

The Palms of the Makiling Botanic Gardens, Philippines



EDWINO S. FERNANDO
*Department of Forest
Biological Sciences
College of Forestry &
Natural Resources
The University of the
Philippines – Los Baños
College, 4031 Laguna
The Philippines*

ROBERTO P. CERENO
*Makiling Botanic Gardens
College of Forestry &
Natural Resources
The University of the
Philippines – Los Baños
College, 4031 Laguna
The Philippines*

AND

SCOTT ZONA
*Dept. of Biological Sciences,
Florida International
University
11200 SW 8 St.
Miami, Florida 33199
USA*

1. *Heterospathe califrons* (in the lower right) welcomes visitors to the gardens and hints at the palms within.

The native palms of the Philippines are featured in a botanical garden operated by the University of the Philippines, Los Baños. It is the best place to see the country's unique palms.

Along the slopes of Mt. Makiling, less than two hours from the bustling sprawl of Manila, lies the Makiling Botanic Gardens, in Los Baños, Laguna. The 300-hectare area now occupied by the garden was first recognized by the Americans during the colonial times as the Makiling National Botanic Garden by virtue of Executive Order No. 47 issued on 4 December 1920 by Francis Burton Harrison, then Governor-General of the Philippine Islands (McLean 1921). However, it was not until 20 June 1963 that the garden was formally established by Republic Act No. 3523 by then President Diosdado Macapagal and placed under the jurisdiction of the University of the Philippines. In the past four decades, the Makiling Botanic Gardens has amassed a significant collection of palms, most of which are native Philippine species.

A massive stone marker and the entrance gate provide tastes of the palms therein. The entrance gate (Fig. 1) boasts *H. califrons*, while the marker (Fig. 2) is planted with *Heterospathes scitula*. Both species are endemic to the Philippines. *Heterospathes scitula* is small, thin-stemmed palm with narrow leaflets. *Heterospathes califrons* (Fig. 3) is a short-stemmed, solitary palm with sturdy, undivided leaves. It is endemic to ultramafic soils on the island of Mindanao but is growing well in the volcanic soils of Mt. Makiling. This species was described relatively recently (Fernando & Sotalbo 2001), but already it is proving to be a valuable ornamental in both sun and shade.

Just beyond the entrance gate lies a collection of several native palms including *Pinanga copelandii* (Fig. 4), *Pinanga bicolorana* and *P. heterophylla*. *Pinanga copelandii* is a single-trunked species with a stem ca. 10 cm in diameter and a purplish crownshaft. Like *P. bicolorana*, its broad, multi-nerved segments are mottled on young plants (Fernando 1988). *Pinanga bicolorana* is restricted to the Bicol National Park in southeastern Luzon, hence its name. *Pinanga heterophylla* (Fig. 5) has clusters of slender stems and graceful leaves. It is used as an elegant and effective screen. *Heterospathes intermedia* is a single-stemmed palm, which like so many species in this genus has great – but largely untapped – horticultural potential. Also in this area are several tall specimens of *Livistona saribus*, *L. rotundifolia* and a towering *Orania palindan*.

Adjacent to the visitor center are the clustering *Licuala spinosa*, a solitary *Pinanga maculata* and a group of *Areca catechu*. Slightly down the

slope of the Molawin creek valley, lies a clustering palm of great interest. The palm is *Oncosperma gracilipes* (Fig. 6), a poorly-known species endemic to Luzon and Biliran Islands. The stems are about 6 m tall and spiny, but the crownshafts are a distinctive orange, a color not seen in other species of *Oncosperma*. Like so many of the palms here, *O. gracilipes* is not cultivated outside this botanical garden. Cultivation may be the only way to save this palm, which is threatened in its native habitat by deforestation.

A series of concrete paths and steps makes a steep descent to the creek, where small plants of *Arenga pinnata* are the most common palm of the forest understory. *Caryota rumphiana* is also common along the creek, although one rarely finds specimens whose leaves have not been broken by falling branches from the towering hardwood trees that make up the forest. A specimen near the bridge, growing away from its taller neighbors, bears a crown of leaves in good condition (Fig. 7).

2. A stone marker for the gardens displays *Heterospathes scitula*.



Checklist of the Native Philippine palms cultivated at the Makiling Botanic Gardens

Adonidia merrilli Becc.
Areca camarinensis Becc.
Areca catechu L.
Areca costulata Becc.
Areca parens Becc.
Areca ipot Becc.
Arenga pinnata (Wurmb) Merr.
Arenga tremula (Blanco) Merr.
Arenga undulatifolia Becc.
Caryota cumingii Lodd. ex Mart.
Caryota mitis Lour.
Caryota rumphiana Mart. var. *philippinensis* Becc.
Corypha utan Lamk.
Calamus aidaae Fernando
Calamus caesius Blume
Calamus discolor Mart.
Calamus merrillii Becc.
Calamus ornatus Blume
Daemonorops mollis (Blanco) Merr.
Heterospathe elata Scheff.
Heterospathe califrons Fernando
Heterospathe cagayanensis Becc.
Heterospathe scitula Fernando
Heterospathe intermedia (Becc.) Fernando
Heterospathe philippinensis (Becc.) Becc.
Korthalsia laciniosa Mart.
Licuala spinosa Wurmb.
Livistona merrillii Becc.
Livistona robinsoniana Becc.
Livistona rotundifolia (Lam.) Mart.
Livistona saribus (Lour.) Merr. ex A. Chev.
Oncosperma gracilipes Becc.
Orania palindan (Blanco) Merr.
Pinanga bicolorana Fernando
Pinanga copelandii Becc.
Pinanga curranii Becc.
Pinanga egregia Fernando
Pinanga geomiformis Becc.
Pinanga glaucifolia Fernando
Pinanga heterophylla Becc.
Pinanga insignis Becc.
Pinanga maculata Porte ex Lem.
Pinanga modesta Becc.
Pinanga philippinensis Becc.
Pinanga speciosa Becc.
Pinanga urosperma Becc.



3 (top). *Heterospathe califrons* has undivided leaves.
 4. (bottom) *Pinanga copelandii* is an attractive solitary palm with a purplish crownshaft.



5. *Pinanga heterophylla* is a clustering species.

The road leading to the gardens' nursery is lined with Philippine endemic trees, most of which bear the species epithet "philippinensis." Here visitors can see a mature planting of the most widely grown Philippine palm in the world, *Adonidia merrillii*. The palm is so commonly planted in the capital city, that its local common name is Manila Palm. The golden variety of *A. merrillii* can be found just outside the main gate, across from the entrance kiosk. This variety, which bears yellowish-green leaves, is popular in Thailand and is increasingly grown in other places in the world wherever *A. merrillii* thrives.

Across the creek and up a series of steps lies the Palmetum. Here, one can find a selection of climbing palms or rattans notably *Calamus merrillii* and *Korthalsia laciniosa*. A careful inspection of *C. merrillii* reveals that it forms branches that appear to emerge from the internodes. This phenomenon has earlier been described in detail (Fernando 1987). These branches produce roots and have the potential, if the cane on which they form touches the ground, of rooting and growing out as new plants.

Also found here are native understory species including *Heterospathe cagayanensis*, *H. scitula*,

H. elata, *Pinanga insignis*, *P. glaucifolia*, *P. speciosa*, *Caryota cumingii*, *C. mitis*, *Areca camarinensis*, *A. catechu*, *A. costulata*, *A. parens* and *A. ipot*. The specimens of *A. ipot* are still young and are just beginning to flower. Several *Livistona robinsoniana* and *L. merrillii* stand gallantly near the pathway.

An especially large palm, *Corypha utan*, grows along the road in the nursery area, although none of the specimens is fruiting at this time. It is native to NE India to N Australia, including the Philippines and, although it makes a handsome landscape accent, it is rarely planted as an ornamental in the Philippines. Nevertheless, this species is widely cultivated in rural areas as source of materials for making bags, hats and mats.

Also within the nursery area are other native palms, including *Arenga undulatifolia* *Heterospathe philippinensis*, *Pinanga curranii*, *P. egregia*, *P. geomorformis*, *P. modesta*, *P. philippinensis* and *P. uosperma*.

Landscapers and homeowners in the Philippines are demanding exotic palms, such as *Dypsis madagascariensis* and *Wodyetia bifurcata*, while snubbing native species (with the exception of the Manila Palm). It is a great



6. *Oncosperma gracilipes* is a spiny, clustering palm with an orange crownshaft.

pity that local gardeners and landscapers do not embrace the native palms. As the Makiling Botanical Gardens so readily demonstrate, the palms of the Philippines are a diverse and beautiful group.

LITERATURE CITED

FERNANDO, E.S. 1987. Aerial and internodal suckering and branching in *Calamus merrillii*. Rattan Information Centre Bulletin (Malaysia) 6(3/4): 5-6.



7. *Caryota rumphiana* grows throughout the forested areas of the gardens.

FERNANDO, E.S. 1988. The mottled-leaved species of *Pinanga* in the Philippines. *Principes* 32: 165–174.

FERNANDO, E.S. AND E.D. SOTALBO. 2001. A new species of *Heterospathe* with undivided leaves from the Philippines. *Palms* 45: 118–122.

MCLEAN, F.T. 1921. The Makiling National Botanic Garden. *Philippine Agriculturist* 9: 189–190.