developing a species concept. Another lesson we learned was not to let your enthusiasm searching for palms keep you out in the field so long that you lose track of time. Nightfall quickly overcame us as we were examining and photographing *C. dammeriana*. Before we could finish our work and get back to the car it had become pitch black. You could not see your hand an inch in front of your face. Fortunately, Mark had had the foresight to carry a small pocket flashlight with him. It proved invaluable in enabling Don to spot and focus on palms for photographs and in finding our way back to the car. As we stumbled back toward the car, tripping over logs and vines, we were ever mindful of poisonous snakes, several kinds of which are most active in the early evening.

The next morning dawned cloudy and rainy as we headed farther into the Tilarán range to track down a strange and elusive chamaedorea with nearly simple, big leaves. In habit, it bore a resemblance to two pinnate-leaved species, *Chamaedorea lucidifrons* and *C. selvae*. All three are solitary, moderately tall chamaedoreas with nearly identical inflorescences, flowers, and fruits. The long-stalked inflorescences are quite conspicuous since they arise well below the leaves from bare stem. We immediately found the specimen with large, nearly simple leaves (Figs. 7 and 8), and further exploration revealed additional specimens displaying a wide degree of leaf division; some had up to seven leaflets on each side, others were simple, and, of course, like the previous day with *C. dammeriana*, there was a host of intermediate forms. Don was pretty well convinced these plants were but a variant of *C. lucidifrons*, dramatically increasing the range of this species heretofore known only from Panamá and greatly adding to its vegetative description. What remained to be seen was how the lowland *C. selvae* compared with the variable *C. lucidifrons*. Growing nearby



1. *Chamaedorea amabilis*, wet mountain rain forest, Tilarán, Hodel et al. 1303. 2. Leaflet margins of *Chamaedorea undulatifolia*, are strikingly undulate, wet mountain forest, Tilarán, Hodel et al. 1305. 3. Fruiting plant of *Chamaedorea pumila*, wet mountain rain forest, Tilarán, Hodel et al. 1315. 4. *Chamaedorea scheryi*, has leaflets with straight margins, wet mountain rain forest, Tilarán, Hodel et al. 1301.

were *Calyptrogyne trichospadix*, *Chamaedorea warscewiczii*, *C. scheryi*, the ever-present *C. pinatifrons*, and a cycad, *Zamia skinneri*.

The final day in the northwest found us in the rain again, this time on the Pacific side of the Tilarán range at 5 000 feet elevation in wind-blown cloud forest. There we found *Chamaedorea parvifolia*, a diminutive but rather handsome species with a short, curved, mostly subsurface stem topped by a neat, compact but leafy crown of thickish, blue-green leaves (Fig. 9). The leaf litter and humus layer were 12-18 inches deep at this site, and most *C. parvifolia* had their short stems completely buried, giving the appearance of a

stemless plant with leaves and inflorescences arising directly from the ground. Only a few, much older plants had visible stems with congested, prominent nodes.

We returned to San José, dropping Gerardo off at his home west of the capital. We then spent two days in San José, cleaning up, laundering clothes, and drying out. One of the days we drove over the mountains from San José to La Selva in the Atlantic lowlands to search for *Chamaedorea selvae*. Surprisingly, the day was sunny and warm, a welcomed respite from the previous days of cool, mountain rain. We marveled at the tall canopy palms, *Euterpe*, *Socratea*, and *Iriartea*, poking



5. Simple-leaved forms of *Chamaedorea dammeriana* are neat, compact plants holding many leaves, wet forest, Tilarán, *Hodel et al.* 1307. 6. Pinnate-leaved form of *Chamaedorea dammeriana* grows with simple-leaved form, wet forest, Tilarán, *Hodel et al.* 1308. Note hand and flashlight to spot subject in forest after nightfall. 7. *Chamaedorea lucidifrons* has pinnate or nearly simple leaves with large terminal lobes, wet mountain forest, Tilarán, *Hodel et al.* 1319. 8. Inflorescences of *Chamaedorea lucidifrons* are held well below the leaves, wet mountain forest, Tilarán, *Hodel et al.* 1323.



9. *Chamaedorea parvifolia* has a short stem buried in the leaf litter and topped with a compact, rosettelike crown of fairly sturdy, thickish leaves, moist cloud forest, Puntarenas, Hodel *et al.* 1326. 10. High in cloud forest in the Talamanca Mountains, and with litter-trapping, stiffly ascending leaves and a whitish crownshaft, an old specimen of *Chamaedorea pittieri* with emergent stem is not too unlike some New Caledonia or Madagascar palm, Hodel & Binder 1332. 11. *Chamaedorea pygmaea*, mature, fruiting plant with one-foot-long leaves, moist cloud forest, Puntarenas, Hodel & Binder 1344.

their majestic crown above the verdant trees as we passed through Braulio Carrillo National Park down to La Selva. A virtual cornucopia of palms, La Selva supports a wide array of genera such as *Welfia*, *Astrocaryum*, *Bactris*, *Geonoma*, *Desmoncus*, *Calyptrogyne*, *Euterpe*, *Socratea*, *Iriartea*, *Asterogyne*, *Pholidostachys*, and *Synechanthus* among others. *Chamaedorea* is little evident at La Selva although we did see the ever-present *C. pinnatifrons* and *C. tepejilote*. *C. selvae* proved more difficult to find, but after several hours of looking we finally found one fruiting specimen, and close examination confirmed Don's theory that it is but a low-elevation form of *C. lucidifrons*.

The Southeast

After our hiatus in San José, we headed to the southeastern part of Costa Rica, in the rain of course, to search for new or elusive species of

Chamaedorea and the rare *Bactris militaris*. The southeastern part of Costa Rica held a special fascination for us. Botanically, it is a unique and mysterious region, and harbors a rich palm flora. Many palm species take on a slightly different appearance and occur at lower elevations there than where they occur farther to the north and south. Some are even endemic to the region and found nowhere else on the globe. We headquartered at the Jardín Botánico Robert y Catherine Wilson near San Vito, and made daily forays up into the Talamanca mountains, down to the Osá Peninsula and Golfo Dulce, or simply explored in forest remnants in the San Vito region.

One of our most exciting discoveries was high up in the Talamanca mountains. Don was traversing a stream in cool cloud forest when he let out an excited yell. "Mark, we have a new species of *Chamaedorea*, and it has a white crownshaft!" The key words *Chamaedorea*, new species, white



12. *Chamaedorea sullivaniorum* is rare in the lowland, Osá rain forest, Hodel & Binder 1349.

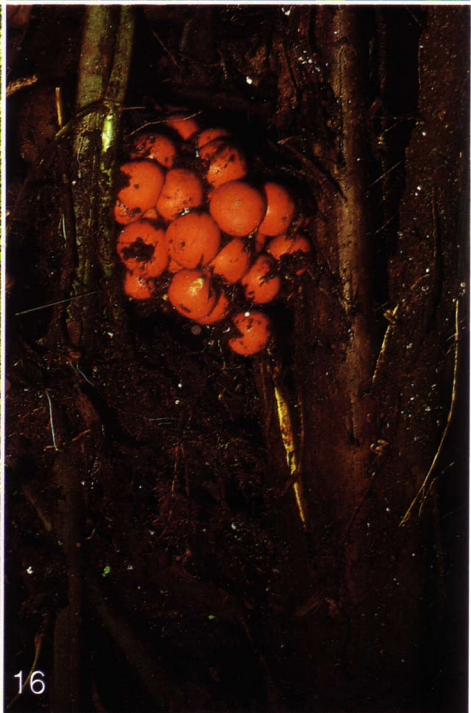
crowns shaft brought Mark crashing through the forest on a run. Although the plant turned out to be *C. pittieri*, not a new species, it was a significant find nonetheless because it was the first known record of *C. pittieri* in Costa Rica since it was collected there nearly 100 years earlier. The six-foot-tall visible stem, whitish leafbases, and curved inflorescences had misled Don (Fig. 10). Further exploration, however, turned up plants with little or no visible stem, greenish leaf bases, and straight inflorescences, all characters of the more typical *C. pittieri* in Panamá, as well as several individuals with intermediate features. To the untrained eye, one could easily think two species exist in this instance. The experience with *C. dammeriana* still fresh in our minds, though, our appreciation for natural variability and age-induced characters in defining species took another giant leap in importance.

On another day in the Talamancas, we pursued *Chamaedorea pygmaea* and a new species closely allied to *C. allenii*. First collected in the mid 1960s, the new species has orange, rough, corallike, nearly spiny fruits, which have attracted attention the few times it has been collected. Mark had seen and collected the spiny fruited *Chamaedorea* in 1993, so in little time we had relocated several fruiting specimens, made collections, and took photographs. Growing with the new species was the highly variable *C. pygmaea*. If there is one plant that symbolizes the great variability within some species of the genus, it must be *C. pygmaea*. At 5 500 feet elevation this species may have either simple or pinnate leaves, with blades up to four inches wide and eight inches long and inflorescences up to ten inches long (Fig. 11). At about 6 200 feet elevation, it seems to be

a different species altogether. While leaves may still be either simple or pinnate, they are, on average, much larger, measuring up to one foot across, two feet long, and with inflorescences up to two and a half feet long. Viewing the ends of the spectrum independently, one with leaves and inflorescences several inches long and the other with the same organs several feet long, one would conclude they are surely different species. While some of the differences are obviously age-induced, there are abundant intermediate forms and natural variability within this species. To see the several forms together, we were reminded of the variability that makes plying the waters of palm taxonomy so difficult and perilous, especially in the south of Costa Rica.

We turned our attention to the lowland forests of the Golfo Dulce and the Osá Peninsula for a few days. Of particular interest were three simple-leaved *Chamaedorea*, *C. tenella*, *C. sullivaniorum*, and *C. zamorae*. The first two were known from other countries, the former México and the latter Panamá and Colombia, while *C. zamorae* was not known from the wild. *C. tenella* is rare in the Osá, suffering from forest clearing and disturbance for farming, cattle, and mining, and overcollecting by enthusiasts. We found it only as scattered individuals, not a good sign for the future survival of the species. Equally scarce and suffering from the same ravages was *C. sullivaniorum* (Fig. 12), a close relative of *C. pumila* and *C. minima*. All three species occur in the Golfo Dulce region but, apparently at distinct altitudinal levels, *C. minima* being the highest and *C. sullivaniorum* the lowest. The three are similar in habit, differing mainly in the number of primary nerves in the leaf blade and some floral details. A study would seem to be in order, which would investigate what effect, if any, altitude plays in the expression of these diagnostic characters.

Growing close by but in greater abundance was *Chamaedorea zamorae*, originally described and named from cultivated plants. Don was especially glad to see this species in the wild since we were able to confirm its identity and provide a known locality for it. As with some other simple-leaved chamaedoreas we had encountered on the trip, *C. zamorae* often has pinnate leaves (Figs. 13 and 14), sometimes in combination with simple leaves on the same plant! Even with pinnate leaves, though, the plant is still a dramatic sight since the terminal lobes of each leaf are broad and conspicuous. Add the large, showy, orange fruits



13. A pinnae-leaved form of *Chamaedorea zamorae* with broad terminal lobes, lowland rain forest, Osá, *Hodel & Binder 1348*. 14. A simple-leaved form of *Chamaedorea zamorae*, lowland rain forest, Osá. 15. *Bactris militaris*, with 10-foot-long, straplike, simple leaves, swampy, lowland rain forest, Golfo Dulca, *Hodel et al. 1353*. 16. Inflorescence of *Bactris militaris* with red-orange, mature fruits is embedded in decaying organic matter and humus and harbors colonies of aggressive, biting ants, swampy lowland rain forest, Golfo Dulce, *Hodel et al. 1353*.

packed tightly together like an ear of corn and you have one stunning palm. A short distance away was *C. matae*, perhaps nothing more than a low-elevation variant of *C. warscewiczii*. However, the unusually broad terminal leaflets distinguish *C. matae*. A simple-leaved species of *Bactris*, probably a new species, grew nearby although in no great abundance.

We devoted another day in the Golfo Dulce to tracking down the fabled *Bactris militaris*. Although named nearly 50 years ago, this spiny, giant simple-leaved palm had never been recollected and documented, and the type locality had been much disturbed for planting bananas and rice. Armed with directions and encouragement from Ken Foster, who along with Nancy Edmonson, had made the only seed collections of this rare species 10 years ago, we headed into the lowland swamps of the Golfo Dulce accompanied by Elfie Schmid, a German botanist studying in Costa Rica. As we began the first leg of our search, a grim march through an overgrown rice paddy, the sun surprisingly blazed down from above, heating the humid air well into the upper 80s. We trudged along for nearly a mile, hopping from row to row of swampy soil in a vain effort to stay dry, until reaching the end of the rice paddy. Relieved to be out of the strong sun, we plunged into a nearly impenetrable thicket of overgrown marantas, heliconias, dieffenbachias, and vines, heading for a group of taller trees and, hopefully, good forest and the elusive *Bactris*.

Unfortunately, the thick vegetation blocked our view of the trees, making navigation all but impossible. We slowed to a snail's pace, hacking and pushing through the thick vegetation for about an hour. Numerous times we crossed a stagnant, sewerlike stream winding through the swamp. Ever mindful of snakes, scorpions, and spiders, and constantly attacked by mosquitos and biting gnats, we pressed on for a group of trees that we hoped marked good forest and *Bactris militaris*. Yet each time we approached a promising group trees our hopes would be dashed when it, too, proved nothing more than the same inhospitable swamp through which we had trudged for an hour. We began to think Ken Foster's memory had failed him or forest disturbance had been so severe in the intervening 10 years that *Bactris militaris* no longer existed. Finally, dejected and exhausted, we made our way back to the rice paddy and reassessed our position.

With lessened vigor and increased despair, we

reentered the swamp forest at a new location and again hacked and pushed our way through equally dense vegetation, always heading for that patch of good forest that would harbor the *Bactris* and that seemed just yards away. After a half hour of laborious travel and no sign of decent forest, let alone the *Bactris*, we once again returned to the rice paddy and decided to make one last attempt; either we would be successful or we would admit defeat and head back to the comforts of the Jardín. The latter alternative was beginning to look more like a real possibility, and a rather comfortable one at that. Moving another 200 yards along the edge of the rice paddy, though, we entered the swamp forest a third and final time and renewed our search. Our initial push into the forbidding vegetation seemed no different than the first two. Enthusiasm rapidly waning, we were just about to "throw in the towel" and admit defeat when we noticed a slight change in the forest. There were larger trees with a denser canopy, the thick undergrowth had thinned out, and there were new species of plants, including a few palms. Did we dare raise our hopes? First we saw *Astrocaryum*, then *Cryosophila*, and finally, much to our relief and joy, several magnificent clumps of *Bactris militaris*. Our three hours of tortuous trekking through inhospitable and forbidding, mosquito-infested swamp had ended. How sweet it was!

After some self congratulating and celebrating, we spent the next half hour making herbarium specimens, collecting fruits, and taking photographs. An awesome species, *Bactris militaris* forms clumps to 15 feet high and wide (Fig. 15). The enormous, 10-foot-long, simple leaves have stiff, sharp spines jutting out from the underside of the rachis and petiole. Indeed, running your finger carefully along the spines produces a plinking sound reminiscent of a music box. Although potentially showy and attractive, the infructescences, brimming with bright orange-red fruits, are usually deeply covered with fallen leaf litter and humus (Fig. 16) and harbor nests of aggressive, stinging ants, making gathering fruits a delicate operation. Fortunately, we were able to collect enough seeds to distribute worldwide, including botanical gardens in Costa Rica, Florida, California, Hawaii, and Australia among others. We also made duplicate collections of leaves, inflorescences, and fruits for herbaria in Costa Rica and the United States, the first such collections since the species was formally named and described nearly 50 years ago.

Although laden with our prized herbarium material and seeds, the return trek back through the swamp and across the rice paddy to our waiting car seemed a breeze. The fatigue faded, becoming only a distant memory, the hundreds of insect bites seemed insignificant, and the slithering creatures seemingly looming all around were somehow less threatening. It's funny how success can change one's outlook on life.

We spent our final days in the Jardín and its environs. During his sojourn at the Jardín in 1993, Mark had rediscovered *Chamaedorea stenocarpa* and *C. minima* in the wild, both thought probably to be extinct, and had brought another *Chamaedorea* to Don's attention, which turned out to be new to science. We returned to the forest remnant where Mark had found *C. minima* and the possible new species in 1993. Much to our consternation and sadness, in what had harbored healthy populations of *C. minima* just 15 months earlier, we now found destruction of all but one or two lone survivors. Cut or fallen trees and branches had crushed or covered several, while cattle, recently moved to the area, were making quick work of most of the others. For the few plants still hanging on, exposure to the sun and wind means a certain but slow death. Extensive searching revealed enough flowering and fruiting material of the other *Chamaedorea* to confirm it as new species (see accompanying article about new species of Costa Rican *Chamaedorea*). Although it, too, had suffered the ravages of forest destruction and cattle, it seemed to be faring a bit better than *C. minima*.

Although somewhat disappointed at the outcome of our search for *Chamaedorea minima*, we were not at all ready for what awaited us at the other site where Mark had found *C. stenocarpa*, a highly ornamental species valued for its diminutive stature and petite, cupped leaflets. It, like *C. minima*, was once much more common in forested areas around the Jardín. In fact, in the 1960s and 70s local peddlers would appear at the Jardín with scores of plants for sale. At one time as late as the middle 1980s the Jardín boasted collections of both species, each covering over 200 square feet and containing upwards of 200 plants. However, overcollecting, forest destruction, and even theft from the Jardín had driven this dwarf species, like *C. minima*, back into the most remote forest recesses. Where Mark had rediscovered only a handful of plants of *C. stenocarpa* only 15 months before, we found none, even after returning to the same site for a second, equally thorough

search the next day. Since the forest was not disturbed, we can only surmise that these few remaining *C. stenocarpa* had fallen prey to the unscrupulous collector under the guise of "saving the species." The future for *C. minima* and *C. stenocarpa* does not look bright; both are highly sought after by collectors and both inhabit forest remnants in southeastern Costa Rica under increasing pressure from farmers, loggers, and cattle ranchers. While there are a few plants of *C. minima* left in the wild, *C. stenocarpa* may be extinct.

We spent our few remaining days in the Jardín itself, exploring its native stands of forest and admiring its fabulous collection of indigenous and exotic palms. One afternoon, in particular, we will remember for years to come. We were down the trail to the Río Jaba examining *Chamaedorea crucensis*, *C. pedunculata* (a close relative of *C. macrospadix*), and *C. brachyclada* when it clouded up rapidly and, appropriately, began to rain. Since it was near lunch time, we headed up the trail to the dormitory and lunch room. We hadn't gone very far when the skies opened and we were caught in a torrential downpour, perhaps the greatest of our lives. Our walk back quickly became a struggle as every small path, depression, or rivulet had turned into a raging torrent. The driving rain glanced and bounced off vegetation, soaking us completely under the pitiful cover provided by the wind-whipped and shrub-torn umbrellas.

After lunch and a change of clothes, the rain let up and we were out into the Jardín again, this time to admire its cultivated palms. We were particularly awestruck by the *Asterogyne martiana* and *Calyptogyne sarapiquense*, two of Costa Rica's most stunning native palms. The rare and endangered *Hyophorbe indica* were fruiting and the *Dypsis decipiens* with their swollen trunks were certainly impressive. A fine double row of *Syagrus coronata* caught our eye, as did a group planting of a white-crownshafted *Dypsis* from Madagascar. Several *Reinhardtia* were in fruit, although those of the striking *Iguanura* and *Linospadix* were immature. We had a little time to admire some of Mark's 1993 handiwork, a group planting of *Chamaedorea minima*, before the next deluge of rain arrived.

We spent our last day in Costa Rica packing, cleaning seeds, and dropping off the duplicate herbarium material for the National Herbarium and Museum in San José. Although tired from the

hectic pace of the trip, we found time to reminisce and reflect on our experiences of the last two weeks, especially our appreciation for variability within a species, the new species we had documented, and the beauty and fragility of the Costa Rican palms, from the diminutive *Chamaedorea tenella* and *C. minima* to the spectacular and large *Bactris militaris*. Oh, did we forget to mention the rain?

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Barry Hammel and Michael Grayum of the Missouri Botanical Garden provided information

about palms and localities in Costa Rica. Gerardo Herrera was an admirable and helpful companion in the field. The Southern California Chapter of the International Palm Society, the Friends of the Virginia Robinson Garden, and the late Richard Palmer provided support for Hodel. To the maker of the rain, many thanks!

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CHAPTER NEWS AND EVENTS

Phytopathological Slide Collection Available to Chapters

The Gulf Coast Chapter of the IPS has purchased a set of over 200 slides from the American Phytopathology Society and donated these slides to the International Palm Society. At the August board meeting, the IPS accepted this outstanding collection of slides. The IPS agreed that the Gulf Coast Chapter be custodian of these slides, making them available on loan to IPS chapters and affiliates. If your chapter would like to make use of these phytopathological slides, please contact Maxwell Stewart of the Gulf Coast Chapter. Alternately, you can send an email to the new editors of their chapter journal, Fan and Feather, Joe Watkins (jwatkins@gulftel.com) or William Watkins (watkinsw@aol.com) expressing your group's interest.

News from the Palm Beach Chapter

It has been a hot, eventful Summer. The general meeting in July featured Paul Craft showing slides and speaking on his trips to Cuba. Joe Michael donated *Borassus flabellifer* seed to all who attended. Thank you, Joe! The August meeting had David McLean show us how we should plant palms and cycads in our gardens so they show off best. David is an instructor who teaches courses on palms and cycads at Broward Community College and is also a landscape designer.

Our September meeting was held on Saturday, the 7th at Ruth Sallenbach's home and palm garden. We were treated to a tour of hundreds of palm and cycad species, had our annual picnic, and held an auction of palms, cycads, and even a few other species of tropical plants.

The October 2 meeting featured Chris Migliaccio, an Associate Professor at the MDCC Wolfson campus, who also teaches courses at Fairchild Tropical Garden on palm horticulture. The plant auction followed the meeting, with a free palm to all who attended.

Our Fall Sale is being held October 12 and 13 at Morikami Park in Delray Beach. It is hard to believe this is already our 8th Annual Fall Sale.

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News from the South Florida Chapter

The South Florida Chapter held a field trip on July 20 to the University of Florida Agricultural Research and Education Center in Ft. Lauderdale. Dr. Bill Howard led the group on a tour of this extensive research collection. The Chapter also met on August 27 at Fairchild Tropical Garden for "A Photographic Tour of Palms of Cuba," by Peter Mayotte, MD. Dr. Mayotte has travelled around the world studying and photographing many species of palms.

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